

California Department of Transportation

SDIVISION OF ENVIRONMENTAL ANALYSIS
P.O. BOX 942873, MS-27 | SACRAMENTO, CA 94273-0001
(916) 599-1580 | FAX (916) 653-5776 TTY 711
www.dot.ca.gov



June 26, 2025

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

Dear California Fish and Game Commission:

The California Department of Transportation (Caltrans) appreciates the opportunity to provide comments regarding the California Department of Fish and Wildlife (CDFW)'s June 2025 draft Western Joshua Tree Conservation Plan (Conservation Plan) as required by the Western Joshua Tree Conservation Act (WJTCA). Please take into consideration these comments prior to the California Fish and Game Commission (Commission) adopting the Conservation Plan on June 30, 2025.

- 1) The Conservation Plan contains some confusing language in at least two places within the document that allow for interpretation of whether permitting and mitigation measures are voluntary or required. Excerpts to illustrate this confusing language are provided below. Caltrans encourages the re-write of these excerpts and similar ones throughout the document to clarify the intentions of the conservation management actions and criteria as well as expectations of project proponents to avoid misconstruction or misconception.

Excerpt from the Introduction:

"Western Joshua tree conservation will require action from many different people, governments, and organizations. The management actions in the Conservation Plan can be voluntarily adopted and implemented by project proponents, land managers, and philanthropists to help conserve and protect the species from harm."

Excerpt from Section 5.2.1 Impact Avoidance and Minimization:

"The avoidance and minimization actions in this section could be voluntarily adopted and implemented by project proponents and land managers, incorporated into project approvals by local governments and regulatory agencies, or incorporated into voluntary, cooperative agreements between relevant agencies, organizations, and other parties. The Western Joshua Tree Conservation Act (WJTCA) requires the avoidance and minimization of impacts on

western Joshua tree to the maximum extent practicable as a condition of obtaining a WJTCA incidental take permit (ITP) (Fish & G. Code, § 1927.3, subd. (a)(2)). WJTCA also states that the Conservation Plan shall include guidance for the avoidance and minimization of impacts on western Joshua trees and protocols for the successful relocation of western Joshua trees (Fish & G. Code, § 1927.6, subd. (a))."

- 2) The Conservation Plan does not describe Caltrans' role or responsibilities regarding Western Joshua Tree (WJT) habitat. Table 2-1 and Figure 2-1, "*Land Ownership within the Western Joshua Tree Range in California*", identify 2 percent of lands effected by the plan are state owned and list various state agencies as owners but neglected to mention Caltrans owns or manages lands within the range of the WJT. Additionally, Caltrans District 9's right-of-way (ROW) is mostly managed through various easement types on properties owned by many of the entities listed in Table 2-1. Other ROW acreage is managed via easement on privately owned properties or owned by Caltrans outright. For these reasons, Caltrans requests that it be mentioned explicitly as one of the state's landowners.
- 3) The extent of the WJT range overlaps multiple Caltrans districts and associated counties including western Kern County in District (D) 6, Los Angeles County in D7, San Bernardino County in D8, and eastern Kern, Inyo, and Mono Counties in D9. Many of the lane miles of highway/freeway lanes and ROW in these districts and counties are categorized as either "*ecologically core*" or "*ecologically intact*" habitat, based on Figure 4-10 in the Conservation Plan. Caltrans disagrees with this classification and has determined that existing paved roadways and ROW be best categorized as moderately degraded to highly converted WJT habitat, based on the description of conservation value category definitions in Table 4-8 of the Conservation Plan (i.e., proximity to roads; developed land). In addition, part of the conservation value "*ecologically intact*" strategies is to "*Promote restoration of habitat connectivity, natural vegetation communities, and ecological processes*" presents multiple challenges for Caltrans. These strategies would conflict with the ongoing road safety and safety of the public on roadways, utility management outside of Caltrans, maintenance requirements and programs, which include but not limited to establishing and maintaining clear recovery zones (CRZ) and the 2025 Integrated Vegetation Management Plan (i.e. invasive species, fuels reduction). CRZ width requirements vary from 7 to 46 feet wide depending on roadway traffic and environmental conditions. Therefore, relocation and planting of WJT within Caltrans ROW is infeasible. Additionally, relocation of WJT in moderately degraded to highly converted habitat is not ideal for the long-term success of these relocated individuals or the species. Furthermore, Caltrans cannot ensure that WJT planting would be accepted and maintained in perpetuity in most of its ROW, because most ROW lands are owned by entities that are not Caltrans. For example, the

majority of D9 ROW is managed via easements. For these reasons, Caltrans requests to be exempt from WJT relocation requirements when WJT individuals are taken within Caltrans ROW and other operational and management areas as part of Caltrans projects. Caltrans also requests to be exempt from the Conservation Plan's requirements regarding conserving WJT in CRZs, which are required in safely traversable areas outside of the delineated roadway.

- 4) Action A&M 1.2 of the Conservation Plan discusses and outlines the steps to protect root ball, root zone, and seedbank. However, it does not define the typical buffer zones needed to protect the root ball, root zone, or seed bank nor provide directions to delineate the appropriate buffer zones to protect the species. It is also unclear as to whom would be making the buffer zones determination. Additionally, the seedbank buffer seems speculative as to a "what if" situation. The movement and distribution of WJT seeds relies on many factors/conditions that may or may not be present at any given location. These factors/conditions would greatly change the seedbank buffer. Caltrans is requesting clarification and additional guidance on this Action A&M to avoid wasted efforts due to a potential ineffective permit condition.
- 5) Action A&M 2.4, Action LC&M 5.1, and Action LC&M 5.2 of the Conservation Plan discuss and outline the steps to collect and store seeds to preserve genetic diversity of the species. It is unclear whether these actions are meant for CDFW to execute and information on the nearest repository site is unknown. Caltrans does not have the appropriate facility to store WJT seeds and adequate staffing for after collection handling and monitoring. Caltrans is requesting clarification on who may collect WJT seeds and a list of the nearest repository sites.
- 6) Action E&A 1.3 of the Conservation Plan mentions "members of the public can 'adopt' WJT salvaged from development sites." It is unclear whether "salvaged" is considered "relocation" and would necessitate an ITP. Caltrans is requesting clarification on whether salvage is considered relocation and would be responsible for the ITP if one is needed.
- 7) The Conservation Plan provides various types of permits for the "take" of WJT as options. Types of permits Caltrans can potentially obtain are WJTCA Incidental Take Permit (ITP) or California Endangered Species Act (CESA) ITP. Caltrans also assumes it can seek coverage under the Hazard Management Permits issued under Fish and Game Code Section 1927.4 for certain maintenance activities specific to public safety on the roadways. In reading the criteria for the WJTCA ITP and CESA ITP, trimming, removal, and relocation of WJT seem to be the only criteria that need to be part of the CESA ITP. This contrasts with the WJTCA ITP which explicitly includes work in the additional buffer zones where roots and seeds may occur. It is unclear

whether project proponents can only apply for this WJTCA ITP only after they have received the CESA ITP and for work or trimming, removal, or relocation of WJT not previously planned inside the avoidance buffer (area that had been determined and designated for the protection of the remaining WJT). It is also unclear whether monitoring and reporting are required for the work, trimming, removal, or relocation of WJT inside this avoidance buffer and during construction only. Additionally, as written, it appears to imply that an amendment and in-lieu fee are not allowed under the CESA ITP. Caltrans is requesting clarification on the differences between the WJTCA ITP and CESA ITP and any restrictions for their uses.

- 8) Caltrans is supportive of efforts to utilize in lieu fees and would like to see more expanded opportunities for in lieu fees to offset unavoidable impacts to WJT.

Caltrans appreciates the opportunity to comment and thanks the Commission for considering Caltrans' comments on the June 2025 draft Western Joshua Tree Conservation Plan. Please contact me at jeremy.ketchum@dot.ca.gov, or the Division's Conservation Plan lead Chelsea Tran-Wong at chelsea.tran-wong@dot.ca.gov with any questions.

Sincerely,

Jeremy Ketchum

JEREMY KETCHUM
Chief
Division of Environmental Analysis



VIA E-MAIL: fgc@fgc.ca.gov

June 10, 2025

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-209

**Re: Large-scale Solar Association's Comments on June 11-12 Meeting Agenda –
Western Joshua Tree Conservation Plan (Agenda Item 22)**

Dear President, Vice President, and Members of the Commission:

The Large-scale Solar Association (LSA) submits these comments on the revised draft Western Joshua Tree Conservation Plan (Plan). We would strongly object to the Fish and Game Commission's (Commission's) approval of the California Department of Fish and Wildlife's (the Department's) Plan as currently drafted, particularly because of profound concerns about the Relocation Guidelines and Protocols (Appendix E). As written, the Relocation Guidelines and Protocols are unlawful and impractical, and they will advance neither western Joshua tree (WJT) conservation nor streamlined permitting of renewables projects. They are inconsistent with and contrary to the Western Joshua Tree Conservation Act itself, putting at risk the very goals of both western Joshua tree conservation and California's clean energy transition.

LSA is a non-partisan association of solar and battery storage developers that advocates appropriate policies to enable market penetration of utility-scale solar technologies in California and the Western United States. LSA's members are leaders in the utility-scale solar industry with extensive technical experience in all disciplines necessary to site, develop, engineer, construct, finance, and operate utility-scale solar and battery storage systems. LSA's member companies are principally responsible for developing much of the operational and planned large-scale solar and storage capacity in California today. Our member companies have experienced environmental and permitting practitioners on staff and as part of project teams who provide natural resources knowledge that is used in support of creative conservation solutions at their project sites.

These comments supplement LSA's joint letter of May 29, 2025 by outlining the following concerns and recommendations regarding the final Western Joshua Tree Conservation Plan:

- **Concerns about Current Process & Expected Review Timeline:** The Department released a revised 376-page Plan, which included significant changes, just days before the Commission's scheduled vote. This does not allow sufficient time for Commission or public review. LSA consequently urges the Commission to delay the vote on the full Plan until a future meeting. Furthermore, LSA recommends approving the plan without Appendix E to allow more time to revisit it separately and completely, especially given concerns outlined under our objections to the guidelines.
- **Objections to Relocation Guidelines and Protocols:** Firstly, any consideration by the Department of relocation requirements should be suspended until the appropriate population data has been collected, analyzed, and the results reported. Considering the Department's current Relocation Guidelines and Protocols are completely lacking in scientific support, the Department should instead work with applicants to fashion permit requirements that can generate useful information on best practices for successful relocation.

Additionally, requiring applicants to purchase fee title and/or conservation easements for lands to which trees from their projects will be relocated after those applicants have already paid the mitigation fees pursuant to the Act imposes unlawful double mitigation. The Commission therefore needs to direct the Department to make it clear in the Relocation Guidelines and Protocols language that the WJTCA precludes such double mitigation and that the Department cannot and will not request it from applicants.

Recognizing the limited time Commissioners and staff have to review this letter, these comments are an abbreviated version of our full technical concerns and detailed recommendations, which are included as an appendix.

Concerns about Current Process & Expected Review Timeline

Background on Plan Timeline

The Western Joshua Tree Conservation Act (Act or WJTCA) gives the Commission the final word on the content of the Department's Plan, and it imposes on the Commission a continuing duty (with the Department) to update the plan as necessary. The Act directs the

Department to “present a complete draft conservation plan at a public meeting of the commission, *for its review and approval*, by December 31, 2024” (Fish and Game Code § 1927.6(a), with emphasis added). It further specifies that: “The commission shall take final action on the conservation plan by June 30, 2025” (Fish and Game Code § 1927.6(a)). But the Commission’s responsibilities for the Conservation Plan do not end there – the Act directs: “The Department and Commission shall, if necessary, periodically update the conservation plan to ensure the conservation of the species” (Fish and Game Code § 1927.6(a)).

The Department submitted a draft Conservation Plan to the Commission, as mandated by the Act, in December 2024. The Commission received a presentation from the Department on the development of the draft Conservation Plan at its February 12, 2025 meeting. It next received a summary of initial comments on the draft Plan at its April 16, 2025 meeting. At its June 11-12 meeting, the Commission is to: “Discuss and consider approving the revised draft Western Joshua Tree Conservation Plan” (Agenda Item 22). The Agenda Item correctly reflects the Commission’s authority (and duty) with respect to the draft Conservation Plan.

Current Process – Inadequate Time for Review

On June 3, 2025, just days before the Commission’s June 11-12 meeting, the Department published its proposed revisions to the draft Conservation Plan via e-mail, directing viewers to its Western Joshua Tree Conservation Plan website. There, it posted the “Current Draft Western Joshua Tree Conservation Plan,” including links to PDFs of “Volume I – Western Joshua Tree Conservation Plan, updated June 2025” and “Volume II – Appendices, updated June 2025.”¹ On May 28, 2025, the Department had, by e-mail published “Revised Relocation Guidelines and Protocols,” which it had adopted as provided by the Act (Fish and Game Code section 1927.3(a)(4)(C)).² The Revised Relocation Guidelines and Protocols are intended to replace the version adopted by the Department in July 2024. The Department included the revised Relocation Guidelines and Protocols as Appendix E to the draft Conservation Plan it published (and it shared this document with the Commission) on June 3, 2025.

It is indisputable that the Legislature in passing and the Governor in signing the WJTCA into law did not intend or envision that the Commission would rubber-stamp the Department’s

¹ *Western Joshua Tree Conservation Plan*. California Department of Fish and Wildlife. https://wildlife.ca.gov/Conservation/Environmental-Review/WJT/Conservation-Plan?utm_medium=email&utm_source=govdelivery#overview

² *Revised WJTCA ITP Relocation and Census Documents*. California Department of Fish and Wildlife. E-mail dated May 28, 2025. <https://content.govdelivery.com/accounts/CNRA/bulletins/3e27afd>.

draft Conservation Plan, including its Appendices. This also goes for Appendix E, the Relocation Guidelines and Protocols. Nor did they anticipate that the Commission would be asked, as it apparently is being asked by the Department now, to review the Final 376-page Plan (including Appendices),³ receive and consider public comment, and approve and adopt the Conservation Plan all in the span of little more than a week.

As explained below, and under the circumstances, if the Commission does not postpone the decision whether to approve the Final Plan in its entirety to allow the public and the Commission sufficient time to consider it, other steps could be taken to address its fundamental flaws. Specifically, the Commission could adopt all of the Conservation Plan except for Appendix E and direct the Department to revise Appendix E in light of public comments and the comments of the Commission and its Members. The Commission could then consider referring the topic to the Wildlife Resources Committee or revisit Relocation Guidelines and Protocols during a subsequent meeting.

Objections to Relocation Guidelines and Protocols

Relocation Guidelines

In its revised document, the Department proposes to retain numeric percentages for the number of trees to be relocated by size class (April 2025 Version at 6). The Department touts its edits as providing “[r]educ[ed] recommended relocation percentages.” But reducing them does not remedy the fundamental flaw that they are not, to our knowledge, based on and supported by any studies or data that would be generated by an experimental program such as that called for below. Instead, the percentages continue to assert a false precision that often comes when a process is rushed.

As we stand here today, WJT are so numerous that the Department recommended in its Status Review that they not be listed under the California Endangered Species Act (CESA), finding them “widespread and abundant.”⁴ However, through implementation of the WJTCA and successive edits to the Conservation Plan including, especially, its Relocation

³ The Department published the Final Relocation Guidelines and Protocols (Appendix E) on May 28, via e-mail. To comply the deadline for public comment, the Large-scale Solar Association, the American Clean Power Association, and the Solar Energy Industries Association jointly submitted a comment letter to the Commission the next day, May 29. The Department published the Final Plan on June 3, via e-mail. The Department did not indicate in its June 3 e-mail whether the version of the Relocation Guidelines and Protocols included as Appendix E to the Final Plan was identical to the version it published on May 28.

⁴ *Report to the Fish and Game Commission – Status Review of Western Joshua Tree (Yucca brevifolia)*. March 2022. California Department of Fish and Wildlife. https://www.biologicaldiversity.org/programs/public_lands/pdfs/Western_Joshua_Tree_Status_Review_2022-04-13.pdf.

Guidelines and Protocols, the Department is insisting that some arbitrary number of trees be relocated to conserve a species it did not believe warranted listing in the first place. Any action by the Department to require relocation should come only after a full Population Viability Analysis (PVA) is conducted. The PVA must use the same definition of a western Joshua tree from the WJTCA (every stem that emanates from the ground is an individual tree). The WJTCA allows for collected funds to cover such research. Any consideration by the Department of relocation requirements, outside of experimental relocations (as explained below), should be suspended until the appropriate population data has been collected, analyzed, and the results reported. All of the scientific evidence presented to date shows that WJT are not immediately imperiled and populations are robust enough to allow this research to take place absent an arbitrary relocation threshold.

In parallel to deeper data collection, the Department should work with project permittees on the voluntary relocation of western Joshua trees (as some projects are already doing) to develop data and advance our understanding of means and methods for accomplishing this task, i.e., to develop best practices based on actual tree relocations rather than speculation. Once we understand the western Joshua tree population and the practices that yield the best relocation results, the Relocation Guidelines and Protocols can be updated to incorporate and reflect that knowledge. Thankfully, the WJTCA anticipated this dynamic and provides the Commission a role in overseeing the evolution of the Conservation Plan, including updating the Relocation Guidelines and Protocols, which the Plan incorporates, as needed.

Wholly apart from the requirements of the WJTCA, the Department asks the Commission to approve, as part of the broader Conservation Plan, an automatic and inflexible requirement to relocate a specific percentage of trees from a project. That would not only be bad policy, but irresponsible. As explained above, the requirements the Department seeks to bake into the Relocation Guidelines and Protocols are utterly lacking in scientific support and have the Department trying to put the cart before the horse. Instead, the Department should be working with applicants to fashion permit requirements that can generate useful information on best practices for successful relocation.

The Department's proposed approach would also be irresponsible to ratepayers. The question is not: "Can we relocate trees if cost and schedule are not factors?" Rather, the question needs to be: "Is the cost associated with relocating trees justified by the conservation benefits?" Relocating trees (even if recipient lands can be identified) is expensive, and those costs are ultimately passed down to the rate payers of California. In this instance, it seems it will fall to the Commission to safeguard Californians'

pocketbooks from spending on automatic, inflexible relocation efforts that may not yield results.

Limitations Double Mitigation Requirements

In implementing the Act's relocation provisions through issuing permits, the Department has been requiring applicants to acquire fee title to and/or conservation easements over "recipient site" lands. In other words, on top of paying the in-lieu fee for mitigation, the Department has been requiring permittees to acquire fee and/or conservation easement interests in lands to which trees will be relocated. This amounts to imposing double mitigation on the permittee and end running the Act's intent to save applicants time and money by paying a fee instead of having to acquire habitat mitigation lands. As noted above, the Act contemplates that the Department would itself undertake acquiring and funding the management of such conservation lands.

The Plan itself is clear about this. Consistent with the Act itself, the Plan's section on "Conservation Fund and In-Lieu Fees" (Section 6.6) specifies that mitigation for incidental take of trees by way of habitat management land acquisition (fee and/or conservation easement) is to be paid for by monies from the Conservation Fund (WJTCP, updated June 2025 at 6-16 to 6-17). So too, the draft Plan's section on "Land Acquisition Protocols" (Section 6.7) could not be clearer in this regard (WJTCP, updated June 2025 at 6-17 to 6-18; see also Appendices H ("Enhancement and Restoration Prioritization Assessment") and I ("Land Acquisition Flow Chart")).

What the Department has been doing in WJTCA permitting by requiring applicants to purchase fee title and/or conservation easements for lands to which trees from their projects will be relocated ("recipient lands"), after those applicants have already paid the mitigation fees pursuant to the Act, is nothing short of imposing double mitigation that flouts the Act and undermines its purposes. Simply put, it is unlawful. Notwithstanding the unlawfulness of this practice, it will almost certainly continue if the Commission does not direct the Department to include clarifying language in the Relocation Guidelines and Protocols that the WJTCA precludes such double mitigation, and that the Department cannot and will not request it from applicants. In the absence of such express language, it can be expected that applicants will "voluntarily agree" to foot the bill for acquiring fee title to recipient lands and/or conservation easements over them simply to obtain Department permits necessary to move forward with important projects.

Conclusion

We believe the Commission can (and should) continue its review of and final action on the Department's Plan to its next meeting so stakeholders can review and provide comments on the revised Relocation Guidelines and Protocols the Department published on May 28, and the other parts of the Conservation Plan the Department published on June 3. We believe the Commission would be well within its powers to approve the Plan except for its Appendix E, the Relocation Guidelines and Protocols, and direct the Department to review those Guidelines and Protocols to address the points made in this letter and make them compliant and consistent with the WJTCA. LSA and its member companies would also be pleased to meet with the Department and other stakeholders to collaborate on potential relocation requirements for permits that would help develop the information needed to identify best practices for successful relocation of western Joshua trees.

We appreciate your leadership in this effort and thank you for your consideration of our recommendations.

Sincerely,

/s/ Shannon Eddy /s/

Shannon Eddy
Executive Director
Large-scale Solar Association

APPENDIX: Technical Concerns & Detailed Recommendations

Background

The Economic and Policy Context

To provide essential context for the Commission's consideration of the Department's Conservation Plan and Relocation Guidelines and Protocols, LSA believes it is critical for the Commission to appreciate the current economic and policy climate in which our member companies are struggling. The renewables industry is facing immense challenges because of uncertainties around the continuation of Federal tax credits and other programs that have made renewables development financially feasible for many companies over the past decade. At the same time, while supply chain shortages, delays, and other difficulties had begun to recede since COVID wound down, recently-announced changes and potential changes in trade policy are disrupting supply chains critical to renewables development. While all this has been happening at the Federal level, in California the permitting and environmental review processes for utility-scale renewables continues to present impediments and delays incomparable to those in other states that have discouraged many developers from pursuing, and lenders and investors from financing, projects in California. The need to streamline the permitting and environmental review process for utility-scale renewables projects has been widely recognized, even resulting in the creation of a new California Energy Commission program to do just that through its Opt-in Program (AB 205).

Nevertheless, listings of species under the California Endangered Species Act (CESA) have continued to proliferate while more petitions are in the queue and promised. Permitting for incidental take of Burrowing Owl, which the Commission advanced to candidacy status in October 2024, provides a perfect (if unfortunate) example of the ever-tightening regulatory noose around the necks of the renewables sector, imposing more delay and increasing mitigation land costs under CESA. LSA did not oppose the Commission's decision to advance the burrowing owl to candidacy because the criteria for Step One of the CESA listing process ("sufficient information to indicate that listing may be warranted") are so easily satisfied. Further, LSA member companies hoped (and continue to hope) to be able to work with the Department to develop an approach to permitting for burrowing owl incidental take that conserves owls and does not hamstring much-needed development.

The WJTCA was intended to significantly reduce the delays and costs historically associated with CESA incidental take permitting. However, the Act's implementation to date by the Department, for reasons explained below, has failed to reduce delays and

costs. The Relocation Guidelines and Protocols, as currently drafted, would only formalize and fortify the maladministration of the Act that has occurred to date.

The WJTCA Core Purposes and Requirements

It seems apparent that in the implementation of the Act to date, and in the development of the Plan and the Relocation Guidelines and Protocols, the Department has lost the forest for the trees. The Act's core purposes are being disregarded and frustrated while its requirements are being misconstrued and misapplied. This is perhaps understandable given the challenges inherent in implementing any new regulatory and permitting regime. Therefore, we briefly recount the history leading up to the enactment of the WJTCA and summarize certain core provisions of the Act to "re-set" for the Commission's review and approval of the Conservation Plan and the Relocation Guidelines and Protocols.

The Road to the WJTCA

The WJTCA is the culmination of a long, arduous, and circuitous journey that started when a petition was submitted to list the western Joshua tree in 2019. As "Step One" of the CESA listing process, the Commission advanced the species to candidacy in September 2020. Because of the negative impacts of candidacy on the development of utility-scale solar projects needed to help California meet its clean energy commitments, in October 2020 the Commission adopted a 2084 regulation authorizing incidental take of western Joshua tree by a dozen renewable energy projects. The Commission subsequently issued separate 2084 regulations for hazard tree removal and for local governments to authorize incidental take of trees for residential construction and maintenance and for certain public works projects. These 2084 regulations were necessary because of the time it would take to process traditional incidental take permits pursuant to section 2081 of the Fish and Game Code as well as the exorbitant costs of habitat mitigation lands that would normally be required by the Department.

In March 2022, the Department published its Status Review for the western Joshua tree, concluding that listing the species was not warranted. In June 2022, the Commission voted 2-2 on the "Step 2" question of whether listing the species was, in fact, warranted, and the species was not listed. While the 2084 regulations had "bridged the gap," it was recognized that a novel approach to incidental take permitting was needed for western Joshua trees given the Department's findings regarding its relative abundance and widespread distribution throughout the California desert area and the locus of renewable energy and housing development for the State. This need animated the development and enactment of the WJTCA, which the Governor signed into law in July 2023. Fish and Game Code § 1927 et seq.

The WJTCA's Innovative Permitting and Conservation Provisions

The WJTCA makes the western Joshua tree the first and only non-listed (or listed) species protected by CESA subject to an in-lieu fee program for incidental take permitting. Fish and Game Code §1927.3(a)(3). While the WJTCA does not preclude a party from applying for an incidental take permit under section 2081 of CESA, it does provide an alternative permitting pathway intended to be faster and less costly than would be the case if the applicant were required to provide mitigation (e.g., habitat management lands) as traditionally required by the Department in issuing CESA incidental take permits. In-lieu of acquiring and funding the management of mitigation, an applicant can pay a statutorily-prescribed fee for each tree that may be incidentally taken. Based on censuses for individual projects, those fees are paid to the Department and pooled in the Western Joshua Tree Conservation Fund established by the Act. Fish and Game Code §1927.5.

The WJTCA is innovative in another way: it directs the Department to use the monies in the WJT Conservation Fund to itself acquire and manage lands identified as proper for western Joshua tree conservation. Fish and Game Code §1927.6(c). The intent was for the Department to use the Fund to acquire large-scale conservation lands that would benefit western Joshua trees. It was recognized that this approach would be in marked contrast to the typical “postage stamp” approach to habitat mitigation lands under CESA incidental take permitting, which typically results in the conservation of numerous small, isolated, and disconnected parcels that, individually and together, provide suboptimal and ineffective conservation for the species.

The WJTCA's text and structure make it clear that mitigation under the Act is to be accomplished through payment of the in-lieu fee, if the applicant so elects, and that other mitigation requirements cannot be imposed by the Department through WJTCA permitting.

The WJTCA's Relocation Provisions

The Act gives the Department the discretion whether to require relocation of trees when issuing a permit for a project: “The Department may include permit conditions that require the permittee to relocate one or more of the western Joshua trees.” Fish and Game Code §1927.3(a)(4). If the Department does require relocation as a permit condition, the Act prescribes three measures that the Department must include as permit requirements:

- (i) relocating trees to places and with proper orientation (to the sun and directionally) to improve their survival,
- (ii) limiting the timing of relocating trees when feasible, and
- (iii) the oversight of relocation by a desert native plant specialist.

Fish and Game Code §1927.3(a)(4)(i)-(iii).

The Act authorizes the Department to include “any other reasonable measures required by the department to facilitate the successful relocation and survival of the western Joshua trees.” Fish and Game Code §1927.3(a)(4)(A). It specifies that the permittee is responsible for implementing the measures included in the permit to assist the survival of the relocated trees and affords further protection to recipient landowners in a “safe harbor” provision. This provision expressly states that such a landowner shall not be liable for the survival of relocated trees, required to manage or maintain them, or “required to change existing land use practices, provided that the land use practices do not result in the taking, possession, sale, or further translocation of the western Joshua trees.” Fish and Game Code §1927.3(g).

The Act mandates that the Department adopt guidelines and protocols for the successful relocation of western Joshua trees. Fish and Game Code §1927.3(a)(4)(C). The Act required the Department to do this by July 1, 2024. Fish and Game Code §1927.3(a)(4)(C). The Department did so, resulting in Relocation Guidelines and Protocols dated July 2024 that are being treated as draft (and Appendix E to the Conservation Plan) for purposes of review and approval of the Conservation Plan by the Commission, as mandated by the Act. The Act expressly exempts the Department’s adoption of the Relocation Guidelines and Protocols (and any amendments of them) from the rulemaking requirements of the California Administrative Procedure Act (Fish and Game Code §1927.3(a)(4)(C)). But that does not mean the Department’s adoption and/or amendment of them is immune from the fundamental requirements, enforceable by a writ of mandamus pursuant to California Code of Civil Procedure § 1085 (“traditional mandate”), that the government’s action be authorized by law, be consistent with that law, be based on substantial evidence, and be reasoned.

In other words, the Department’s adoption and/or amendment of the Relocation Guidelines and Protocols cannot be arbitrary and capricious and is subject to judicial review. The Department cannot escape the need to act lawfully here by claiming (as it has in the past) that the Relocation Guidelines and Protocols “are not regulatory,” as the Department has itself proposed to revise them, on the very first page, in the first sentence of the first paragraph under Introduction, to state that it “developed this document to *govern* how and when to relocate western Joshua trees.” April 2025 Version at 1 (emphasis added). The July 2024 Version (at 1) said the Department had “developed this document to provide guidance on how and when to relocate western Joshua trees.”⁵

⁵ Because of the regulatory effect of the Relocation Guidelines and Protocols, the Commission’s review and approval of them is similarly subject to law and judicial review under traditional mandate for whether its actions in carrying out that review and approval are arbitrary and capricious.

LSA's Detailed Recommendations

We recommend the Commission direct the Department to revise the Final Plan and its Relocation Guidelines and Protocols to make them consistent with the text, structure, and intent of the Act. These revisions are also necessary to ensure the Department's implementation and administration of the Act are lawful and do not defeat the Act's core purposes to provide for streamlined project permitting and effective conservation of the species.

It is especially important for the Commission to direct the Department to revise its Relocation Guidelines and Protocols to recognize and utilize the Department's discretion under the Act *not* to require relocation. (The Department would exercise such discretion in exempting, as it proposes, projects involving a single, single-family residence from any relocation requirement.) In the first instance, that discretion provides an opportunity for the Department and stakeholders to plan and carry out a series of relocation "experiments" through the development and issuance of project permits to assess the costs and efficacy of relocation based on sound science as well as to identify relocation actions and practices that are shown to be effective and benefit western Joshua tree conservation. Such an interim or bridge period would afford the Department and stakeholders the opportunity to develop and assess the science around relocation (not coincidentally, at the same time the Department will be gathering information for the Updated Status Review required by the Act) and identify best practices for relocation. It is essential that we have a better understanding on the number of individual western Joshua trees (again, using the Act's definition) as well as the size of the WJT range before we arbitrarily assign relocation requirements to an unknown population size and distribution.

Instead, as drafted, the revisions to the Relocation Guidelines and Protocols (the version dated April 2025) would take the diametric opposite approach. This document sets the circumstances in which the Department will "likely" require relocation, specifying the percentages of trees (by size class) that will have to be relocated (if relocation is required), and setting forth the extremely limited situations in which the Department will grant relief from the number of trees that have to be relocated. In essence, the Department has revised the Relocation Protocols and Guidelines to make relocation automatically required for all but the smallest of projects, specified the number of trees that will have to be relocated for projects, and made it nearly impossible to obtain a reduction in that number. Appendix E at 5. The Department has made the discretion the Act affords it to require relocation illusory and instead is claiming to be compelled to require relocation of trees in Procrustean percentages for all but a very few very small projects. This is an abdication –

less technically, a cop out – that is contrary to the Act and undermines its purposes to conserve western Joshua trees while simultaneously streamlining project permitting.

Relocation Requirement Considerations

The July 2024 version of the Relocation Guidelines and Protocols provided a list of nine different “[f]actors that the Department may consider in making th[e] determination” “whether relocation will be required” for a project. July 2024 Version at 6-7. The Department’s revisions would narrow and limit those criteria to a mere four, the “presence of any of [which] *will likely result* in the Department” requiring relocation “for a project other than a single-family residential project.” April 2025 Version at 5 (emphasis added).⁶ The Department states in its accompanying “Summary of Changes to Western Joshua Tree Conservation Plan – June 2025,” that these edits to the “Relocation Requirement Considerations” provide “[s]implified thresholds for when relocation will be required.” Summary of Changes at 3. “Simplification” is not a good in and of itself, especially in a field such as this where the science remains nascent and the regulatory consequences are potentially grave for projects essential to achieving some of the State’s highest policy priorities. The “simplification” the Department proposes would come at the cost of eliminating from the Department’s consideration (in whether to require relocation) a number of factors reflecting the ecological context for the species and its habitat on and around the project (e.g., population health on project site, density of clonal growth, quality of habitat on and adjacent to project site, extent and duration of project impacts) – in other words, information central to the practice of conservation biology.

Moreover, as noted, the Department’s revisions are clearly intended to make relocation a fait accompli for all but the smallest of projects. The Department would reduce the threshold for requiring relocation for a project from an impact on more than 20 acres of western Joshua tree habitat to 10 acres. Compare July 2024 Version at 6 with April 2025 Version at 5.

Percentages of Trees To Be Relocated

In its revised document, the Department proposes to retain numeric percentages for the number of trees to be relocated by size class. April 2025 Version at 6. The Department

⁶ The Department’s creation of an exemption for single, single-family residential projects is useful and informative, as noted above, for evidencing the Department’s extremely broad discretion under the Act *not* to require relocation. With such expansive discretion afforded it by the Act – to not require, or to require relocation – the Department’s discretion as to how many trees of what size class must be relocated, how they must be relocated, and where they must be relocated, as well as other conditions, is controlled only by the Act itself and the generally applicable requirement that the government not act arbitrarily and capriciously.

touts its edits as providing “[r]educed recommended relocation percentages.” Summary of Changes at 3. The Department’s latest version of the document does indeed reduce those percentages. But reducing them does not remedy the fundamental flaw that they are not, to our knowledge, based on and supported by any studies or data that would be generated by an experimental program such as that called for above. Instead, the percentages put the cart before the horse by claiming a precise percentage is required despite the absence of any compelling scientific information that supports that figure. Any claim that a “precautionary approach” compels the imposition of *some* relocation percentages is belied by the Department’s own Status Review.

Furthermore, the Department’s attempt to characterize these relocation percentages as “recommended” (Table 1) is illusory. April 2025 Version at 6. The Department’s deletion of “recommended” before “for relocation” in the very next sentence shows it intends to impose those percentages whenever it finds relocation required.⁷ Compare July 2024 Version at 7 with April 2025 Version at 6. The Department’s revisions to that section of the document addressing potential reduction of the number of trees that must be relocated only reinforce that conclusion.

Adjustments to Requirements

As noted, the Department’s proposed revisions to this section of the document are intended to further limit the broad discretion it is afforded by the Act. The July 2024 version of the Relocation Guidelines and Protocols listed six “[f]actors that may weigh in favor of an adjustment to the number of trees within a specific size class that must be relocated” when the Department exercises its discretion whether to make such an adjustment for a project. July 2024 Version at 8. Those six factors involved ecological conditions for western Joshua trees and their habitat on and adjacent to the project site, as well as practical considerations for the recipient site (e.g., “[t]he size and physical characteristics of the available recipient sites”). July 2024 Version at 8. The Department’s revisions would reduce the number of factors to three. April 2025 Version at 7.⁸ Notwithstanding the proviso the Department would add that it is not limited to considering those three factors, the reduced list is clearly drafted to constrain the Department’s discretion.

Those three factors, in stark contrast to the six factors previously listed, do not provide a holistic accounting of ecological conditions for the trees on the project site and the

⁷ So that it now reads: “The number of trees in each size class for relocation under a WJTC A ITP will be rounded to the nearest whole number and be greater than zero, provided at least one tree in that size class will be lethally taken.” April 2025 Version at 6.

⁸ The Department did not address these revisions in its “Summary of Changes.”

conditions of the recipient site relevant to relocation. The only factor reflecting ecological considerations is one added to the list of factors: “If project impacts will occur in areas with high amounts of clonal growth.” April 2025 Version at 7. Another factor is carried over from the list of six: “If a higher number of trees will be relocated in a different size class.” April 2025 Version at 7; July 2024 Version at 8 (“A higher number of trees in a different size class will be relocated”). The third factor is also new (and itself references an entirely new section the Department proposes to include in the document): “If a legal/regulatory or a technical/technological limitation makes the relocation requirement impracticable as discussed in the Evaluation of Legal and Technical Limitations section, below.” April 2025 at 7. The new section, in turn, explains that in requesting modification of the relocation requirement “the applicant must submit information to demonstrate that relocating the number of trees identified by the Department is ‘wholly impracticable.’” April 2025 Version at 10. “Wholly impracticable” means “limitations that make the required relocation impossible.” April 2025 Version at 10. And the new section identifies only two types of “impossibility”: “legal impossibility” and “technical or technological impossibility.” April 2025 Version at 10. Those two types of impossibility are defined in exceedingly narrow terms so that their occurrence is likely to be vanishingly rare. 2025 Version at 10.⁹ The three factors the Department wants to limit itself to considering would create a regime wherein it would be extraordinarily difficult and rare for an applicant to obtain relief from the relocation requirements imposed by the Department for their project.

The revisions the Department seeks to make to the sections of the Guidelines discussed above are all intended to limit and constrain the Department’s broad discretion whether not to require (or to require) relocation for a project and, if so, what number of trees to require be relocated. The regime the Department seeks to establish would be one in which almost every project needing a WJTCIA Incidental Take Permit would be required to relocate

⁹ Both terms are defined in the Evaluation of Legal and Technical Limitations section (at April 2025 Version at 10):

“Legal Impossibility” is defined as: “A statutory or regulatory limitation to relocating western Joshua trees exists such that compliance with the relocation requirement is legally impossible or would necessarily result in fundamental changes to the project that make it impossible to fulfill the project’s objectives. For example, a requirement to relocate trees may be legally impossible if compliance with the relocation requirement would clearly cause the project proponent to violate another permit issued for the project.”

“Technical or Technological Impossibility” is defined as: “A significant technical or technological limitation to relocating western Joshua trees exists such that compliance with the relocation requirement is impossible. For example, a requirement to relocate a mature western Joshua tree may be very difficult if the grade of the landscape precludes use of heavy equipment.”

trees at percentages specified by the Guidelines with almost no prospect of obtaining modification of the number of trees to be transplanted from the Department.

The WJTCA, of course, mandates no such thing. Not only that, the WJTCA does not allow the Department to so limit its discretion. Establishing the regime the Department proposes would be contrary to the Act's text, structure, and intent to facilitate incidental take permitting and conservation of western Joshua trees.

From: Adam Harper <aharper@calcima.org>

Sent: Thursday, July 10, 2025 11:22 AM

To: FGC <FGC@fgc.ca.gov>

Cc: Baer, Isabel [REDACTED]; Kaiser, Andrew (Drew) [REDACTED]

<[REDACTED]>

Subject: CalCIMA Comments Western Joshua Tree Conservation Plan - July 10 2025

WARNING: This message is from an external source. Verify the sender and exercise caution when clicking links or opening attachments.

Thank you for the additional time to review changes and provide comment. Please find our comments and suggestions for revisions and amendments.

I also want to take the time to thank the Commission and Department staff for your assistance and professionalism throughout this process.

Respectfully,

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Adam Harper

Senior Director of Policy

455 Capitol Mall Ste. 210 | Sacramento, CA 95814

Cell: (916) 606-1668

Email: aharper@calcima.org

CalCIMA: [Website](#) | [Facebook](#) | [Instagram](#) | [X](#) | [LinkedIn](#)

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July 9, 2025

Erika Zavaleta, President
California Fish and Game Commission
715 P Street, 16th Floor
Sacramento, CA 95814

RE: CalcIMA Comments and Suggested Amendments on the Western Joshua Tree Conservation Plan

Dear President Zavaleta and Members of the Commission:

CalcIMA appreciates the opportunity to provide feedback on the Draft Western Joshua Tree Conservation Plan (Plan). This letter consolidates our previous comments and outlines specific amendments essential to ensuring the Plan achieves its dual goals: conserving the Western Joshua Tree while enabling California's critical infrastructure and economic development.

The Western Joshua Tree is an iconic species, occupying 1.8 million acres of core habitat and numbering between 3 and 9 million. Its conservation is vital, but policies must be grounded in clear, measurable objectives and balanced with California's need for renewable energy and infrastructure development. We also recognize that this is a work in progress and the first draft reflects an evolving effort.

Summary of Concerns

CalcIMA's prior comments, included for reference, have highlighted key issues, including:

- **Incomplete Plan:** Despite recent updates, critical components remain undefined, including conservation acreage targets and scientific justifications for exemptions.
- **Implementation Challenges:** Expanded relocation protocols (e.g., 50 km radius) significantly increase logistical challenges and financial burdens for stakeholders.
- **Unrealistic Scope:** Proposed climate refugia land acquisitions of up to 479,000 acres lack clear funding and feasibility analyses, with an estimated \$5.7 billion cost.

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- **Lack of Clarity in Avoidance and Minimization:** The absence of clear frameworks undermines compliance and conservation outcomes.

Recommended Amendments

We recognize that due to time constraints and incomplete knowledge, not all clarity can be provided now. We request the following amendments to smooth implementation while building the foundation for a complete final plan in future years. These measures are essential to managing implementation impacts on existing communities.

We urge the Commission to adopt the following amendments, previously submitted and detailed in our May 8, 2025, letter and CalPortland's Exhibit 2 submission (modifications to Chapter 5, incorporated here by reference):

1. **Address Existing Projects and Homes:** Recognize pre-existing homes and infrastructure as meeting prior avoidance and minimization requirements under earlier laws. Mitigation should remain the primary requirement for these entities.
2. **Provide Clear Safe Harbor for Relocated and Preserved Trees:** Protect relocated and preserved trees from future regulatory and financial burdens to incentivize conservation.
3. **Provide that Restoration Can Act as Minimization:** Western Joshua Trees number in the millions, live for hundreds of years, and are believed to require human assistance to survive in most of their existing range under foreseeable climate scenarios.

We need to learn and teach ourselves to nurture and care for the trees in the expansive existing habitat areas outside expected climate refugia if we are to maximize the survival opportunity of the species. Encouraging restoration and human care, especially in regions where the Commission believes climate change makes the tree's survival unlikely, is sound policy.

The Commission has clearly stated its belief, with the creation of climate refugia, that the tree is not expected to survive in its existing range. These amendments align with the statutory duty to preserve the tree while promoting effective economic development. Enabling human involvement in the care and preservation of the tree ensures the species' best chance of survival.

Additional Recommendations

We also urge the Commission to:

- Maintain a state-managed list of landowners and properties, by Assessor's Parcel Number, willing to accept relocated Western Joshua Trees.
- Remove remaining fire safety buffers that apply to fire agencies to ensure fire safety.
- Make all studies referenced in the Plan publicly accessible, including those behind paywalls.

Fire Safety Buffer Removals Incomplete – Please Fix for Fire Safety!

We appreciate the removal of certain buffers from the Plan following stakeholder input. However, as noted in our June testimony, some buffers remain—specifically those applying to

fire agencies—which could interfere with land clearance practices critical for community and Joshua Tree safety.

For example, Appendix D-6 still includes:

- **Action A&M 3.5.1 Bullets (1) AND (2)**
 - (1) Fuel break construction in or adjacent to western Joshua tree habitat can take or damage trees. If feasible, fuel breaks should not be installed within 56.7 meters (186 feet) of western Joshua tree individuals in order to protect nurse plants, seedlings, and the seedbank.
 - If feasible, wildland-urban interface (WUI) fuel reduction treatments should be focused on removing vegetation outside of a 56.7-meter (186-foot) buffer zone around western Joshua tree individuals to reduce fuel continuity and reestablish the composition and structure of the ecosystem in western Joshua tree habitat.

Given the evidence in the Plan and the removal of buffers for other stakeholders, it seems unintended to apply these requirements to fire agencies. We urge the Commission to remove these remaining buffers to align with the buffer removal revisions.

Recognition of Improvements

While we continue to have concerns, we want to acknowledge and thank the Department and Commission for several meaningful improvements, as well as the clarifications provided by the Director at the June 12 hearing. We were initially concerned that statutory language protecting project purpose and feasibility as constraints on the practicability of minimization efforts, including relocation efforts, was not being adequately reflected in the documents. However, we appreciate that the relocation guidelines were expanded to include an “Evaluation of Legal and Technical Limitations.” We also note the Director’s strong on-the-record statements recognizing economic practicability—an important acknowledgment, given that different sectors have varying economic capacities. While it is unclear whether these clarifications fully satisfy the statutory requirement in Section 1927.3—that “[w]hen various measures are available to meet this obligation, the measures required shall maintain the permittee’s objectives to the greatest extent possible. All required measures shall be capable of successful implementation”—the changes, in combination with the Director’s remarks, represent a significant improvement. Thank you.

Conclusion

The Western Joshua Tree Conservation Act reflects a balanced intent to preserve this resilient species while fostering economic opportunity. CalCIMA remains committed to constructive collaboration to achieve a conservation strategy that protects California’s natural heritage and supports its communities.

We respect that the initial plan will not be perfect nor complete, but we urge the Commission to ensure humans can work productively to benefit the tree without being penalized for doing so. Thank you for your attention to this matter. We welcome the opportunity to further discuss our

recommendations and have attached our previous comments to inform considerations for the Plan's next revisions.

Respectfully,



Adam Harper
Senior Director of Policy
CalCIMA

Attachment(s)

CalCIMA Attachment – Comment Letters

CalCIMA Attachment 2 - CalPortland's Exhibit 2 – Restoration Amendment

Attachment(s)
WJT Conservation Plan CalCIMA
Comments

January 30, 2025 - With Attachments

March 3, 2025

April 01, 2025

May 08, 2025 (With Suggested Amendments)

May 29, 2025



January 30, 2025

Samantha Miller
President
California Fish and Game Commission
715 P Street, 16th Floor
Sacramento, CA 95814

RE: Western Joshua Tree – Draft Conservation Plan – Initial Comments

Dear President Miller,

CalCIMA appreciates the opportunity to provide feedback on the Draft Western Joshua Tree Conservation Plan (Plan) to the California Fish and Game Commission (Commission). Ensuring the conservation of this iconic species is an important undertaking as is realizing the significant promise of the Western Joshua Tree Conservation Act, this was perhaps best expressed by Assemblymember Juan Carrillo on the Assembly Floor as SB 122 was voted upon:

“This bill is not just about preservation of a remarkable species, it is a testament to the ability to strike a delicate balance between safeguarding our natural heritage and providing a pathway for the much needed economic development that our district yearns for.”

The dual functions of this Act were clearly expressed; namely, to preserve the iconic western Joshua tree from climate change while enabling local economic development.

CalCIMA strongly supports both missions and with the Legislature and Governor’s bold action we should recognize the western Joshua tree is no longer conceivably threatened or endangered. It should also be recognized that drastic actions are not necessary, but the plan does not seem to reflect that and is seeking to place over 479,000 acres into durable conservation by 2033¹ despite the tree currently occupying over 3.23 million acres including 1.8 million acres of ecologically core and ecologically intact habitat, equal to 25% of the total developed acres of humans in California. We

¹ Appendix II – Table II – Calculation of effectiveness criteria 2 Acreage from Table 4-10 Conversion

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also believe the Plan is incomplete and therefore deficient. And finally, we have several innovative suggestions to preserve the tree and promote local opportunity. We discuss these issues at length in this letter.

Background

CalCIMA is the statewide voice of the construction and industrial materials industry. With over 500 local mines, production plants, and facilities throughout the state, producing aggregate, concrete, cement, asphalt, essential minerals, and precast construction products, our members produce the natural materials that build our state's infrastructure, including public roads, rail, and water projects; homes, schools and hospitals; they assist in growing crops and feeding livestock; and play a key role in manufacturing consumer products.

The continued availability of our members' materials is vital to California's current and future economy and environment, and local sources of these materials are essential to reducing the supply chain emissions of manufacturing and delivering the technologies we will need for a climate-smart future as well as building our homes and transit systems.

The Western Joshua Tree Conservation Plan area covers all or most of three aggregate production-consumption regions in California. The three regions are expected by the State Geologist to consume 1.6 billion tons of construction aggregate to meet human natural resource demands over the next 50 years and only 436 million tons of these vital natural resources are currently under permit². We offer some specific ideas regarding improving mineral resource conservation and development for society within the mission of the conservation plan later.

The Conservation Plan is incomplete.

The legislature gave the California Department of Fish and Wildlife (CDFW) and the Fish & Game Commission a clear mandate with precise criteria. They gave direct guidance on the scope of the conservation plan in two parts. First, they defined conservation and next they specified the types of actions which would be taken within the required conservation plan. The legislature and governor defined Conservation as,

““Conserve” or “conservation” means to use, and the use of, methods and procedures that are necessary to bring species listed pursuant to Chapter 1.5 (commencing with Section 2050) of Division 3 to the point at which the measures provided pursuant to Chapter 1.5 (commencing with Section 2050) of Division 3

² Map Sheet 52 (Updated 2018), Aggregate Sustainability in California, (Table 1 Data for; Barstow-Victorville P-C region; Palmdale P-C Region, and San Bernardino P-C Region) California Geological Survey, 2018.

are no longer necessary, and for species that are not listed to maintain or enhance the condition of the species so that listing will not become necessary.³

The legislature recognized that the western Joshua tree is both 1) only a candidate species, and 2) CDFW recommended NOT Listing. The definition therefore provides clear instruction that the conservation plan for the western Joshua tree must describe ***“the means to use, and the use of methods and procedures that are necessary to maintain or enhance the condition of the species {western Joshua Tree}, so that listing will not become necessary”*** while also providing authorities should the Commission list. That is the purpose and objective of the conservation plan as clearly defined by the legislature. Further under Sec. 1927.6, the Conservation plan was specified as using these methods,

*“The department shall develop and implement a western Joshua tree conservation plan in collaboration with the commission, governmental agencies, California Native American tribes, and the public. The conservation plan shall incorporate a **description of management actions necessary to conserve the western Joshua tree and objective, measurable criteria to assess the effectiveness of such actions.** The conservation plan shall also include **guidance for the avoidance and minimization of impacts to western Joshua trees and protocols for the successful relocation of western Joshua trees.** The department shall present a complete draft conservation plan at a public meeting of the commission, for its review and approval, by December 31, 2024. The commission shall take final action on the conservation plan by June 30, 2025. The department and commission shall, if necessary, periodically update the conservation plan to ensure the conservation of the species.”*

Unfortunately, the plan was not complete as provided to the Commission and as a result analysis of its methods and procedures are difficult and it is challenging to determine feasibility of the plan before the Commission. Incomplete aspects of the Plan include:

1. The Plan does not define what condition of the WJT population and/or distribution of the WJT in California would maintain the current CDFW recommendation that the species need not be listed. For example, how many WJT, distributed how broadly, and in what regions?
2. The Plan fails to define the primary effectiveness criteria level in measurable terms only stating generally, *“Global greenhouse gas emissions are reduced to a level that ensures the species is not at risk of extinction from climate change impacts in California.”⁴*
 - a. This statement is not a method, procedure, or measurable.

³ Fish and Game Code §1927.1 (c)

⁴ Draft Western Joshua Tree Conservation Plan, California Department of Fish and Wildlife, P 5-45

3. Key property acquisition criteria rely extensively on information not available to reviewers (Shyrock et al. forthcoming.) and cannot be peer reviewed.
4. The unavailable information shapes Tables 4-9 to 4-12 and is used to set effectiveness criteria, and defines the Climate Refugia CDFW wants to acquire 90% of by 2033 – (Over 479,000 acres).
5. The Plan fails to provide the Commission with background information on ongoing western Joshua tree ITP permitting and effectiveness in WJT conservation. For example, the volume of acres and trees and take fee generated income received to date.
 - a. The Plan is financed by the ITP fee's, and such data is vital to analysis of Plan scope and implementation feasibility by the Commission. It is currently the only identified income for the program and should be provided to the Commission, so the Commission is aware of what financial resources are available to the Plan.
6. The Plan fails to include estimated costs and resource requirements of implementing the Plan. In **Appendix IV** we provide a list of 50 duties the Department takes upon itself in the Plan and the memorandum of understanding (MOU'), if enabled, would add many more. At this time the Commission does not have the information needed to quantify, or evaluate, the financial burden these new costs will impose upon the Department.
7. We are getting our first public discussion and explanation two months late in February 2025 not December 2024.
 - a. Final adoption should be extended **at least** 2 months to ensure full review and comment and to ensure the Department, Commission, and stakeholders get a complete Plan with all detail for review and comment

Due to this incomplete data, the Commission currently lacks the information necessary to complete the task delegated to it by the legislature, namely, approving a conservation Plan using measurable criteria and providing guidelines to prevent the western Joshua tree becoming a listed endangered species under CESA. Clear measurable guidelines enable advanced planning, adaptation and help the region enable economic opportunity. Unclear or infeasible guidance may result in delay, uncertainty and economic harm on development and the species. We need a clear objective that is defined and measurable and achievable by Californians. The legislature recognized this and required a complete measurable plan be submitted by CDFW. We recommend seeking clarity from the department on these issues before proceeding. Further, you must verify CDFW has the capacity, finances, and resources to implement the Plan. Or the unmet objectives could become obstructions to permitting and preservation.

No Demonstrated Capacity to Implement Plan

A significant reason the state ended up with a Western Joshua Tree Conservation Act instead of managing the species under the California Endangered Species Act (CESA) was due to the Department's statements to the Commission and the legislature that they lacked the resources to manage the western Joshua tree as a traditional species under CESA. This was because of the tree being "widespread and abundant"⁵. Commissioners discussed and expressed concerns and hopes for another way as well. As noted during the petition review, Director Bonham stated,

"I'd be remiss, it's not I think a criteria for you per se but the practical effect of a listing here for the department is pretty enormous at the workload level, because unlike other listings it is a species with right now abundance in the millions across a large range. That will create practical challenges."

The Plan before the Commission requires significantly more capabilities and resources of the Department than traditional CESA does. In Appendix IV we attach a list of 50 different mandates and roles that CDFW is assigned within the Plan, not even considering what mandates and authorities they may take upon themselves in a MOU with an agency or tribe. Further, the counting of 1-inch sprouts as well as the Department's hyper focus on western Joshua tree relocation appears to have made this act's permitting system at least as complex as the traditional CESA system. We know of no incidental take permit issued yet in the new method although urgent hazard permits have been. Incidental take permits issued under the new system should be provided to the commission and public and uploaded to the document library for transparency. Finally, under this Plan the department is seeking to evaluate and acquire tens to hundreds of thousands of acres of durably protected lands annually. Which is far more than the 3,136 acres of compensatory mitigation we found in 21 CESA incidental take permits issued over 3.5 years. In short, the Plan requires far more resources from the Department than a CESA managed program would.

Further, the potential cost of the extensive planned CDFW acquisitions should be a concern to the Commission. CalCIMA reviewed 21 single species covered ITPs issued under CESA regulations between 2022 and 2024, which were uploaded to the CDFW Document Library⁶. Our analysis is included as Appendix I, with results summarized in Table 1. We focused on single species ITP's as they facilitate knowing impact and mitigation acreages as they apply to the specific species. While we could identify CESA ITP permits we were not able to identify a single WJT ITP issued to a permittee under the new act. We would presume some of the 44 applications noted as having been filed in the 2023 annual report should have been processed by now⁷. The summary of the analysis is in Table 1.

⁵ Report to the Fish and Game Commission Status Review of the Western Joshua Tree, CDFW 2022 P. 54

⁶ <https://nrm.dfg.ca.gov/documents/DocViewer.aspx>

⁷ Western Joshua Tree Conservation Updates, CDFW, Feb 2, 2024

Table 1: Totals - Single Covered Species Incidental Take Permits for Western Joshua Tree (2022-2024)

Total WJT Permits	Total WJT Acres Impacted	Total WJT Acres Compensated	Ratio	Total Security Cost	Security Cost Per Compensated Acre
21	1187.81	3136.98	2.64 to 1	\$37,414,282.72	\$11,926.87

If we apply those security costs and per acre costs to the anticipated acreage acquisitions in the Plan that CDFW has proposed, acquiring 3-5% of western Joshua tree range annually results in acreage targets of between 97,000 and 161,000 acres annually with a potential cost of \$1.1 billion to \$1.9 billion. This seems to be outside the capacity of funding from permitting impacts to trees. Real, achievable, and feasible targets are needed in the Plan. The Plan fails to demonstrate a need for these vast acreages.

As we reviewed the Plan, we saw opportunities for innovation and use of existing resources to promote the western Joshua tree's well-being. As we view the Act, the legislature defined a finite task—to plan to prevent the Joshua tree becoming listed as a species under CESA. Considering the trees' abundance, broad range and long life, the Plan should not require drastic action to prevent the tree from becoming a threatened species.

The department seems to prioritize taking private and multi-use lands allocated for human uses and entering into MOUs rather than focusing conservation on already public and conserved lands and tracking the implementation of guidelines into plans by agencies. Considering the strength of the western Joshua tree as detailed within the Plan we think the latter approach—conservation and monitoring under current authorities—is preferred. Our table 2 converts the CDFW percentage data in table 4-9 to acre data to demonstrate how much land is already protected for the tree. The Department identified 740,000 acres as in areas with land protections using the total of wilderness lands and those with preservation and light recreation⁸. This ignores Defense lands governed by the Sikes act which the Plan specifically notes includes a 52,000 acre maintained woodland and total over 572,000 acres⁹. For comparison the city of Los Angeles land area is just under 300,000 acres.

Table 2: Conversion of Draft Table 4-9 “Percent of Western Joshua Tree Range in California within Conservation Value Categories by Management Unit” to Acres

⁸ Draft Western Joshua Tree Conservation Plan, CDFW December 2024 (Pg 4-62)

⁹ Draft Western Joshua Tree Conservation Plan, CDFW December 2024 (Pg 2-27)

	Ecologically Core (Acres)	Ecologically Intact (Acres)	Moderately Degraded (Acres)	Highly Converted (Acres)	Not Categ (Acres)	Total (Acres)
Little or No Protection	97,023.36	206,983.17	468,946.24	294,304.19	84,086.91	1,148,109.76
Mixed Use	142,300.93	326,645.31	61,448.13	3,234.11	249,026.62	779,420.99
Defense	336,347.65	181,110.27	42,043.46	9,702.34	-	572,437.82
Wilderness	119,662.14	203,749.06	3,234.11	-	135,832.70	459,243.90
Preservation with Light Recreation/Other Use	109,959.81	97,023.36	22,638.78	3,234.11	38,809.34	271,665.41
Tribal Land	-	3,234.11	-	-	3,234.11	3,234.11
Total	805,293.89	1,018,745.28	595,076.61	310,474.75	504,521.47	3,233,820.93

We know the Commission understands the reality of climate change. We are in the most significant transition of society in human history and the cost of the accelerated transition of energy is going to be enormous and stretch our society to the breaking point. The only way political support is maintained for direct action in a democracy is making the costs of the transition economically bearable by the population. Applying mandates that cost millions and generate climate emissions for no reasonably foreseeable benefit is harmful to the mission of the Commission and preservation of the Joshua tree and should therefore be avoided. This Plan is applying the costs of climate change to the public of California. Future homeowners, workers and energy consumers will pay in the cost of development. Help mitigate those climate costs.

CalCIMA commissioned an economic analysis of the potential cost impacts of SB 122 and the western Joshua tree Conservation Act on our sector back in 2023. The analysis found that the impact of the law was likely to increase construction aggregate (rock and sand), costs on state and local government for infrastructure by between \$130-\$170 million annually¹⁰. And that's rocks not renewable energy. The Plan

¹⁰ Impact of SB 122 Western Joshua Tree Provisions in Aggregate Mining Operations and the Economy, Capitol Matrix Consulting Williams/Genest – October 2023

impacts three significant aggregate production and consumption regions. Added material costs won't only impact on the cost of developing infrastructure but costs to build and maintain homes, hospitals and workplaces. Natural resources, energy, minerals, food, and water are the foundations of our human well-being and productivity.

This issue is especially critical to minerals and renewable energy as we need to enable the new energy systems of the future to develop. California has deposits of all 50 critical minerals and the regions covered by the plan are mineral rich areas. Inhibiting development could deprive our economy of the opportunity to be a economic leader in new energy materials and manufacturing by inhibiting permitting and development of the natural resources necessary to develop those sectors.

Knowledge Derived from Plan Regarding western Joshua Tree

As we reviewed the Plan we were again struck by the vast acreage and range of the western Joshua tree detailed above, as well as other information.

- There are currently 1.8 million acres of Ecologically Core and Ecologically Intact western Joshua tree habitat¹¹ = equal to 25% of the total human developed land¹² in California.
- The Plan predicts a climate refugia in the reasonably foreseeable future of 756,000 acres representing an area 2.5 times the City of LA's land area and 23% of current Joshua tree habitat area and equivalent to 11% of lands currently developed by humans in California.
- Approximately 22.6 percent of the western Joshua tree range (740,000 Acres) in California is within areas that already have land protections and are being managed for conservation¹³.
- Approximately 36.4 percent of the predicted climate refugia category is within areas that already have land protections in place and are generally being managed with conservation in mind¹⁴.
- There are currently 572,000 acres of Defense lands within the range of western Joshua tree.
- Edwards Air Force Base maintains an INRMP for 52,719 acres of Joshua tree woodland under the Sikes Act¹⁵ and operates a planting program.

¹¹ Appendix 3 – Table 4-9 Conversion to Area and Analysis – CalCIMA 2025

¹² California's Nature-Based Solutions Climate Targets, Administration of Governor Newsom, (pg. 22) April 2024

¹³ Draft Western Joshua Tree Conservation Plan, CDFW December 2024 (Pg 4-62)

¹⁴ Draft Western Joshua Tree Conservation Plan, CDFW December 2024 (Pg 4-64)

¹⁵ Draft Western Joshua Tree Conservation Plan, CDFW December 2024 (Pg 2-27)

- Edwards has identified all Joshua trees over 3 meters and reports that populations are stable and increasing¹⁶.
- In addition, Yoder et al. (2024) found that the median interval between flowering years has decreased from historical (i.e., early 20th century) levels of flowering every 5 years to every 4 years¹⁷.
- The Plan discusses extensive use of the western Joshua tree by Native Americans over thousands of years as a material and food¹⁸.
- Joshua tree roots were harvested selectively by tribes and collected in batches to provide rest periods for the plants¹⁹.
- Pruning and cutting plants are strategically done to enhance plant growth as well (Anderson 2005, 2018)²⁰.
- The density observed in Joshua tree woodlands suggests that Joshua trees were stimulated to grow in the desert, especially near culturally important sites (Stoffle et al. 1989, 98; Stoffle et al. 2022, 23)²¹.
- There are documented accounts of Native Americans saving the seeds of agave, yucca, and desert fan palms and planting them in specific locations within the Mojave Desert, demonstrating the integral nature of plant cultivation in Native American cultural systems.²²
- Joshua tree is abundantly present and has a wide habitat range in the desert Southwest because of this skillful knowledge and practice. The sustainability of Native American practices allows natural vegetation and human inhabitation of the landscape to coexist²³.

We select these facts and quotes from the Plan as evidence of the range and resiliency of the Joshua tree both currently and in the reasonably foreseeable future. There is a reason the Department did not recommend listing and the Commission has not acted on the petition. Listing isn't justified on these facts and population alone.

In addition, we selected those that demonstrated the extensive use and resiliency of western Joshua tree to human interaction, including those that indicate symbiotic benefits to the tree and humans from the interaction. They speak to the potential for innovative management and programs. They clearly demonstrate that low level human

¹⁶ Draft Western Joshua Tree Conservation Plan, CDFW December 2024 (Pg 2-28)

¹⁷ Draft Western Joshua Tree Conservation Plan, CDFW December 2024 (Pg 4-24)

¹⁸ Draft Western Joshua Tree Conservation Plan, CDFW December 2024 (Pg 3-4 to 3-6)

¹⁹ Draft Western Joshua Tree Conservation Plan, CDFW December 2024 (Pg 3-6)

²⁰ Draft Western Joshua Tree Conservation Plan, CDFW December 2024 (Pg 3-8)

²¹ Draft Western Joshua Tree Conservation Plan, CDFW December 2024 (Pg 3-10)

²² Draft Western Joshua Tree Conservation Plan, CDFW December 2024 (Pg 3-10)

²³ Draft Western Joshua Tree Conservation Plan, CDFW December 2024 (Pg 3-11)

impacts, including agriculture and other land uses, do not harm the species and may even enhance and spread it. It demonstrates that our agricultural expertise can also be utilized to improve the species' condition.

Those facts open the door to substantial innovation within the Plan and indicate there is no need for criteria targeting the purchase and creation of hundreds of thousands of additional acres of conserved lands. The Plan identifies vast conserved lands already occupied by the trees. Further, science establishes it will take centuries if not millennia for Joshua tree range to shrink due to climate change. The data proves human agricultural practice, traditional ecological knowledge (TEK) in this instance, and use can benefit or at least not harm the tree. Finally, the state has decided to conserve the tree actively, not just protect it from harm. More than TEK, items like genetics will inform management and restoration establishment activities.

The tree isn't threatened under these facts, and we don't need a massive Plan to ensure it doesn't become threatened. The target the legislature and governor gave CDFW, and the Commission doesn't require drastic action. We can undertake steps to manage the climate, and fire threats the Plan identifies as the species' primary threat. We can provide guidance for local agencies to include in policy as directed by the legislature. These include science and activities such as, determining which tree populations handle predicted climates and ranges best, identifying whether relocation or planting is best, providing safe harbors to private landowners to spread trees beyond conserved areas, and promoting the creation of populations outside primary population and fire threat areas.

We don't yet need to be using the scarce resources collected in impact fees, a finite number, to fund acquisition of lands a climate model says will be suitable in 70 years, we have the time to wait and know much more considering the existing population and range of the Joshua tree before making acquisitions and significant financial resource investment decisions.

Delete MOU Effectiveness Criteria

The Plan appears to utilize the effectiveness criteria requirement of MOUs to leverage local agencies to enter MOUs. First, single agency control is undesirable for preventing a threatened status to the species. We can't place all our eggs in one basket and fortunately our system of government separates powers so we can have federal managers and state managers, and local managers as we already do to benefit the species. This is a benefit, not a harm to the species survival.

The Plan should respect other agencies' authorities and expertise and instead use guidance as directed by the legislature to broadly and transparently direct action to benefit the species. Adoption of guidance can measure implementation just as effectively and a lot more cheaply than active engagement in a MOU. It is simply far easier and less expensive to measure adoption of guidance than to manage fire districts and local agencies' Joshua tree activities via MOU. We recommend Incorporating the

guidance the legislature asked for within the Plan then and have the department report on local agency adoptions and implementation in the two-year reviews.

If MOUs are for some reason a priority, a justification should be included in the Plan of why MOU's and breaching the separation of powers is desirable over providing guidance and reporting on agency implementation. How is it necessary to prevent listing as threatened or endangered? The statutorily defined objective of the Plan at this time. Why are MOUs and department control important? What is the extra necessary benefit? Why are the federal land managers and structures such as the Sikes Act functionally deficient? What will be included in the MOUs?

If MOUs are pursued and included as effectiveness criteria a complete list of potential MOU partners should be included in the Plan for evaluation of the criteria thresholds. We will also need the approximate areas they manage in relation to the Plans coverage area and the species range. The effectiveness of the effectiveness criteria cannot be evaluated without knowing the universe the criteria apply to and how it relates to the range of the tree. Our knowledge, as well as agency and districts' knowledge, and the Plan is incomplete without providing such measurable data to inform the review of sufficiency of the criteria.

Finally, considering scarce resources, the Commission may even wish to prohibit CDFW from the cost and liability of engaging in MOU activities particularly related to fire management, except those consistent with Fish and Game Code § 1927.2 (h) under the authority of the Plan,

“(h) This section shall not preclude the department from authorizing, by permit or memorandum of understanding, the taking, possession, purchase, or sale within the state of a western Joshua tree to aid the conservation and recovery of the western Joshua tree, or entering into memoranda of understanding with California Native American tribes to provide for the taking and possession of western Joshua trees for tribal cultural purposes, or as otherwise required by applicable law.”

Empower Native American Tribes on Their Lands

The Plan clearly demonstrates tribes are not a threat to the Joshua tree and have substantial knowledge and cultural practices dependent on the tree. Their widespread low-level impacts had no identified harms and were speculated to help the tree by multiple authors. The Plan should specify the tribes whose takes are authorized under the Plan and recognized to have no threat to the species. Obviously, CDFW's use of traditional tribal knowledge may require a MOU to protect the tribes' rights and privacy but that's between the tribes and CDFW. Tribes should not need a MOU to gather seeds or take trees based on the data within the Plan. The Commission should ensure in keeping with its JEDI doctrine that the sovereignty of the tribes is empowered based on the data and facts presented.

We also think Native Americans, if willing, could be key partners to a transformational new way for interaction with our natural lands.

Create a Cultivators Program with Safe Harbors

We think the core action to take early, aside from beginning science efforts, is to empower the people who love the Joshua tree, to plant, nurture and provide citizen science on the Joshua tree. The reasons are many, but Commissioner Sklar provided an epiphany when during initial deliberations he said,

“Not only is CESA outdated but it is limited in a fundamental way it does nothing to ensure conservation and restoration although it encourages it.”

Of course, if you make doing anything to help a species hard and expensive people won't be able to help a species, and only necessary impacts will be permitted. Requiring any contact with a WJT specimen to be permitted and the structure and cost of those permits will prevent people from independently doing good. We can now plan a way around that in this Plan. We can manage human behavior as validated by economic philosophy which has been proven many times over. The moment we made doing good for a species cost money, voluntary acts to assist the species disappear as they are economically harmful to people.

This is the predictable harm committed by acts like CESA and the Native Plant Act if they are applied to an abundant and widespread species like the Joshua tree. Which means under climate change impacts CESA and the Native Plant Act are broken. However, CESA is exactly the tool you want when you have a Bakers Longspur with only 9 plants where only the experts should be acting to preserve it. Joshua trees on the other hand should be available in my local nursery and planting one shouldn't degrade my property's value. That alone would preserve the species. We love them, they are iconic.

CDFW included the beginnings of such programs but fails to call for safe harbor for cultivators of trees on their own private property. CalCIMA urges you to empower mankind, the greatest agricultural species to ever evolve, to voluntarily do good for Joshua trees well beyond the adopt-a-tree concept in the rule. We request the Commission create “safe harbors”, so a citizen's property is not harmed by helping the tree voluntarily.

In the Plan you should include a criterion for the department to establish a database for citizen cultivators to plant and care for Joshua trees on their property. Citizen cultivators should be able to report their assessor's parcel number for the purpose of providing safe harbor protection to their property from the cultivation of the tree. The system could include online video training on cultivation, reporting on planting techniques and climate of the grow site. Such “cultivated” trees wouldn't be subject to fees on take as well. Contact information could be used to request data over time. It can become both a garden study and known reservoir of the Joshua trees genetic

diversity outside the regions where cataclysmic climate driven fire is a concern for the primary population and genetic diversity of the Joshua tree. As such it creates resiliency, begins generating growth and propagation data now to the changed climate, and informs future restoration and or migration assistance in future years.

As the Plan is currently drafted it prevents the people who love the tree from voluntarily propagating it on their property without fines and penalties. Please create a simple path to let them plant and care for Joshua trees by removing the economic penalty for doing so. Use the Plan to create a new cultivated Joshua tree program and cultivated trees sheltered from permit obligations.

Eco-Restoration Licensing

We think the State should consider an eco-restoration license similar to the fishing and hunting license programs. A program where there are electronic educational materials on planting various species and restoring various landscapes. You can't do that for the state, but you could for Joshua tree and the Plan area. The Plan could specify the criteria and construct the program with the stakeholders.

Large and significant costs of durably conserving land is the endowment, maintenance and restoration. Enabling structures where people volunteer to participate as recreation and potentially even offer a voluntary certification fee to ensure knowledge of proper propagation techniques could help create a more effective plan that isn't solely funded by local development and the citizens of the Plan area. We can seek to empower beneficial actions and reduce community costs. We could just as easily license and enable restoring our environments as we license hunting and fishing.

Climate Refugia Identification

While we find it unfortunate that accurate plotting of the intended climate refugia maps has not been provided as the work is forthcoming, we support the concept of climate refugia. The primary threat identified is climate change and where the trees can reasonably foreseeably exist matters. Further as climate change is the dominant threat to Joshua tree the commission needs to limit the range of mandatory relocations ordered by CDFW permitting staff to a reasonable range as well as make it clear that if no landowner is willing to accept Joshua trees under the liabilities created to their property by the Plan and statute, then mandatory relocation shall not be required. The legislature was told this program would expedite permitting, not slow it.

We have basic principles we think should apply under the Plan based on what the climate refugia definition represents. Climate refugia is the state's belief of where in the reasonably foreseeable future Joshua trees will be able to survive and live. By extent, everywhere outside that climate refugia is a location where it is reasonably foreseeable to the State experts that the Joshua tree will not be able to survive.

Under no circumstance should mandatory mitigation occur to any location outside the identified climate refugia where California's scientists don't think Joshua trees will

survive in 70 years. Voluntary project actions, yes. Mandatory actions ordered by CDFW, no. Such mandatory actions would add costs for no foreseeable benefit and are therefore harmful to the survival of the species.

Mineral Resources Policy Suggestions

One item CalCIMA has been hoping for is a functional debate of how we can better integrate mineral resources and working land resources into our climate adaptation debate. The natural resource needs of humans must be carefully considered as we begin diverting scarce resources to other important priorities. We are also aware that lovers of natural resources want ways to capture more value from working land development. We think creative solutions can accommodate both objectives.

This plan enables the Commission to consider better integration of resource development for humans and preservation for the Joshua tree, if desired. Indeed, the larger than the state of Massachusetts size of the conservation plan area necessitates such considerations. The Commission only includes discussion of working with agricultural and grazing interests, not water resources, not minerals, not energy resources and working with these other necessary and vital working land users is important. Stakeholder groups to discuss how to develop both the natural resource values and the working land values for humanity should be added to this Plan.

As mentioned previously, the region where the western Joshua tree lives is expected to need over 1.6 billion tons of construction aggregates over the next 50 years²⁴. If we don't produce it there, it will be mined elsewhere and shipped, causing emissions and traffic, worst case, imported through our ports. We prefer to provide construction aggregate materials from local sources, since distance matters. Construction aggregates do not include the critical strategic minerals of the new energy age which California also has important deposits of and the plan has made no consideration for their potential development. Ensuring compatibility with all vital natural resources including those humanity will need should be a key design goal of the Plan for the benefit of all Californians and the Joshua tree.

The tree's long life, extensive range, numbers in the millions, and human commitment to preserve under state law create opportunity and legal certainty to be more creative than we have been historically. Humans are the undisputed keystone agricultural species. If it can be grown humans can grow it and the tribal data on Joshua tree validates this. In addition, we have the time for careful management to reduce costs on humans while preserving and restoring the tree.

²⁴ Map Sheet 52 (Updated 2018), Aggregate Sustainability in California, (Table 1 Data for; Barstow-Victorville P-C region; Palmdale P-C Region, and San Bernardino P-C Region) California Geological Survey, 2018.

The species has an extensive range ensuring a large area of productive habitat during any temporal impacts of necessary human resource development and there are numerous plants to provide seeds for restoration. This isn't a species that can die tomorrow, it will take centuries for the range to change, and we will have active human management due to SB 122 and this Plan. Temporal impacts are very important when there are nine individuals, not when there are between 3 and 9 million and they live hundreds of years. Temporal impacts are largely immaterial if restored with planting after a project or by reclamation such as is required of mines.

Because of that we think, the following activities should be directed for exploration for possible development inclusion in a future amendment.

- Encourage the Department to work with the State Mining and Geology Board (SMGB), the mining community and other stakeholders to develop criteria for Joshua tree reclamation.
 - Enable Conservation Plan managers to engage in Natural Resource Mineral development (Mining) provided they use such a restoration plan design.
 - This would enable conservation areas becoming mine landlords returning revenues from working land development to natural resource preservation and controlling restoration of the land under binding legal obligations.
 - This would enable necessary mineral production for the human species.
 - Ensure Joshua tree restoration via the reclamation criteria.
 - Allow the conservation manager to use their endowment to secure reclamation costs – and credit them from take fees for the to-be-restored trees.
- Add criteria to ensure that priority conservation lands are not structured to overlay state classified or designated mineral resources where avoidable.
- Where not avoidable place policies that encourage conservation land managers to consider the feasibility of making such resources available in their conservation plan.
- Add to the avoidance discussion explicit recognition, that necessary natural resource development such as mineral resource development that can not avoid impacts is expected and acceptable for such vital natural resource development.

Mineral resources are a recognized vital natural resource in California, whose production and conservation are encouraged and considered necessary. As the legislature has stated in public resources code §2711 (f),

“(f) The Legislature further finds that the state’s mineral resources are vital, finite, and important natural resources and the responsible protection and development of these mineral resources is vital to a sustainable California.”

The Plan covers multiple aggregate production consumption zones and has no clear plans to coordinate or manage the potential impacts of the Plan with other vital resources. Not even guidance to agency to work to address such other key issues. The development of minerals will occur, humanity’s needs as a technological species will be met. It’s up to us to find the most efficient ways to do so.

We recognize the concept of mitigation after impact is unthinkable in a traditional endangered species scenario. We believe it is appropriate to consider these conservation areas and under the specific facts of the western Joshua tree. It is well established that the western Joshua tree is an abundant and widespread species. It is also an extremely long-lived species. During the petition process Jeb McKay Bjerke of the CDFW Habitat Planning Branch presented evidence to the Commission that when a similar warming occurred 11,700 years ago, it wasn’t until 3,700 years later that the fossil record had retreated to the Joshua tree’s current range²⁵. We have centuries, if not millennia, to manage the western Joshua tree range and population due to the characteristics of the species. As a result, conservation plans would seem ideally suited to be authorized to mitigate natural resource production by restoration. It can reduce costs, increase solvency and capacity of the conservation plan areas, provide important resources to society and the community, and help conserve western Joshua Trees. In the case of the Joshua tree, we can make this work.

Conclusion

We encourage the Commission to be sure of its data and science before buying Joshua tree conservation land. In the interim, empower the good of people to benefit the species, create more data, and integrate considerations for vital working land resources into the long-term plan. The Plan impacts an area larger than the State of Massachusetts and mistakes could have drastic consequences on people and the region and on the continued political will to combat climate change.

We look forward to ongoing discussions and hope we create a terraforming Plan that accommodates humanity as well as the Joshua tree. As noted in Assemblymember Carrillo’s comments on the bill, this is about striking a “delicate balance” between conservation and economic development.

²⁵ Fish and Game Commission Hearing June 15, 2022, CDFW Presentation to Commission (Bjerke)

Do we have what it takes to integrate humanity's needs, and species needs while terraforming our state due to climate change? We believe so, but it will take working together with trust and respect. And it will require seizing the time and restoration advantages available due to the western Joshua tree's widespread abundance, long life, iconic status and the affirmative commitment of California to prevent the tree from becoming threatened.

Respectfully,



Adam Harper
Senior Director of Policy
CalCIMA

Appendix I

Single Covered Species ITP Permits (WJT) – Issued Under CESA 2022-2024

Background:

As a result of SB 473 (Hertzberg) of 2018 Incidental Take Permits (ITP's) are now published online in the [CDFW Document Library](#) providing transparency for department activities to the public. That law requires, “**Commencing January 1, 2019, the department shall post each new permit issued pursuant to subdivision (b) on its Internet Web site within 15 days of the effective date of the permit.**” There are many CESA permits available as a result.

The Department does not appear to be adhering to this publishing practice for Western Joshua Tree Incidental Take Permits issued under the Western Joshua Tree Conservation Act or has issued no such permits. We therefore have no data from those permits if they exist. None of the WJTITP's our membership has filed under the new law have been processed to completion and none of their annual updates has yet mentioned any such ITP issuances although in 2023 we know 44 were filed from the 2023 Update.

The Department has issued many WJT permits under traditional CESA permitting processes and the data below is from single covered species ITP's to be sure acreages and costs apply only to the western Joshua Tree impacts. Some permits go through amendments and the final amended permit is listed and linked.

The actual costs incurred may be higher or lower than the security cost as only the permit at signature of the permittee is published within 15 days of receipt according to the law. The law did not require filing of the actual cost and final paperwork which demonstrates the permittee meeting the obligations. **As the security amounts represent the Departments estimated cost per acre of durably conserving WJT habitat the data does represent the Departments beliefs in cost per acre to durably conserve WJT habitat and is best suited for our purposes in analyzing the projected direct costs of the WJT conservation plan proposed by the Department.**

Table 1 provides the totals for the single covered species permits issued 2022 through 2024 and calculates the per acre security cost for compensated acres. Table 2 provides the individual permit details and links to the individual permits.

Appendix I

Single Covered Species ITP Permits (WJT) – Issued Under CESA 2022-2024

Table 1: Totals - Single Covered Species Incidental Take Permits for Western Joshua Tree (2022-2024)

Total WJT Permits	Total WJT Acres Impacted	Total WJT Acres Compensated	Ratio	Total Security Cost	Security Cost Per Compensated Acre
21	1187.81	3136.98	2.64 to 1	\$37,414,282.72	\$11,926.87

These numbers do not represent all Western Joshua Tree ITPs amended or processed in the period 2019-2024 as we excluded multiple species ITP's, the format was not conducive for identifying acres of impact to specific species, and amendments to historic ITP's to add western Joshua Tree were also problematic to review including only changed sections. And we do not know what WJTITP's have been issued under the new law as we did not find any of those plans. Number of tree's individuals was also not universally present due to acres being the criteria.

Actual costs for these permits in this table and those not analyzed should be on file with the department and may be higher or lower.

Detail included in Table 2 with links to the permits.

Table 2: Western Joshua Tree Single Species ITP's under CESA (2019-2024)

Permit Link	Permittee	Project	Acres Impact	Acres Comp	Total Security Amount
2081-2021-001-06-A1	CalTrans District 8	SBD-138 CONSTRUCT MEDIAN AND STANDARD SHOULDERS	2.87	4.31	\$71,960.00
2081-2021-010-06	Copart Inc.	COPART ADELANTO 2 PROJECT	48.48	193.92	\$1,834,024.00
2081-2021-012-05-A1	Lockheed Martin Aeronautics	Site Plan Review 20-009 Project Solar	67.5	120	\$1,200,000.00
2081-2021-026-06-A1	Silverwood Development Phase 1, LLC	SILVERWOOD (TAPESTRY PHASE I) PROJECT	578.7	1621.9	\$15,158,774.00
2081-2021-038-06	Covington Development Partners +	HESPERIA COMMERCE CENTER II PROJECT	202.14	585.9	\$6,308,980.00
2081-2021-044-06	LADWP	ADELANTO SWITCHING STATION EXPANSION PROJECT	74.33	148.66	\$1,674,236.00

Appendix I

Single Covered Species ITP Permits (WJT) – Issued Under CESA 2022-2024

Permit Link	Permittee	Project	Acres Impact	Acres Comp	Total Security Amount
2081-2021-054-06	Pacific Communities Builder, Inc.	TENTATIVE TRACT MAP 16751 PROJECT	21.98	54.95	\$680,910.00
2081-2021-055-05	Palmdale Investors, LLC	STRATA WEST PALMDALE APARTMENTS AND STRATA COMMONS	12.76	25.52	\$1,763,000.00
2081-2021-059-06	Pacific Communities Builder, Inc.	Tentative Tract Map 17243 Project	8.34	15.7	\$264,860.00
2081-2021-067-06	Pixior LLC	PIXIOR DISTRIBUTION CENTER	21	42	\$560,755.00
2081-2021-070-05	Maison's Palmdale 170, LP	TENTATIVE TRACT MAP 73068 DEVELOPMENT PROJECT	23.17	56.65	\$2,541,150.00
2081-2021-099-04	Tumbleweed Solar, LLC	Tumbleweed Energy Storage Project	29.31	58.62	\$711,823.72
2081-2022-013-06	Harris Homes, Inc.	HARRIS HOMES PROJECT	28.21	84.63	\$987,055.00
2081-2022-029-06	Pathways to College Charter School	Education - K-8 School Project	10.77	21.54	\$757,564.00
2081-2022-041-06	City of Hesperia	RANCHERO ROAD CORRIDOR WIDENING PROJECT	0.65	1.3	\$112,220.00
2081-2022-043-06	Arman Petrosyan	ASTER 2	1.25	3.125	\$145,315.00
2081-2022-060-06	Southern California Edison (SCE)	SCE WESTERN JOSHUA TREE EMERGENCY VEGETATION MANAGEMENT	0.9	0.9	\$107,980.00
2081-2022-077-06	Prologis SCLC Investments/Lot 44 LLC and +	LOT 44 AND LOT 45 DEVELOPMENT PROJECT	24.45	24.45	\$357,610.00
2081-2022-080-06	Poplar 18 LLC	POPLAR 18 PROJECT	10.9	32.7	\$445,060.00
2081-2022-087-05	Paraclete High School	PARACLETE HIGH SCHOOL PROJECT	7.5	15	\$1,365,446.00
2081-2024-010-06	CRP/NC Hesperia Owner, LLC	MESA LINDA LOGISTICS CENTER	12.6	25.2	\$365,560.00

Appendix II
Conversion of Table 4-10 to Sq. Mi and Acres (CalCIMA 2025)

Table 4-10 Percent of Predicted Climate Refugia Overlapping Conservation Value Categories and Management Units Management Units (Page 4-63)	Ecologically Core	Ecologically Intact	Moderately Degraded	Highly Converted	Not Categ	Total
Mixed Use %	2.20%	16.00%	0.50%	0.10%	9.90%	28.60%
Wilderness %	8.20%	14.60%	0.10%	0.00%	5.30%	28.20%
Little or No Protection %	0.70%	3.90%	5.70%	9.60%	1.80%	21.70%
Defense %	5.20%	8.10%	0.10%	0.00%	0.00%	13.30%
Preservation with Light Recreation / Other%	3.20%	1.90%	0.20%	0.10%	2.90%	8.20%
Tribal Land %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total %	19.50%	44.50%	6.40%	9.60%	19.90%	100.00%

Determination of Climate Refugia Size		
The predicted climate refugia category makes up 23.4 percent of the western Joshua tree Range in California. (Page 4-63)		
For purposes of this Conservation Plan, the range of western Joshua tree is considered to be approximately 13,088 square kilometers (5,053.3 square miles) (Page 8-6)	23.4% of 5053.3 =	1182.4722
Climate Refugia Size (Square Miles) =		1182.472

Table 4-10 Percent of Predicted Climate Refugia Overlapping Conservation Value Categories and Management Units Management Units (Conversion to Square Miles and Acres - CalCIMA)														
	Ecologically Core (Sq. Mi.)	Ecologically Intact (Sq. Mi.)	Moderately Degraded (Sq. Mi.)	Highly Converted (Sq. Mi.)	Not Categ (Sq. Mi.)	Total (Sq. Mi.)	Acres Per Square Mile	Ecologically Core (acre)	Ecologically Intact (acre)	Moderately Degraded (Acre)	Highly Converted (acre)	Not Categ (acre)	Total	
Mixed Use (federal BLM USFWS ETC)	26.01	189.20	5.91	1.18	117.06	338.19		640	16,649.21	121,085.13	3,783.91	756.78	74,921.43	216,439.67
Wilderness Square Miles	96.96	172.64	1.18	0.00	62.67	333.46		640	62,056.13	110,490.18	756.78	-	40,109.45	213,412.55
Little or No Protection (Private)	8.28	46.12	67.40	113.52	21.28	256.60		640	5,297.47	29,514.50	43,136.58	72,651.08	13,622.08	164,221.71
Defense Square Miles	61.49	95.78	1.18	0.00	0.00	157.27		640	39,352.67	61,299.35	756.78	-	-	100,652.02
Preservation with Light Recreation/Other Use	37.84	22.47	2.36	1.18	34.29	96.96		640	24,217.03	14,378.86	1,513.56	756.78	21,946.68	62,056.13
Tribal Land	0.00	0.00	0.00	0.00	0.00	0.00		640	-	-	-	-	-	-
Total Land	230.58	526.20	75.68	113.52	235.31	1,182.47		640	147,572.51	336,768.03	48,434.05	72,651.08	150,599.63	756,782.08

As in Draft Western Joshua Tree Conservation Plan
Converted to Area and calculated by CalCIMA 2025

Appendix II
Conversion of Table 4-10 to Sq. Mi and Acres (CalCIMA 2025)

CalCIMA Table II – Calculation of Effectiveness Criteria 2 Acreage from Table 4-10 Conversion Data

Predicted Climate Refugia Overlapping (Derived by converting Table 4-10 to Area from Percent)	Sq. Mi	Acres
Ecologically Core+ Ecologically Intact + Moderately Degraded =	832.46	532,774.58
Effectiveness Criteria 2 (Protect 90% Above by 2033) Page 5-45	749.21	479,497.13
Wilderness + Preservation with Light Recreation/ Other Uses + Tribal (Sq. Mi)	430.42	275,468.68
Mental Comparisons		
City of Los Angeles	468.7	299,968.00
City of Sacramento	100.1	64,064.00
City of San Diego	325	208,000.00

CalCIMA Table I: Totals - Single Covered Species Incidental Take Permits for Western Joshua Tree (2019-2024) (Appendix I - for Detail)

Total WJT Permits	Total WJT Acres Impacted	Total WJT Acres Compensated	Ratio	Total Security Cost	Security Cost Per Compensated Acre
21	1187.81	3136.98	2.64 to 1	\$37,414,282.72	\$11,926.87

Estimated Effectiveness Criteria 2 Cost if All Land Purchased and Endowed: 479,497.13 * \$11,926.87 = **\$5,718,899,885.84 Billion**

As in Draft Western Joshua Tree Conservation Plan
Converted to Area and calculated by CalCIMA 2025

Appendix III
Conversion of Table 4-9 to Sq. Mi and Acres with Analysis (CalCIMA)

Table 4-9 Percent of Western Joshua Tree Range in California within Conservation Value Categories by Management Unit Management Unit															
	Ecologically Core	Ecologically Intact	Moderately Degraded	Highly Converted	Not Categ	Total	Within Western Joshua Tree Range								
							Western Joshua Tree Range Square Miles (Page 8-6) =						Sq.Mi.	Acres	
							Ecologically Core+ Ecologically Intact + Moderately Degraded (Sq. Mi.)						3,779.87	2,419,115.78	
							Wilderness + Preservation with Light Recreation/ Other Uses + Tribal (Sq. Mi)						1,147.10	734,143.42	
							Mental Comparisons								
							City of Los Angeles						468.70	299,968.00	
							City of Sacramento						100.10	64,064.00	
City of San Diego						325.00	208,000.00								
Little or No Protection	3.00%	6.40%	14.50%	9.10%	2.60%	35.50%									
Mixed Use	4.40%	10.10%	1.90%	0.10%	7.70%	24.10%									
Defense	10.40%	5.60%	1.30%	0.30%	0.00%	17.70%									
Wilderness	3.70%	6.30%	0.10%	0.00%	4.20%	14.20%									
Preservation with Light Recreation/Other Use	3.40%	3.00%	0.70%	0.10%	1.20%	8.40%									
Tribal Land	0.00%	0.10%	0.00%	0.00%	0.10%	0.10%									
Total	24.90%	31.50%	18.40%	9.60%	15.60%	99.99%									
Western Joshua Tree Range															
	Ecologically Core (Sq. Mi.)	Ecologically Intact (Sq. Mi.)	Moderately Degraded (Sq. Mi.)	Highly Converted (Sq. Mi.)	Not Categ (Sq. Mi.)	Total (Sq. Mi.)	Acres per Sq.Mi.	Ecologically Core (acre)	Ecologically Intact (acre)	Moderately Degraded (Acre)	Highly Converted (acre)	Not Categ (acre)	Total		
Little or No Protection (Private)	151.60	323.41	732.73	459.85	131.39	1793.92	640	97,023.36	206,983.17	468,946.24	294,304.19	84,086.91	1,148,109.76		
Mixed Use (Federal)	222.35	510.38	96.01	5.05	389.10	1217.85	640	142,300.93	326,645.31	61,448.13	3,234.11	249,026.62	779,420.99		
Defense	525.54	282.98	65.69	15.16	0.00	894.43	640	336,347.65	181,110.27	42,043.46	9,702.34	-	572,437.82		
Wilderness	186.97	318.36	5.05	0.00	212.24	717.57	640	119,662.14	203,749.06	3,234.11	-	135,832.70	459,243.90		
Preservation with Light Recreation/Other Use	171.81	151.60	35.37	5.05	60.64	424.48	640	109,959.81	97,023.36	22,638.78	3,234.11	38,809.34	271,665.41		
Tribal Land	0.00	5.05	0.00	0.00	5.05	5.05	640	-	3,234.11	-	-	3,234.11	3,234.11		
Total	1258.27	1591.79	929.81	485.12	788.31	5052.85	640	805,293.89	1,018,745.28	595,076.61	310,474.75	504,521.47	3,233,820.93		

As in Draft Western Joshua Tree Conservation Plan
Converted to Area by CalCIMA 2025

Appendix IV

CDFW Duties and Roles

Draft WJT Conservation Plan

CDFW Duty	Page
the conservation management actions will be implemented through continued collaboration between CDFW and local, state, and federal agencies by establishing interagency written agreements or written memoranda of understanding and by developing co-management written agreements and written memoranda of understanding with tribal collaborators.	1-17
CDFW will monitor conservation management actions that have been implemented, including those in progress since the species' candidacy for listing under CESA, and others that have been developed specifically in response to WJTCA and the western Joshua tree population condition.	1-17
CDFW will gather and evaluate new knowledge from the scientific community, agencies, and Tribes needed to achieve or improve effectiveness of management actions. As	1-17
CDFW will report on the performance of the permitting and mitigation program and provide an assessment of the conservation status of western Joshua tree in annual reporting, described in Section 6.8.1,	1-17
CDFW will also recommend Conservation Plan amendments to the Commission every 2 years at a public meeting, as necessary	1-17
CDFW will have the opportunity to collaborate with CSP on management actions to be implemented at Hungry Valley and Onyx Ranch SVRAs in support of western Joshua tree conservation.	2-49
Identification of high priority areas for protection to further the conservation of western Joshua tree will be completed as needed by CDFW and partners and will be supported by information produced by the research and tribal communities. While it would be ideal to complete steps 1 through 4 before prioritizing areas for protection, CDFW must begin work to conserve western Joshua tree immediately and must therefore begin initial prioritization of areas for protection based on the best, currently available information.	5-5
Protect priority areas while accommodating compatible existing and emerging land uses. Informed by the results of step 5, high priority areas should be protected while accommodating existing and emerging land uses that are compatible with the overall western Joshua tree conservation strategy (Henson et al. 2018).	5-6
CDFW will use the Conservation Fund to conserve priority lands.	5-6

Appendix IV

CDFW Duties and Roles

Draft WJT Conservation Plan

With finite resources available for conservation efforts, CDFW will define criteria for prioritizing lands that are most suited to the persistence of western Joshua tree. The criteria will help guide agencies, NGOs, Tribes, and others in protecting conservation land.	5-18
On a local scale, CDFW will identify priority conservation lands based on the best available site data relevant to western Joshua tree's ecological needs for long-term viability. Available information will be analyzed initially, and additional information will be collected to properly assess the relative conservation value of the evaluated lands.	5-20
CDFW will work with land managers to develop long-term monitoring and management plans or conservation easement stewardship agreements for conserved lands.	5-23
CDFW will seek to establish written MOUs or other written agreements with state and federal agencies for long-term monitoring and management to benefit western Joshua tree on priority conservation lands. Approximately 28 percent of these lands are within predicted climate refugia, which increases the importance of managing these lands to conserve western Joshua tree.	5-23
Develop written MOUs or other written collaboration agreements between CDFW, California Native American tribes, and relevant entities that would embody co-management principles	5-35
At minimum, one written MOU or other written collaboration agreement incorporating co-management principles has been established between CDFW or other land managers and California Native American tribes by 2028.	5-46
In addition, CDFW will continue to consult with Tribes and federal, state, and local agencies to plan and implement activities consistent with western Joshua tree conservation; identify opportunities to conserve western Joshua tree on CDFW-owned lands; integrate protective measures for western Joshua tree into CDFW guidelines and regulations for public use and into land management plans; implement restoration or enhancement of western Joshua tree habitat; receive relocated western Joshua trees; and manage wildland fire risk.	6-2

Appendix IV

CDFW Duties and Roles

Draft WJT Conservation Plan

CDFW will continue to collaborate with interested federal agencies to coordinate management actions and share conservation information. The extent and type of federal lands in the Conservation Plan's geographic focus area are described in more detail in Section 2.3.3, "Federal Land Management." A summary of responses from potential federal agency collaborators to outreach meetings and the questionnaire is provided below:	6-4
CDFW will prioritize the execution of a written MOU or other agreement with USFWS to document shared goals and aspirations for conservation of western Joshua tree.	6-4
CDFW will also seek feedback on aspects of the permitting process and written delegation agreements, ways to foster public awareness and engagement in western Joshua tree conservation in their communities, and creative solutions for specific projects to promote consistency with the conservation of western Joshua tree and WJTCA. In	6-7
CDFW will oversee all expenditures from the Conservation Fund and ensure funding is only allocated to eligible activities and entities. CDFW will prioritize expenditures and mitigation activities on properties with the highest conservation value to western Joshua tree, determined using a model-based land prioritization framework and mapping tool developed primarily by CDFW and NFWF.	6-16
Federal agencies with existing management plans or practices related to western Joshua tree conservation may agree to entering into a written MOU or other agreement with CDFW to implement management actions in the Conservation Plan.	5-6
Use Conservation Fund to Preserve priority Lands	
CDFW will define criteria for prioritizing lands that are most suited to the persistence of western Joshua tree.	5-18
CDFW will continue to review the science including TEK on western Joshua tree during implementation of the Conservation Plan and update impact avoidance buffers as appropriate.	5-12
As additional information generated from steps 1 through 4 becomes available, CDFW will incorporate it into decision making and future updates of the Conservation Plan.	5-6
On a local scale, CDFW will identify priority conservation lands based on the best available site data relevant to western Joshua tree's ecological needs for long-term viability. Available information will be analyzed initially, and additional information will be collected to properly assess the relative conservation value of the evaluated lands.	5-20

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CDFW Duties and Roles

Draft WJT Conservation Plan

CDFW will work with land managers to develop long-term monitoring and management plans or conservation easement stewardship agreements for conserved lands.	5-23
CDFW will seek to establish written MOUs or other written agreements with state and federal agencies for long-term monitoring and management to benefit western Joshua tree on priority conservation lands.	5-23
In collaboration with other agencies and institutions, CDFW will develop and adopt standards and protocols for western Joshua tree seed collection strategies to maximize genetic seed diversity.	5-29
Tribes and CDFW will collaborate to incorporate cultural burning where it would be an effective tool (outlined under Management Action LC&M 3) for reduction of wildland fire risk or enhancement of western Joshua tree population conditions on tribal lands.	5-35
CDFW will coordinate with California Department of Forestry and Fire Protection (CAL FIRE) and others on developing additional fuel treatment methods for western Joshua tree habitat, including manual and mechanical treatment methods.	5-39
CDFW will work with Tribes to support tribal priorities for education and outreach to their communities. The following are examples of undertakings or materials that may be developed to support tribal-led and tribal-designed efforts:	5-41
§ ethnobotanical studies, § lesson plans and curricula for various age groups, § professional certification programs (e.g., for tribal cultural monitors, TEK practitioners, fire and restoration specialists), § printed materials designed to strengthen cultural knowledge, and § workshops.	5-41
CDFW will work with partners to develop accessible informational items for distribution to the public in multiple languages. The informational items may be handouts, brochures, presentations, digital materials, surveys, interactive web pages, or other outreach tools.	5-41
CDFW will support and encourage volunteer opportunities by promoting them on their website, social media, and printed media (e.g., handouts, newsletters). Special focus will be given to providing opportunities for underserved	5-43
CDFW will coordinate with partner organizations to encourage development of newsletters and conduct western Joshua tree–focused social media campaigns.	5-43

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CDFW Duties and Roles

Draft WJT Conservation Plan

CDFW will coordinate with agricultural organizations to encourage development of guidance regarding grazing best practices in western Joshua tree habitat and make it available to ranchers, rangeland managers, and others in the grazing community.	5-44
CDFW will coordinate with local governments to encourage the development of educational materials for private residential and other property owners with western Joshua trees to participate in urban conservation and recovery efforts.	5-44
CDFW will reach out to partners to encourage organizations to develop opportunities for an adopt-a-Joshua tree program .	5-43
CDFW will seek to protect an additional 3 to 5 percent of occupied western Joshua tree range every 2 years until the effectiveness criteria related to land protection for conservation of western Joshua tree in California are achieved.	5-46
CDFW will use total cost accounting when determining the adequacy of the fees for ensuring conservation of the species.	6-16
If CDFW determines land is eligible for acquisition or protection, CDFW will work with the landowner to prepare a lands package consisting of real estate documents and land surveyor products (e.g., boundary, improvements or encumbrances maps, deed, preliminary title report).	6-17
For lands requiring conservation easement acquisitions, CDFW will evaluate and approve an easement holder (grantee), land manager, and endowment holder to ensure compliance with Civil Code sections 815–816 and Government Code sections 65965–65968.	6-17
In the final stage of the land acquisition process, the real estate transaction will be completed (e.g., coordinate escrow, title, closing). The transaction will be funded with monies from the Conservation Fund, as directed by CDFW.	6-17
If the conservation easement or land acquisition includes restoration, enhancement, translocation, interim management, long-term land management, or monitoring, CDFW must review and approve a plan outlining these activities to ensure they are completed.	6-17
CDFW will review potential enhancement and restoration projects for those lands, in accordance with the process shown in the CDFW Western Joshua Tree Conservation Act Enhancement and Restoration Projects Assessment (see Appendix H, “Enhancement and Restoration Prioritization Assessment”)	6-17 to 6-18

Appendix IV

CDFW Duties and Roles

Draft WJT Conservation Plan

CDFW is required by WJTCA (Fish & G. Code, § 1927.7, subd. (a)) to provide annual reports to the Commission and the Legislature. These annual reports will document metrics related to the performance of the permitting and mitigation framework included in WJTCA and described above in Section 6.5, as well as metrics related to the conservation status of western Joshua tree, including the following information:	6-18
CDFW will prepare an updated status review report for western Joshua tree and submit it to the Commission no later than January 1, 2033. The Commission will then determine whether western Joshua tree should be listed as endangered or threatened pursuant to CESA.	6-19
In accordance with WJTCA, starting in 2026 and at least every 2 years thereafter, the Commission will review the effectiveness of the Conservation Plan in conserving the species (Fish & G. Code, § 1927.8). CDFW will make recommendations to the Commission concurrent with the Commission's review of the status of western Joshua tree. As part of this review, CDFW will recommend proposed amendments to the Conservation Plan, if needed. Any Conservation Plan amendments must be reviewed and adopted by the Commission.	6-20
CDFW will also continue to seek input from the general public regarding implementation of the Conservation Plan and its effectiveness in conserving western Joshua tree.	6-20

Impact of SB 122 Western Joshua Tree Provisions on Aggregate Mining Operations and the Economy

October 2023

Prepared for:

**California Construction and Industrial Materials Association
(CalCIMA)**

Prepared by:

**Brad Williams, Chief Economist
Michael C. Genest, Founder and Chairman
Capitol Matrix Consulting**

About the Authors

The authors are partners with Capitol Matrix Consulting (CMC), a firm that provides consulting services on a wide range of economic, taxation, and state-and-local government budget issues. Together, they have over 80 years of combined experience in economic and public policy analysis.

Brad Williams joined Capitol Matrix Consulting in 2011, after having served in various positions in state government for 33 years. Mr. Williams served for over a decade as the chief economist for the Legislative Analyst's Office, where he was considered one of the state's top experts on the tax system, the California economy, and government revenues. He was recognized by the Wall Street Journal as the most accurate forecaster of the California economy in the 1990s, and has authored numerous studies related to taxation and the economic impacts of policy proposals. Immediately prior to joining CMC, Mr. Williams served as a consultant to the Assembly Appropriations Committee, where he advised leadership of the majority party on proposed legislation relating to taxation, local government, labor, and banking.

Mike Genest founded Capitol Matrix Consulting (originally Genest Consulting) in 2010 after concluding a 32-year career in state government, which culminated as Director of the California Department of Finance (DOF) under Governor Arnold Schwarzenegger. Prior to his four-year stint as the Governor's chief fiscal policy advisor, Mr. Genest held top analytical and leadership positions in both the executive and legislative branches of government. These included Undersecretary of the Health and Human Services Agency, Staff Director of the Senate Republican Fiscal Office, Chief of Administration of the California Department of Corrections and Rehabilitation, and Director of the Social Services section of California's Legislative Analyst's Office.

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Executive Summary

In June 2023, the Governor signed SB 122 (Chapter 51 of the Statutes of 2023), which was a “trailer bill” to the 2023 Budget Act. The bill imposes several conditions for any “taking” of a Western Joshua Tree (WJT) including the requirement that the permittee (1) minimize the impacts of takings as much as practicable; (2) mitigate the takings of the WJT and insure that adequate funding is available to do so, or pay per-tree in-lieu fees; and (3) relocate trees as directed by the California Department of Fish and Wildlife using guidelines yet to be adopted. In view of the potentially major implications of SB 122 for aggregate mining operations in Southern California, The California Construction and Industrial Materials Association (CalCIMA) engaged our firm to provide estimates of financial and economic impacts of SB 122 on the aggregates industry. Our key findings are as follows:

- ▶ Aggregates are basic construction materials that go into residential and commercial building construction, highways, roads and public transit, and other public infrastructure ranging from schools, courts, public administration, parks and natural resources. Without an adequate supply of aggregates, the housing crisis and homelessness will worsen, and traffic congestion will increase.
- ▶ Local production is important. This is because transportation costs are extraordinarily high given the weight and bulk of aggregates, making imports from other regions expensive.
- ▶ Mining operations located in the WJT territories in the high deserts of Los Angeles, San Bernardino, Riverside, Kern, Inyo and Mono Counties account for about 13 percent of total permitted acreage in California, and about 32 percent of permitted acreage in Southern California.
- ▶ All regions of California face long term shortfalls in supplies of aggregates from permitted lands. For the Southern California region served by mines in WJT territories, permitted aggregate reserves cover about three quarters of total projected demand over the next 50 years. Thus, the region needs more permitted lands and aggregate mining supplies.
- ▶ SB 122 will significantly increase costs to mining operations in WJT territories, discouraging production. Companies report that additional costs related to the in-lieu fee and tree-relocation provisions of the bill could range into the tens of millions of dollars for larger operations.
- ▶ Companies also reported that impacts on their specific mining projects would be uneven, depending on WJT density, reserve depths and other factors.
- ▶ Estimates we prepared indicate that cost increases associated with in-lieu fees and tree location could be as high as \$17 million for a single 200 acre project located in an area with high WJT density. Based on the methodology described in the main body of this report, we estimate that prices would need to rise by between \$5.50 and \$7.00 per ton (increase of between 37 percent and 47 percent relative to current prices excluding delivery costs) to offset these added expenses.
- ▶ These price increases would have significant impacts on residential and commercial construction, raising building costs for a typical home by between \$2,200 and \$2,800, and costs for a typical school or hospital by between \$85,000 and \$105,000.
- ▶ They would have major impacts on freeway construction projects, where aggregates account for between 8 percent and 10 percent of total construction costs. Price increase of \$5.50 to \$7.00 per ton would raise construction costs for an 8-lane freeway by between \$1.7 and \$2.1 million per mile.
- ▶ Overall, we estimate that annual costs to state and local governments for infrastructure spending would rise by between \$130 million and \$170 million annually, with about one-half attributable to the state of California and the other half attributable to local governments located in the Southern California region.

California's Aggregate Mining Industry

Aggregate mining is an essential industry. Sand, gravel and rocks (for convenience, we refer to all these products as aggregate throughout this report) are basic materials used throughout much of the construction industry¹:

- ▶ 34 percent of all aggregate is used in residential construction,
- ▶ 17 percent goes to commercial construction,
- ▶ 26 percent goes to build and maintain highways, roads and public transit, and;
- ▶ 17 percent goes to other public infrastructure.

Without these materials construction in the state would come to a halt, homelessness would increase, roads and other infrastructure would deteriorate.

Anyone reading this analysis is likely sitting in a chair that rests on a concrete floor (or on a wooden floor resting on concrete footings), in a building which would not stand without concrete; they might well have driven to work on a road that was built and maintained with asphalt (which is 92 percent aggregate) or concrete (75 percent aggregate) or ridden to work in a light-rail system built mostly of concrete.

“We are the least known industry with whom you have an intimate relation,” operator of an aggregate mine in California’s WJT area.

Aggregate mines are subject to a variety of laws and regulations and local permitting requirements. (These are described in detail in the section below on SB 122.)

Aggregate mines need to be sited near local demand

According to the California Department of Conservation²:

“Aggregate is a low-unit-value, high-bulk-weight commodity, and it must be obtained from nearby sources to minimize both the dollar cost to the aggregate consumer and other environmental and economic costs associated with transportation. If nearby sources do not exist, then transportation costs may significantly increase the cost of the aggregate by the time it reaches the consumer.”

“Increased aggregate haul distances not only increase the cost of aggregate to the consumer, but also increase environmental and societal impacts such as increased fuel consumption, carbon dioxide (CO₂) emissions, air pollution, traffic congestion, and road maintenance.”

In order to minimize environmental disruption and the costs of building new homes and other essential buildings and maintaining, replacing and expanding roads and other infrastructure, the state needs to ensure aggregate continues to be mined as close as possible to each area of the state where it is needed. The importation of aggregate from abroad or from one region of the state to another region miles away, will increase construction costs as well as CO₂ and other emissions.

¹ California Department of Transportation Memorandum to District Directors, “2018 Aggregate Resource Policy Statement and Tools”, March 1, 2018.

² Map Sheet 52 (Updated 2018) Aggregate Sustainability In California, 2018; California Geological Survey, Department of Conservation.

In fact, the Legislature itself has recognized the vital role that localized mining of aggregate plays in the state's economy:

"The Legislature further finds that the production and development of local mineral resources that help maintain a strong economy and that are necessary to build the state's infrastructure are vital to reducing transportation emissions that result from the distribution of hundreds of millions of tons of construction aggregates that are used annually in building and maintaining the state³."

California needs to open new aggregate mines to meet projected demand

The Department of Conservation estimates that California will need 11 billion tons of aggregate over the 50-year period 2018-2068 (see Figure 1) and that the amount that is available in mines that already have permits to operate is only 69 percent of that need.⁴ On the other hand, the Department also estimates that the state has 74 billion tons lying underground in acreage for which there are currently no permits granted to extract it.⁵ Clearly, the state needs to expand the amount of land on which aggregate mining is permitted and to do so in all areas nearby local demand where existing permitted mining is inadequate to meet long-term demand. The only alternative sources for end-users is more imports into local regions via additional trucking and through California's ports, both of which are expensive alternatives.⁶

Figure 1
California Aggregate Demand/Supply
Statewide and Area Containing Western Joshua Trees

Aggregate Study Area	50-Year Demand (million tons)	Permitted Aggregate Reserves (million tons)	Permitted Aggregate Reserves Compared to 50-Year Demand (percent)	Projected Years Remaining
Statewide	11,045	7,628	69%	10 to >50
WJT Area	3,587	2,711	76%	<10-40
WJT Percent	32%	36%		

SB 122's Western Joshua Tree Provisions

Prior Law. The Western Joshua Tree (WJT) is a common and widespread species naturally occurring in the desert and scrub brush regions of Southern California and the southernmost portions of Northern California. There are millions of individual WJTs primarily located in 6 counties that also include aggregate mining operations: Kern, Inyo, Los Angeles, Riverside, Mono and San Bernardino.

Under the Surface Mining and Reclamation Act (SMARA) California mining operators have an obligation to reclaim mined lands. The reclamation standards are set during a project's approval (*e.g.*, approval of a reclamation plan), according to various statutory and regulatory standards, which generally

³ Public Resources Code Section 2711 (d)

⁴Map Sheet 52 (Updated 2018) Aggregate Sustainability In California ,2018; California Geological Survey, Department of Conservation.

⁵ Ibid.

⁶ Currently, some aggregates supplies are shipped to Southern California from mines in Quebec Canada.

include revegetation on the mined lands. For many mining operations within the area covered by the WJT, these reclamation standards were established, in part, by requirements in the Native Plant Protection Act and Desert Native Plant Act, which set removal and revegetation requirements for, among other plants, the WJT. The costs for complying with these respective provisions are site- and project-dependent, based on the original approval conditions, variations in annual costs (*e.g.*, nursery maintenance, if applicable), and the required success criteria. Mining operations are also subject to the same general laws and regulations — for example, the California Environmental Quality Act — as other businesses.

Additionally, the California Endangered Species Act (CESA), requires the Fish and Game Commission to establish a list of endangered species and to add or remove species from the list if it finds, upon the receipt of sufficient scientific information that the action is warranted. The Department of Fish and Wildlife has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. CESA prohibits the “take”⁷ of listed endangered, threatened and even “candidate species” (“Listed Species”), except under certain conditions. The WJT was listed as a candidate species under CESA in September of 2020, based on a petition for listing filed by the Center for Biological Diversity on October 21, 2019. Under CESA, the Department of Fish and Wildlife may authorize, by permit, the take of a listed species if certain conditions are met. CESA applies to any actual take of a listed species, and serves to protect and mitigate the impacts from any authorized take.

Accordingly, CESA listings have the potential to alter, conflict with, and/or increase SMARA reclamation and revegetation obligations. It is noteworthy that this applies even to “candidate species” — that is, any species that is under consideration for listing, which currently includes the WJT. For example, SMARA revegetation obligations may require the recovery of WJT seeds for later planting.

SB 122. SB 122 (Chapter 51 of the Statutes of 2023) is a “trailer bill” to the 2023 Budget Act and as such is an omnibus bill with many statutory provisions affecting state laws regarding the implementation and management of various programs relating to Natural Resources. Among these provisions are several that relate to authorizing the take of any WJT. These provisions are entitled the Western Joshua Tree Conservation Act (WJTCA). Specifically, the WJTCA imposes the following rules and conditions:

- ▶ **Removes the WJT from regulation under prior statutory regimes**, including the Native Plant Protection Act, the Desert Native Plant Act and the CESA, thus superseding the permitting requirements of these statutes.
- ▶ **Mandated mitigation.** Prohibits the take of western Joshua tree within the State of California unless the person has a take permit granted under either CESA (while the WJT is a candidate species) or the SB 22 WJTCA, *whether or not the Commission ultimately lists the WJT as an endangered species.*
- ▶ **Provides alternative take authorization to CESA during WJT candidacy:** The WJTCA provides an *alternative* method to authorize a take during any time period where the WJT is either (1) a candidate species under CESA; or (2) not listed under CESA. During any period the WJT is a candidate species, take authorization may also be obtained by obtaining a CESA incidental take permit.
- ▶ **Gives the Department of Fish and Wildlife authority to permit takings of the WJT.** Specifically, SB122 sets the following conditions on the granting of a takings authorization by the Department of Fish and Wildlife:

⁷ The term “take” is a term of art used throughout the CESA. It encompasses not just the removal of a species, but any action that affects the potential viability of any covered species, including encroachment and trimming as well as actual removal or relocation.

- The permittee must give the DFW a detailed census of the WJT on the acreage for which a permit is requested;
 - The permittee must minimize the impacts of takings as much as practicable;
 - The permittee must mitigate the takings of the WJT and ensure that adequate funding is available to do so.
- **In-lieu Fees.** SB122 allows permittees to pay a per-tree fee (“in-lieu fee”) based on the survey instead of undertaking the mitigation and minimization measures mentioned above. The fee amounts are shown in Figure 1. The proceeds of these fees will go into a fund to be used by the Department of Fish and Wildlife solely for the purposes of acquiring, conserving, and managing WJT conservation lands and completing other activities to conserve the WJT.
- **Relocation.** The permittee must relocate trees as directed by the Department of Fish and Wildlife using guidelines yet to be adopted. This requirement applies whether or not the permittee pays the in-lieu fees.

Figure 2
In-lieu Fees Authorized by SB 122

Height of WJT	Fee range (depending on location)
Less than 1 meter	\$150 to \$340 per tree
Between 1 and 5 meters	\$200 to \$500 per tree
Five meters or greater	\$1,000 to \$2,500 per tree

Essentially, SB 122 adds a new and additional permitting cost to both existing and new operations that supersede the site-specific conditions of approval and other requirements generally embodied in each mining operation's individual permit approval and/or reclamation and revegetation requirements.

Because SB 122 usurps the CESA process relating to determination of the WJT as an endangered species, this report attributes all *new* mitigation costs for each site to the bill. As noted above, the California Fish and Game Commission has designated the WJT as a candidate species under CESA, mandating that mine operators obtain "take authorization" for any to-be-affected WJT, regardless of whether such taking was already authorized and accounted for during the mine's approval process. Without the SB 122 mandate it could be asserted that mine operators could have faced even more dramatic cost increases in the permitting process, since the takings conditions under CESA are quite stringent and often impossible to satisfy economically. In this regard, SB 122 could even be theoretically credited for reducing permitting costs, since it would at least provide a path forward for mining operations.

However, this line of reasoning does not take into account the fact that the ultimate listing of the WJT as an endangered species was highly uncertain, arguably even unlikely. The Department of Fish and Wildlife recommended against such a listing in its report issued in March 2022 and the Fish and Wildlife Commission deadlocked in its initial vote in June 2022. After all, in any objective sense the WJT is clearly *not* an endangered species since there are millions of the trees thriving in the state. SB 122 prejudged the scientific merits of naming the species as endangered and instead imposed "take" requirements on a permanent basis, even if the Commission ultimately determines listing is not warranted. Thus, SB 122 imposes mandatory permanent protections, even if the WJT does not actually warrant listing under CESA, significantly increasing costs for existing and future mine operator entitlements.

In addition, other provisions of SB 122 suggest that the in-lieu fees might not actually reduce permitting costs and difficulty. Specifically, new law allows (but does not require) the DFW to:

“include permit conditions that require the permittee to relocate one or more of the (WJT). If relocation is required, the permittee shall implement measures to assist the survival of relocated trees, and to comply with any other reasonable measures required by the department to facilitate the successful relocation and survival of the western Joshua trees...”

It is not clear whether and to what extent relocation will be required as a condition of the approval for new mining permits. Until this is clarified, any estimate of the costs to mine operators of SB 122 will necessarily be somewhat speculative. At a minimum, however, mine operators will be required to obtain SB 122 take authorization – through either mitigation compliance or fee payment – for all WJT’s that must be removed, damaged or interfered with on a mine’s property.

For all these reasons, this analysis assumes that SB 122 imposes all new costs, relative to prior law.

Economic Impacts of SB 122

SB 122 will have substantial impacts on the aggregate industry operating in WJT territory, and by extension, final users of aggregate products in the California economy. There are 59 mining operations in areas populated by WJTs in California and thus directly affected by SB 122. These operations have about 22,000 acres operating under current (i.e., pre-SB 122) permits, which represents about 13 percent of the statewide total, and about 30 percent of the total permitted acreage for the 10 Southern California counties served by the mines in the WJT areas.⁸

In this section, we discuss the impact of SB 122 on costs and return-on-investment for mining operations within WJT territories, and how these impacts will affect aggregate supplies and prices in Southern California markets.

Survey of Mining Operators

As a key part of our analysis, we surveyed the 6 companies that have annual production within WJT territories. These companies’ annual production of aggregate range from less than 300,000 tons to over 10 million. Key findings of this survey include:

Main markets. Most of the product supplied by these companies is sent to users in Los Angeles, Riverside, and San Bernardino Counties, with lesser amounts shipped to Orange, San Diego, Inyo, Imperial, Kern, Mono and Ventura counties. About one-half of their products are used for public infrastructure, with the other half used primarily for residential and commercial construction.

Costs of SB 122. The companies reported cost increases resulting from SB 122 ranging from under one-half million to the low tens of millions of dollars. Variation in costs reported by companies primarily reflected differences in the size of current active operations, the planned amount of future development, and the density of WJTs in their project areas. These estimates were based primarily on in-lieu fee payments and costs to relocate trees. Some of the companies reported that actual costs could be much

⁸ As noted above, there are 6 counties in the WJT area that have aggregate mines. According to the operators of these mines, they sell their products to customers in Ventura, Orange, Imperial, and San Diego counties, in addition to customers located in their own counties.

higher depending on how the Department of Fish and Wildlife implements SB 122⁹, although our estimates below do *not* include such costs.

Variability of impacts. Representatives we spoke to emphasized that SB 122 will have uneven impacts on specific projects within their permitted lands. While some current and planned projects have relatively few WJTs, others are in areas with dense WJT populations. A challenge presented by SB 122 is that project development on permitted lands takes place in carefully planned phases that have gone through extensive planning and regulatory approvals. Altering development patterns to avoid high cost areas would be disruptive and impractical for mining companies.

Bottom line from survey. SB 122 will materially increase the cost of mining operations, especially in areas where WJT populations are dense. If directly passed along to consumers, these cost increases will materially raise prices that governments and private sector construction contractors will pay for aggregates. If mining operations are not able to pass along these increases, the main near-term impact will likely be less investment and less mining in the WJT areas, resulting in fewer supplies of aggregate being available in Southern California markets. Because of the extremely high transportation costs associated shipping of aggregates from one region to another, fewer supplies from local sources will translate into higher prices paid by consumers in these markets. These price increases will lead to higher costs of residential housing, commercial buildings, roads, highways, schools and other public infrastructure.

Range of Impacts on Specific Mining Projects

In this section we calculate the range of costs imposed by SB 122 on a typical project (or project phase) located in WJT territory. We then put these costs into context by calculating their potential impact on the project's return on a project investment.

Mining Project Cost Impacts

Figure 3 provides our estimate of the additional costs authorized by SB 122 for in-lieu fees and tree relocation requirements, as well as other mitigation requirements that could be imposed as a condition for a WJT takings. These costs are based on a mid-sized, 200-acre project located in WJT territories with varying tree densities.

Costs for in-lieu fees and tree census. As indicated in Figure 3, total costs could range from \$600,000 for a project located in the lower-fee zone and on land having an average density of 7 WJTs per acre. However, the fee would be much higher - \$5 million - if the project is located in the higher-fee zone and has a density of 30 trees or more per acre. The range of costs could be higher if the Department of Fish and Wildlife adopts counting methodologies that results in a higher count of trees. Section 1927.3(b) of the Public Resources Code requires that “each western Joshua tree stem or trunk arising from the ground shall be considered an individual tree, regardless of its proximity to any other western Joshua tree stem or trunk.” The concern expressed by company representatives is that this language gives the Department discretion to adopt aggressive counting practices, leading to multiple fees for what is in fact a single tree.

Tree relocation. As noted earlier, SB 122 authorizes the Department of Fish and Wildlife to require tree relocation as a condition of receiving a takings permit, even if the permittee has paid the in-lieu fee. The costs of complying with tree relocation provisions of SB 122 depends on (1) WJT density in the project

⁹ Specifically, these mine operators believe, based on their past experience with the Department, that it might attempt to interpret the bill to allow it to require even those operators who pay the in-lieu fee to also purchase and maintain conservation easements. However, we do not read SB122 to allow the Department to require mine operators who have paid the in-lieu fees to also purchase conservation easements. The in-lieu fee, after all, goes to a fund that would be used by the Department for purchasing and maintaining such easements. In addition, the specific language of the bill waives such expensive mitigations for those who pay the in-lieu fee. Thus, we do not include any such costs in our estimates below.

areas, (2) the Department's decisions regarding whether some or all of the trees need to be moved, and (3) additional measures that the permittee would be required to take to ensure the survival of relocated trees.¹⁰

Figure 3
Additional Mining Project Costs From SB 122 - 200 Acre Project

Provision	Cost Range	Factors Affecting Costs
In lieu fees + tree census	\$0.6 million to \$5.0 million	Location in low fee or high fee zone, average number of trees per acre, mix of trees by height
Tree relocation	\$1.1 million to \$12 million	Number of trees, cost per tree, and amount of follow-up care.

As indicated in Figure 3, we estimate that relocation costs could range from \$1.1 million to \$12.0 million for a typical 200 acre project. The low-end estimate assumes an average of 7 trees per acre and relocation costs of \$1,000 per tree (a typical cost cited by mining company representatives) and a per tree endowment of \$500 for ongoing monitoring. The high-end estimate assumes that an average of 30 trees per acre are relocated, per-tree relocation costs of \$1,000, and a per-tree endowment of \$1,000 for monitoring and other measures that the Department of Fish and Wildlife may determine are needed to assist in its survival.

Total costs. Payment of mitigation fees and required relocation of trees on disturbed lands would result in new project costs of between \$1.7 million and \$17 million for a 200 acre project.

Range of Impacts on Investment Returns

While a successful mining operation can yield significant profits over a large number of years, these earnings only occur after an enormous amount of time and money is spent up-front on development costs (e.g. water, power, and road improvements), equipment, other pre-production activities, permitting and regulatory reviews, and financial commitments for site reclamation. Even before the WJT was made a candidate for endangered species, a typical 200 to 300 acre project could take well over a decade to receive conditional use permits and regulatory approvals from state and local governments. As discussed in the nearby box, mining operators incur major expenses over this pre-production period for land, equipment, exploration, and for satisfying numerous regulatory and permitting requirements, including site reclamation.

Combined, these costs can run into the millions to tens-of-millions of dollars, depending on project size, location, and conditions placed on permit approvals. For a project to be financially viable, profits during the active mining phase must be sufficient to cover these up-front costs and generate a satisfactory "rate of return" on the initial investment. Projects failing to generate a minimum rate of return will not receive investment funding, which for larger multi-state companies will flow to other regions with higher investment returns.

¹⁰ Subsection (a) of Section 1927.3 of the Public Resources Code requires that "(i)f relocation is required, the permittee shall implement measures to assist the survival of relocated trees, and to comply with any other reasonable measures required by the department to facilitate the successful relocation and survival of the western Joshua trees."

SB 122 Adds to Already Hefty Up-Front Costs for Mining Operations

Aggregate mining is a capital intensive industry that involves large up-front investments for purchases of land and equipment including backhoes, front-end loaders, bulldozers, conveyers, hoppers, conveyor belts, and crushers. It also involves considerable expense for exploration activities, materials sampling, and geophysical surveys to determine the location, volume, extent and quality of sand and gravel deposits in a reserve. For projects that move forward to the production stage, further pre-production costs are incurred for site design removal of overburden from the surface, and the installation of culvert pipes, ditches and collection pools to drain surface runoff and prevent erosion.

Substantial pre-production costs are also incurred for permits and regulatory reviews at the state and local level. The process includes numerous public meetings, preparations of a major environmental impact report as required by the California Environmental Quality Act (CEQA), court challenges, numerous mitigation requirements, and project revisions.

Mining site reclamation has also been an integral part of the local government project review and permitting process. Site reclamation includes removal of waste, supplies and equipment from the site, reducing the slope of quarry walls, replacement of topsoil and overburden, and revegetation consistent with the plan for post-mining uses. As noted previously, reclamation of mining operations within WJT areas includes revegetation of the WJT and other plant species, consistent with requirements of Native Plant Protection Act and Desert Native Plant Act. Project approval can also be contingent on the operator agreeing to prepare the land for other specified end uses, such as housing, agriculture, a reservoir, or commercial development. Companies are required to provide financial assurances for reclamation costs, which can run into the millions of dollars for a typical project. One concern raised by mining company representatives is that previously agree-to and funded reclamation agreements with local governments may be in conflict with takings provisions in SB 122.

Impacts of SB 122 on financial viability of mining projects. SB 122 will increase up-front project costs and significantly lower the rate of return on both existing and future projects. To provide a quantitative estimate of how large the impact on investment returns could be, we developed a simplified cash flow model for a typical mining project in WJT territory. This model compares upfront costs and ongoing earnings on a present value basis. Companies evaluating and prioritizing potential mining projects often use such models for comparing investment opportunities.

We then calculated internal rates of return for these investments, first excluding, then including the costs required by SB 122. The general parameters for our estimates are based on data from public mining companies annual reports and other public documents, and thus are intended to be reasonable estimates of costs and revenues associated with mining investments. We recognize, however, that the actual costs and revenues can vary significantly from one project to another. Thus the focus of this analysis should be on the *differences* in investment returns under the different alternatives, as opposed to the *levels* of baseline investments, production and profits.

Specifically, we calculated a “baseline” internal rate of return¹¹ for a 200-acre mining project under the following assumptions: an average per-acre yield of 100,000 tons (see nearby box); up-front costs of \$20 million for land, equipment, permitting, reclamation assurances, and pre-mining expenses; average production of 800,000 tons per year for 25 years; pre-tax profits on sales of \$6.00 per ton; and a combined federal and state income tax rate of 30 percent. As indicated in Figure 4, the up-front costs for this project would be \$20 million and annual after-tax cash flow would average \$3.8 million per year during the 25 year active mining period. The internal rate of return for this project would be 17.3 percent.

Figure 4

Impact of SB 122 on Investment Returns of a 200 Acre Project

	Baseline	Alternative A (Low WJT Density Area)	Alternative B (High WJT Density Area)
Up-Front Costs Excluding SB 122 Impacts	\$20.0	\$20.0	\$20.0
Additional Up-Front Costs from SB 122	0	\$2.9	\$17.1
Total Up-Front Costs	\$20	\$22.9	\$37.1
Average annual after-tax profits over 25 years of production.	\$3.8	\$3.8	\$3.8
Internal Rate of Return	17.3%	14.8%	8.5%

We then recalculated the internal rate of return incorporating the additional costs related to the in-lieu fees and tree relocation requirements authorized by SB 122. We show the results under two alternatives

- ▶ The first alternative assumes the project is located in the lower-fee zone and is in an area with relatively sparse WJT populations of 7 trees per acre, consistent with the low-end estimates shown in Figure 3. For this project, SB 122 would reduce the internal rate of return only modestly, from 17.3 percent to 14.8 percent. We estimate it would take about a \$1-per ton increase in price to offset the added costs and fully restore the return on investment under this alternative.
- ▶ The second alternative assumes the project is located in the higher-fee zone and is in an area with a dense WJT population, consistent with the high-end estimates shown in Figure 3. For this project, SB 122 would reduce the internal rate of return by over 50 percent, from 17.3 percent down to 8.5 percent.
- ▶ The reductions shown in Figure 4 are understated for companies that have to borrow to cover the additional up-front costs authorized by SB 122. For example, companies financing the \$17.1 million in additional costs shown under Alternative B would incur total expenses of \$34.9 million (\$24.3 million in today’s dollars) to repay the debt over 25 years.¹²

We estimate that it would take a \$5.50 increase in the per-ton sales price of aggregates to offset the negative impacts of SB 122 under the second, high-cost, alternative. For companies using debt to finance

¹¹ The internal rate of return (IRR) is a metric used in financial analysis to estimate the profitability of potential investments. IRR is a discount rate that makes the net present value (NPV) of all cash flows equal to zero in a discounted cash flow analysis. Generally speaking, the higher an internal rate of return, the more desirable an investment is to undertake. IRR is uniform for investments of varying types and, as such, can be used to rank multiple prospective investments or projects on a relatively even basis.

¹² This assumes an average interest rate of 7 percent and level annual payments over the 25 year period.

the higher costs, the price increase needed to fully restore investment returns would be as much as \$7 per ton.

Impact of SB 122 on End Users

Impact on Product Prices

The bottom line from both our survey and our modeling is that SB 122 will materially increase costs of mining operations, especially those in areas of high WJT density. If these costs are directly passed along to consumers, prices paid by governments and private sector construction contractors will rise commensurately. If mining operators are not initially able to pass along cost increase to consumers, the near-term impact will likely be less mining investment and fewer projects in the WJT areas. This will lead to a reduction in local supply into Southern California markets and product shortages, which will in turn drive up prices in the region.¹³

Thus, while the exact mechanism by which price increase will occur is unclear, higher costs imposed by SB 122 will almost certainly result in higher prices to consumers in Southern California, who will directly pay more for newly constructed housing and commercial buildings, and - as taxpayers - will pay more for highways, schools, and other public infrastructure.

For purposes of our subsequent discussion of impacts on end-users, we are using the \$5.50 to \$7.00 price increase increase needed to restore investment returns for projects in areas with WJTs as a general indicator of how much WJT would boost aggregates prices into Southern California markets.

¹³ In competitive commodity markets, prices are established by several factors, including price elasticity of demand of consumers and production costs of suppliers. If the initial response to SB 122 is less investment and lower supplies by the affected mining operators, there will be a shortage in the Southern California aggregates markets. Such a shortage will cause prices to be "bid upward" to the point where a combination of reduced consumer demand and new supplies into the market restore the balance between supply and demand. Given that demand for aggregates is relatively inelastic most of the adjustment will likely have to come from additional supplies. And, given the high cost of imports and already tight supplies in California aggregate markets, a logical source of these incremental supplies would be mines in high-density WJT areas. In this regard, \$5.50 to \$7 per ton increase provides a reasonable measure of how much prices would have to rise in Southern California markets to restore production incentives to mines operating in WJT territories and eliminated the gap between supply and demand in Southern California aggregates markets.

Impact of Reserve Depth and Volume Yields on SB 122 Costs

Our internal rate of return calculations in Figure 3 show differing impacts from SB 122 based primarily on the number of WJTs per project acre. A second source of variation, not shown in Figure 3, is the per-acre yield of aggregate product. For purposes of our calculations we assumed the typical project would be in areas with average reserve depth of 50 feet, and that about 90 percent of the product would be marketable. While we believe these are reasonable averages, there can be variations in both measures, but in particular reserve depth. Alluvial deposits in WJT territory are mostly between 40 feet and 60 feet deep, but some areas exceed 100 feet. To provide a general indication of the relationship between acreage and tonnage of reserves, if we assume (1) sand and gravel deposit depths averaging 40 feet, (2) 90 percent of the materials are marketable, and (3) average weight of about 1.4 tons per cubic yard, each acre will yield about 90,000 tons of marketable product. If the reserves are assumed to be 100 feet deep and the other assumptions are held constant, the per-acre yield would be about 225,000 tons. The implication is that the per-ton cost of a specific level of in-lieu fees, tree relocation or compensatory land purchases per acre will be 2 to 3 times greater for projects in shallow reserves than for projects in deep reserves.

Impact of Higher Product Prices on Typical Construction Projects

According to the American Equipment Association (AEM), 400 tons of aggregate are needed to construct the average home, 15,000 tons are needed to construct the average-size school or hospital, and 38,000 tons of aggregates are necessary to construct one mile of a single lane of an interstate highway.¹⁴ Based on these amounts, a \$5.50 to \$7.00 increase in the price of aggregates would raise construction costs for a typical single family home by between \$2,100 and \$2,800, the costs for a medium-size hospital, or school facility by \$85,000 and \$105,000, and the cost of an eight-lane interstate freeway by between \$1.7 million and \$2.1 million per mile.

Figure 4

Impact of a \$5.50 to \$7.00 Increase in Aggregates Prices on Various Construction Projects

Type of Construction Project	Type of Construction Project
Interstate Freeway	\$1.7 million to \$2.1 million per one-mile of an 8-lane freeway.
Hospital or school	\$85,000 to \$105,000 for average facility
Residential housing	\$2,200 to \$2,800 for an average single family home

Broader Impacts of Higher Prices on Selected Economic Sectors

Residential construction. Approximately 61,000 residential permits for new construction were issued in Southern California during 2022.¹⁵ Assuming a weighted average of 300 tons of aggregate per unit (a weighted average based on a mix of single family homes and multifamily units), total aggregate demand for new residential construction was about 18.3 million tons during the year. A \$5.50 to \$7.00 per-ton

¹⁴ Source: Association of Equipment Manufacturers (AEM). "Construction Aggregates 101: What They Are (And Why They Matter)." August 7, 2023.

¹⁵ Source: "Building Permits by MSA." U.S. Census. <https://www.census.gov/construction/bps/msamonthly.html>

price increase would translate into additional residential construction costs totaling between \$100 million to \$130 million for the Southern California region.

Given all of the factors affecting California housing markets, it seems unlikely that a \$5.50 to \$7.00 per ton increase would, by itself, be enough to keep most residential construction projects from moving forward. It could, however, make a difference in projects where developer profits are already squeezed by state and local regulatory requirements (e.g. inclusionary zoning), developer fees, rising interest rates, high costs and supply chain issues for other commodities (such as lumber), and high costs for land and labor. At a minimum, the price increases would make California's ambitious goals for new construction a little less attainable.

The more likely alternative is that projects will move forward with the added costs embedded in the price of the home. In these cases, the main effects will be higher rents and mortgages in an area already impacted by extraordinarily high costs in these areas. The impacts on individual homebuyers or renters would be modest. For example, if the \$2,900 cost increase for an average single family home were added to a mortgage balance, the annual cost to the homeowner would be about \$240 per year. Collectively, however, the impacts of higher rents and mortgages will add up. The additional \$130 million in construction costs, if passed along to consumers, will reduce discretionary incomes and spending on other goods and services. These reductions will have negative ripple effects on employment, wages, and profits of companies throughout the region.

Non-residential construction. Federal and state governments have stopped producing detailed data on non-residential permits valuations. Older data, however, as well as indirect information from property tax roll data, suggests that the impacts on the non-residential side of the market would be in the range of \$50 million to \$100 million in added costs, which if passed along to consumers would generate the same type of leases, and discretionary income and employment as described for the residential construction markets.

State and local governments. The impacts of higher aggregate prices would be substantial for state and local government in the Southern California region. This reflects the large amount of construction-related spending by state and local governments generally, and in particular the large amount of spending on roads and highways, which require substantial amounts of aggregates. The California Department of Transportation has estimated that between 8 percent and 10 percent of highway construction costs are attributable to aggregates.¹⁶

According to the *U.S. Census of State and Local Governments*, \$49 billion was spent by state and local governments in California for construction-related capital outlay in 2021, including about \$10 billion for transportation.¹⁷ Based on these totals, we estimate that about \$1.2 billion was spent by state and local governments throughout California on aggregates during the year.¹⁸ Of this statewide total, we estimate that about one-third, or \$400 million was spent by state and local governments for projects in Southern California counties supplied by mining operations in WJT territories. A \$5.50- to \$7-per ton increase in the price of aggregate would raise state and local government costs in this region by about **\$130 million and \$170 million annually**. About one-half of these totals would impact state

¹⁶ See page 9 of "Aggregate Resource Availability in the Conterminous United States, Including Suggestions for Addressing Shortages, Quality, and Environmental Concerns." William H. Langer, U.S. Department of Interior, U.S. Geological Survey. https://pubs.usgs.gov/of/2011/1119/pdf/OF11-1119_report_508.pdf

¹⁷ See "U.S. Survey of State and Local Finances, 2021 Tables." U.S. Census Bureau. <https://www.census.gov/programs-surveys/gov-finances.html>.

¹⁸ This estimate is based on the assumption that 9 percent of total transportation capital outlay spending is spent on aggregates (mid-point of the 2007 Department of Transportation estimate of 8 percent to 10 percent) and that about 1 percent of construction spending on other construction projects is spent on aggregates. The latter estimate is based on our review of interindustry spending patterns in the U.S. economy.

government and the other half would impact local governments in the region. Absent higher taxes or a redirection of spending from other government programs, the higher costs will translate into fewer road and highway projects, which will have negative impacts on traffic congestion, employment, wages, and business income in the region.

Conclusion

SB 122 will raise costs to mining operations located in WJT territories. The exact magnitude will depend on how the key provisions of SB 122 are implemented by the Department of Fish and Wildlife, but even under conservative assumptions, the costs will be substantial. Some of these costs will fall on existing operations, imposing new requirements, raising costs, and reducing incomes for existing projects that have already gone through an extensive (and expensive) regulatory and permitting process. Other costs will fall on future projects on permitted lands. In the latter case, mining operators will face potentially major declines in projected investment returns which can only be recouped through higher prices to consumers. To the extent local mining operators are able to pass forward cost increases, end users will experience immediate price increases; if local mining operators are not able to pass forward price increases, the result will be less profits, investment, and production in the Southern California region - an area already facing long-term shortages in permitted production. The loss of production will in turn drive up aggregate prices in the future. All end users will face higher costs, but the impacts will fall particularly heavily on state and local governments, which are major purchasers of aggregates used in construction and improvements to roads and highways. To the extent that lost local production results in more imports from other regions, there will also be significant increased environmental and societal impacts from increased fuel consumption, CO₂ emissions, air pollution, traffic congestion, and road maintenance.



March 3, 2025

Charlton "Chuck" Bonham
Director,
California Department of Fish and Wildlife
715 P Street
Sacramento, CA 95814
Via: WJT@wildlife.ca.gov

Erika Zavaleta
President
California Fish and Game Commission
715 P Street, 16th Floor
Sacramento, CA 95814
Via: fgc@fgc.ca.gov

Re: Comments WJT Conservation Plan – CALCIMA – {electronically delivered}

Dear Director Bonham and President Zavaleta;

In light of the February 12, 2025 Commission meeting on western Joshua tree ("WJT") and the deliberations and discussion which occurred relating to the draft Western Joshua Tree Conservation Plan ("Plan"), CALCIMA wanted to add these comments to the discussion as the Plan process heads towards workshops, meetings, and the April commission meeting. The draft Plan has a long way to go to being a complete plan suitable for approval. We are committed to the development of a Plan which properly uses the Legislature's in-lieu fee system to protect the species while also enabling and facilitating project permitting: a structure clearly intended by the Legislature under the Western Joshua Tree Conservation Act ("Act"). We believe the dual purposes of the Act can be met, and we commit to providing methods and examples of structures from our members' collective experience that the Commission and Department can use to do so. Including by detailing how the plan does impact, interface, and effectively control western Joshua tree incidental take permit ("WJTCA ITP") process if it is adopted as specified by the Legislature and Governor.

The Plan before the Commission is Incomplete

There are **multiple** elements within the Plan which are incomplete. For example, the Plan submitted for review provides no justification for the effectiveness criteria selected and therefore does not

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455 Capitol Mall, Ste. 210 | Sacramento, CA 95814 | (916) 554-1000
3890 Orange Street, Suite 167 | Riverside, CA 92501 | (951) 941-7981

demonstrate how it is protecting the WJT from becoming listed under the California Endangered Species Act. We hope that the Department and Commission justify the standards using the scientific data.

The Plan also doesn't have an accurate climate refugia map that affected stakeholders can use to see if their property is impacted and scheduled to be effectively taken by the Department's proposed action. Unilaterally declaring that around 90% of private property inside the refugia is necessary to meet the Plan objective necessitates that landowners who's lands have been identified by the Department for acquisition and/or Department management have, 1) access to meaningful maps, 2) enough time for substantive review, and 3) understand potential impacts to their lands proposed by the Department, 4) an opportunity to meaningfully collaborate with the Department and Commission and other stakeholders. Stakeholders and affected landowners have yet to have that opportunity and, as a result, the Department clearly missed the December 2024 deadline to present a complete Plan before the Commission. No Plan was Agendized and presented at the Commission meeting on December 11-12, 2024. Simply listing it on the agenda under the public receipt of documents and noting it would be heard at future meeting was not sufficient. Following the February 12 meeting, it is now clear that we won't have a complete plan until April at the earliest because the Department and Commission are not aligned on which refugia scenario to use and have not even addressed the other incomplete portions of the Plan.

Below we highlight key sections of the Plan approval process that empower the Commission to oversee this process, as well as oversee the Department's implementation of permitting by properly ensuring the development and application of appropriate avoidance mitigation and relocation protocol guidance documents.

"1927.6. (a) The department shall develop and implement a western Joshua tree conservation plan **in collaboration with the commission**, governmental agencies, California Native American tribes, **and the public**. The conservation plan shall incorporate a description of management actions necessary to conserve the western Joshua tree and objective, measurable criteria to assess the effectiveness of such actions. The conservation plan **shall also include guidance for the avoidance and minimization of impacts to western Joshua trees and protocols for the successful relocation of western Joshua trees**. The department **shall present a complete draft conservation plan** at a public meeting of the commission, **for its review and approval, by December 31, 2024**. The commission shall take **final action on** the conservation **plan by June 30, 2025**. The department and commission shall, if necessary, periodically update the conservation plan **to ensure the conservation of the species."** (emphasis added).

President Zavaleta's BAU Climate Refugia Vs. Department Climate Refugia

Given the differing views of the Commission and the Department, CalCIMA encourages the Commission, and particularly President Zavaleta to participate in the Department's workshops between now and the Commission's approval of the Plan to ensure necessary collaboration between Department and Commission. The ongoing refugia issue underscores that not enough collaboration between the Department and Commission has occurred. Additionally, it is essential to know which climate refugia area we are discussing: the Cole 2011 BAU or the yet to be released federal Climate Refugia Map, which the Department prefers. Fundamental due process demands that Stakeholders be provided maps with sufficient detail to track property ownership and anticipated impacts so that stakeholders know they are stakeholders and that their lands are in jeopardy of being declared vital western Joshua tree habitat.

Agreeing upon a climate refugia model should be achieved before or at the April Commission meeting. CalCIMA believes Commission President Zavaleta has the proper recommendation.

While the Commission briefly discussed the moral concerns of terraforming within the Plan, our current conservation challenges require evolution and change; not stagnation. It is time we moved past the stale vision of the western biologic community that nature must be frozen in the position first sketched on a notepad by a colonist getting off a boat claiming ownership of land, animals, and plants for crown and king.

Climate change reality dictates we must accept evolution occurs particularly in our policies of preservation and conservation, including migratory evolution of region based on climactic factors. The Commission and Department's mission is to draft a Plan that prevents the WJT becoming listed. Where scientific evidence indicates that the identified climate refugia are the only places that the species will survive and breed, that information will be necessary to meet the legislatures direction. It is the Legislature's and Governor's domain to adopt the Act to preserve the species and facilitate in-lieu permitting in a manner that "traditional" conservation methods do not stall economic development and adaptation. The Plan must adequately reflect this reality.

The Plan Is All About WJTCA ITP Permitting Criteria

At the February Commission meeting, concerns were expressed regarding the state of WJT incidental take permitting ("WJTCA ITP") under the Act. The Commission pondered that they may have no say in the Department's implementation of WJTCA ITP. The Commission's concern is not accurate, based on the Legislature's clear directives.

The Plan incorporates WJTCA ITP processes, and therefore the Commission, as final approval body, has broad authority over WJTCA ITPs, particularly in the development of all significant criteria, from avoidance and mitigation to relocation protocols, for the in-lieu fee program.

This in-lieu fee program is an alternative to a project developer being required to acquire conservation land and fund an endowment themselves before starting the project. Enabling vital projects, such as housing, infrastructure, flood safety, fire safety, and energy development to occur quickly, is a central goal of the Act.

The Plan impacts permitting criteria by establishing the avoidance and minimization criteria. And while the Plan does contain discussion of avoidance and minimization measures, as required, it doesn't show or provide the scientific data necessary to support the identified measures, such as a 50 feet buffer to protect roots at the base of the tree (which uses inconsistent data from multiple species, rather than observable WJT data) nor does it appear to recognize the Legislative mandate that When various measures are available to meet this obligation, the measures required shall maintain a WJTCA ITP permittee's objectives to the greatest extent possible.. Properly evaluating and vetting the information in the Plan, and ensuring its accuracy, is well within the Commission's jurisdiction.

The Commission, by exercising its authority over the Plan, can define the scope of avoidance and mitigation measures that can be implemented during the WJTCA ITP process while maintaining the CA Legislature's direction to protect a permittee's objectives when applying for a WJTCA ITP.

The Plan Determines Cost and Fees Paid By Permittees

The Plan will determine the program cost and the Commission needs to provide careful oversight of the Department's proposed permitting and associated costs. The data we shared in our initial comments is that permitting fees are currently approximately a billion dollar "voluntary fee" a year imposed on development in the Plan area. That is based on published CESA ITP costs for western Joshua Tree being nearly twelve thousand an acre and targeting between 3% and 5% of Joshua tree range be conserved every 2 years. That estimated cost, however, cannot be readily translated into a per tree fee because the Department has not yet shared any data on permitted takes under the WJTCA ITP. They missed the legislatively mandated deadline of January 2025 to provide the Legislature and Commission that detail which would have helped inform this process.

"1927.7. (a) Beginning in 2025, by January 31 of each calendar year, the department shall submit an annual report to the commission and the Legislature assessing the conservation status of the western Joshua tree, including, but not limited to, by detailing the number of permits issued, the number and size class of western Joshua trees authorized to be taken, the number of western Joshua trees lethally removed, the number and location of western Joshua trees relocated, the number and location of acres of western Joshua tree woodlands developed, the type, scope, and scale of mitigation measures undertaken by permittees, the number and location of acres of western Joshua tree woodlands conserved, the quality of the acres conserved, the amount of fees paid, the amount of all expenditures from the fund, the projects and actions funded by expenditures from the fund, the adequacy of the fees to conserve the western Joshua tree, actions taken pursuant to the conservation plan, and other relevant information. The department's annual report shall summarize the information provided by counties and cities pursuant to agreements entered into pursuant to subdivision (c) of Section 1927.3 and subdivision (b) of Section 1927.4. (emphasis added).

Timely providing this data, just a month after the first mandated public presentation of the Plan in December of 2024, is essential to appropriately informing the immediate discussion of the fundamental criteria in the Plan, as well as evaluating the projected economics of Plan implementation. Without data on permits issued, relocation achieved, the type, scope, scale of mitigation measures and associated costs implemented by permittees, it is difficult to effectively inform the development and maintenance of the Plan's criteria. The report must be provided, with sufficient time for evaluation and public comment, before the Commission approve the Plan.

The Data we submitted in our initial comments indicates the current draft Plan would cost approximately \$1 billion a year to implement. The Plan, targets between 97,000 and 161,000 acres every 2 years for land acquisition. We believe the Commission should focus carefully on cost to implement, potential fees and that impact on the dual purpose of the act. Carefully defining acquisition lands between efforts to forge federal partnerships and identification of what private lands will be sought for voluntary acquisition is one way to narrow the fee debate on these lands. We also believe the plan should clearly note that it will only seek voluntary partners for land acquisition.

Missing Legislative Deadlines

Finally, we wish to emphasize the need to timely provide necessary information to the public and the Commission during this process. While we agree missing legislative deadlines should not be planned for, it does happen. The Department has clearly missed multiple legislative deadlines: to provide a

comprehensive report to the commission and legislature on actions under this Act and providing a complete plan for the Commission's review in 2024.

We believe trying to meet the Legislature's deadline is good and we are committed to the effort. But if we don't get there, particularly because of delays in the availability of necessary information, we hope the Commission is also willing to miss this deadline. Adopting a broken plan could be a significant cost, and inhibitor, for both development and species conservation. Getting it right matters!

We look forward to participating in workshops to clarify and improve the draft. We also appreciate and the efforts of the department reflected in the Draft in front of us, but perhaps the historic scope of this project was more than anticipated.

Respectfully,

A handwritten signature in blue ink, appearing to read 'Adam Harper', with a long, sweeping horizontal stroke extending to the right.

Adam Harper
Senior Director of Policy



April 1, 2025

Erika Zavaleta
President
California Fish and Game Commission
715 P Street, 16th Floor
Sacramento, CA 95814

RE: April 16-17 Agenda Item 14: Western Joshua Tree – Draft Conservation Plan

Dear President Zavaleta,

CalCIMA appreciates the opportunity to provide continued feedback on the Draft Western Joshua Tree Conservation Plan (Plan) to the California Fish and Game Commission (Commission). We look forward to receiving a complete western Joshua Tree Conservation Plan which we will be able to submit final comments and analysis of prior to the Summer. We look forward to working with the Commission and the Department to ensure we achieve the legislature's vision of the Plan and Act, a vision best expressed by Assemblymember Juan Carrillo on the Assembly Floor as SB 122 was voted upon:

“This bill is not just about preservation of a remarkable species, it is a testament to the ability to strike a delicate balance between safeguarding our natural heritage and providing a pathway for the much needed economic development that our district yearns for.”

We have expressed many comments in our previous comments and we have attached our comments from March 3rd, 2025 as well as our comments from January 30, 2025. These letters highlight our many concerns and requests for clarity and a complete plan. As indicated in our March 3rd letter, we feel this meeting needs to give the public clarity on which climate refugia map and territory will be used. In addition the plan needs to explain why the various effectiveness criteria provisions included within the plan are necessitated by the science described in the plan. In order to comment effectively we need to get to a complete plan and further we need all of the resource data we were to have during the stakeholder process.

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In order to review the plan we also need to have the complete report required by Fish and Game Code 1927.7 which will provide the commission and stakeholders invaluable information on actual implementation of the act including;

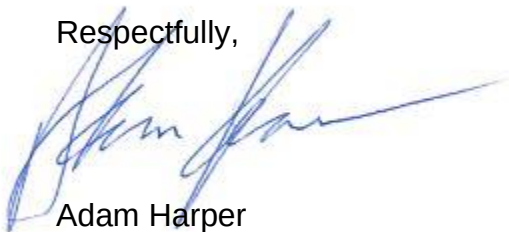
1. Number of permits issued
2. Number and sizes of trees authorized for take
3. Number of trees lethally removed
4. Number and location of western Joshua Trees relocated
5. Number and location of WJT Woodlands developed
6. Type, scope and scale of mitigation undertaken by permittees
7. Number and location of WJT woodlands conserved
8. Quality of the acres conserved
9. Amount of fees paid

Currently based on information released by the department we know at least 44 permits were applied for from a 2023 press release. In the 2024 release we were told over 25 WJTITP's have been issued, but we still don't have the breakdown of the items above to assist in the evaluation of the plan to actual successful and implementable permits that have been issued. Were more permits applied for, why aren't all 44 issued as this was streamlining using an in-lieu fee and it is 2025, two years after those first applications? That doesn't appear to be keeping with the intent of the legislature in adopting the WJTCA and is an indication something may be improper in the procedures as it isn't meeting the goal of providing a pathway for economic development.

CalCIMA strongly believes stakeholders need adequate time, between 60 and 90 days with a complete Western Joshua Tree Conservation Plan and underlying essential state data and justifications for effectiveness criteria, in order to provide deliberative comments and considerations for your final consideration before adoption. We hope at the conclusion of April's meeting we will know when we will receive such a document.

We encourage the Commission to ensure stakeholders have access to the resources and documents the legislature intended in order to help ensure fair deliberations. We look forward to being able to provide comments and debate effectiveness criteria based upon the department and commissions explanation of why such criteria are considered necessary.

Respectfully,



Adam Harper
Senior Director of Policy
CalCIMA



May 08, 2025

Erika Zavaleta
President
California Fish and Game Commission
715 P Street, 16th Floor
Sacramento, CA 95814

Charlton “Chuck” Bonham
Director,
California Department of Fish and Wildlife
715 P Street
Sacramento, CA 95814

RE: CalcIMA Suggested Amendments WJTCP May 2025

Dear President Zavaleta and Director Bonham,

CalcIMA appreciates the opportunity to continue providing input on the Draft Western Joshua Tree Conservation Plan (Plan) to the California Fish and Game Commission (Commission). Respecting the urgency of the Commission’s timeline, we have developed focused amendment proposals that offer immediate clarity while establishing a foundation for future iterations of the Plan.

It is critical that we work collaboratively to realize the dual objectives of the Plan and the Western Joshua Tree Conservation Act. This vision was aptly captured by Assemblymember Juan Carrillo during the Assembly Floor discussion of SB 122:

“This bill is not just about preservation of a remarkable species, it is a testament to the ability to strike a delicate balance between safeguarding our natural heritage and providing a pathway for the much needed economic development that our district yearns for.”

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Recognizing the time limitations and the breadth of unresolved questions, we respectfully submit four targeted amendments for your consideration:

1. Clarify the distinction between the Plan and the permitting process
2. Address avoidance and minimization for previously entitled homes and infrastructure
3. Introduce a avoidance and minimization framework for mineral development
4. Introduce a avoidance and minimization Safe Harbor for relocated and preserved trees

Amendment 1: Add Background on Permitting (Section 1.1.3)

The Department correctly notes that many Plan discussions have focused on permitting. To provide clarity and assist future users of the Plan, CalCIMA proposes the addition of a concise, high-level permitting background in a new Section 1.1.3. The proposed language, attached as **CalCIMA Suggested Amendment 1 – Permitting**, references both statute and the Department's website, and is intended to orient stakeholders needing permits to the proper locations and inform future dialogue on the Plan.

Amendment 2: Clarify Status of Existing Homes and Previously Entitled Projects

Much of the public testimony has centered on existing homes, infrastructure, and development projects that predate the Act. These entities, often conditioned under prior regulatory regimes such as the California Native Plant Act, face unique challenges with respect to avoidance and minimization requirements.

We propose that the Plan explicitly recognize these projects as having met their avoidance and minimization obligations under previously applicable laws, thereby leaving mitigation as the primary remaining requirement. To this end, we request the following addition to Section 5.2.1 ("Impact Avoidance and Minimization"):

"The first priority for conservation of western Joshua tree and its habitat is to avoid adverse [climate](#) impacts altogether. Although climate change stress may be impossible to avoid in the short-term, other impacts are avoidable, such as project-related degradation and destruction of habitat. [However, it should be recognized that existing homes, and public and private development projects, do not have the same avoidance and minimization opportunities as new projects brought forward after the Act's adoption. Further as identified previously in this plan, such existing homes and projects may have had avoidance and minimization measures imposed under prior laws \(e.g. California Native Plant Act\). Such existing projects and essential infrastructure authorized prior to the Act's adoption are recognized as achieving their avoidance and minimization obligations by virtue of meeting their adopted obligations at the time of project approval, authorization or legislative creation. For new projects,](#) Impact avoidance should be emphasized as the first preferred choice whenever feasible, especially in areas identified as climate refugia. Furthermore, the importance of avoiding take to western Joshua tree and its habitat has been emphasized during discussions with Tribes, in

particular the principle of not harming a tree unless it is absolutely critical for people (FIICPI, pers comm., 2024b)."

The language is attached as **CalCIMA Amendment 2 – Pre-Existing Projects**.

Amendment 3: Add Management Action 1.6 – Avoid Impacts from Mineral Development

The Plan should from the outset encourage mining operations to proactively support western Joshua tree conservation through reclamation efforts. Specifically, where mining reclamation plans under SMARA include western Joshua tree planting or relocation, such actions should be recognized as avoidance and minimization measures.

While not all mines will pursue this approach—due to differing end uses based on community and landowner needs those that do should be supported and encouraged. The proposed language, attached as **CalCIMA Amendment 3 – Mineral development**, reads as follows:

“Action A&M 1.6: Avoid Impacts from Mineral Development

Reclamation of surface mining operations under the Surface Mining and Reclamation Act (SMARA) is recognized as achieving minimization and avoidance where the reclamation plan includes a revegetation plan addressing western Joshua trees, including without limitation, planting and/or relocation of western Joshua trees. “

Amendment 4 – Avoidance and Minimization Safe Harbor for Relocated and Preserved Trees

Current statutory protections around relocation are inadequate and may unintentionally disincentivize preservation. As multiple witnesses testified, project proponents and homeowners are discouraged from maintaining relocated trees due to long-term economic burdens and the costs of recurring potential impacts.

There is an urgent need to create provisions that protect those who choose to preserve relocated trees, either on- or off-site, from future regulatory liability as well as other preserved trees on the site. Without such a mechanism, we risk incentivizing “take” over relocation—a perverse outcome that undermines the conservation goals of the Act.

This proposal, CalCIMA Suggested Amendment 4 – Relocated and Preserved Trees, aims to encourage tree preservation by removing the regulatory and financial disincentives currently in place to maintaining trees on site. The language is attached as **CalCIMA Amendment 4 – Relocated and Preserved Trees**.

In conclusion, CalCIMA believes that addressing these four key areas in the initial Plan is essential to:

- Provide necessary background for permitting,
- Establish clarity around the legal transition between prior and current requirements,
- Promote habitat restoration by mineral developers, and
- Create a Safe Harbor for Relocated and Preserved Trees.

We appreciate your consideration of these amendments and look forward to continued collaboration and discussion.

Respectfully,



Adam Harper
Senior Director of Policy
CalCIMA

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

Western Joshua Tree Conservation Plan



[CalCIMA Suggested Amendment 1: Add Introduction Addition 1.1.3: Background of the Western Joshua Tree Conservation Act – Permitting](#)

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Draft Presented to the California Fish and Game Commission

DECEMBER 2024



1.1.2 Background of the Western Joshua Tree Conservation Act

In October 2019, the Center for Biological Diversity submitted to the Commission a petition to list western Joshua tree as threatened under CESA. The petition identified climate change and wildland fires as the greatest threats to the persistence of the species. It also included habitat loss due to development; seed and plant predation, especially during drought; and competition with invasive species as other factors affecting the species' ability to survive and reproduce (Center for Biological Diversity 2019).

The Commission found, based in part on CDFW's evaluation of the petition and related recommendation, that there was sufficient information indicating that listing the species as threatened under CESA may be warranted. The Commission designated western Joshua tree a candidate species in September 2020 (CDFW 2022), conferring upon western Joshua tree temporary legal protection under CESA.

CDFW evaluated the petition and submitted a written status review report to the Commission in March 2022 (CDFW 2022). The report concluded that western Joshua tree is not likely to be in danger of becoming extinct throughout all, or a significant portion, of its range in the foreseeable future in the absence of special protection and management efforts required by CESA. In June 2022, the Commission considered the status review report and could not reach a decision regarding whether listing the species as threatened was warranted. In February 2023, while the Commission was still considering its final decision on the petition, legislation was introduced to protect western Joshua tree. In response to the legislative proposal, the Commission postponed further consideration of the petition under CESA.



Source: National Park Service.



In July 2023, the California State Legislature passed and the governor signed into law WJTCA, codifying as Chapter 11.5 of Division 2 of the California Fish and Game Code (commencing with Fish & G. Code, § 1927). WJTCA does the following:

- Provides protections for western Joshua tree by prohibiting the import, export, take, possession, purchase, or sale of any western Joshua tree in California (Fish & G. Code, § 1927.2, subd. (a)). Pursuant to Fish and Game Code Section 86, “take” means “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.”
- Allows CDFW to authorize take of western Joshua tree if certain conditions are met (Fish & G. Code, § 1927.3, subds. (a)-(b)).
- Authorizes CDFW to enter into a written agreement with any county or city to delegate to the county or city limited authority to authorize take of western Joshua tree if specified conditions are met (Fish & G. Code, § 1927.3, subd. (c)).
- Allows CDFW to authorize, by issuing permits, the removal or trimming of dead western Joshua trees or the trimming of live western Joshua trees that pose a risk to structures or public health and safety if certain conditions are met. (Fish & G. Code, § 1927.4, subd. (a)).
- Authorizes CDFW to enter into a written agreement with any county or city to delegate to the county or city limited authority to authorize the removal or trimming of dead western Joshua trees or the trimming of live western Joshua trees that pose a risk to structures or public health and safety if specified conditions are met (Fish & G. Code, § 1927.4, subd. (b)-(c)).
- Allows permittees to elect to pay specified fees in lieu of completing mitigation obligations (Fish & G. Code, § 1927.3, subd. (a)(3)).
- Establishes the Western Joshua Tree Conservation Fund (Conservation Fund). Any monies in the fund will be continuously appropriated to CDFW solely for the purposes of acquiring, conserving, and managing conservation lands and completing other activities to conserve western Joshua tree. (Fish & G. Code, § 1927.5, subd. (a)).
- Directs CDFW to develop and implement a conservation plan for western Joshua tree in collaboration with the Commission, other governmental agencies, California Native American tribes, and the public. (Fish & G. Code, § 1927.6, subd. (a)). CDFW must consult with California Native American tribes and include co-management principles (Fish & G. Code, § 1927.6, subd. (b)). CDFW must present the draft Conservation Plan at a public meeting of the Commission no later than December 31, 2024, and WJTCA calls for the Commission to take final action on the plan by June 30, 2025. (Fish & G. Code, § 1927.6, subd. (a)).
- Directs CDFW to submit an annual report assessing the conservation status of western



Joshua tree to the Commission and the State Legislature by January 31 of each year, starting in 2025 (Fish & G. Code, § 1927.7, subd. (a)).

- Requires CDFW to submit to the Commission an updated status review report by January 1, 2033, unless the Commission directs CDFW to complete it sooner (Fish & G. Code, § 1927.2, subd. (c)(2)(F) & 1927.9). The Commission shall consider determining whether the petitioned action to list western Joshua tree under CESA is warranted (Fish & G. Code, § 1927.9). In the interim, western Joshua tree is, and will remain, a candidate species under CESA.

1.1.3 Background of the Western Joshua Tree Conservation Act – Permitting

The Western Joshua Tree Conservation Act created an in-lieu fee Permitting system for homeowners and businesses taking western Joshua Tree's in California. The Act has a dual mission of enabling development and providing for conservation of the western Joshua Tree. The Act's provisions are separate from the conservation plan but provide important legislative direction for the plan to establish conservation tools and policies. In addition, the legislature enabled local governments to have the authority to grant western Joshua Tree Incidental Take permits for single-family residences, multifamily residences, accessory structures, and public works projects concurrent with providing project approvals.

In establishing this Direction, the legislature defined the permitting criteria developers and homeowners taking western Joshua Tree would need to meet in Fish and Game Code Subsection 1927.3 (a)(1)-(4):

“(a) The department may authorize, by permit, the taking of a western Joshua tree if all of the following conditions are met:

(1) The permittee submits to the department for its approval a census of all western Joshua trees on the project site, including size information and photographs, that categorize the western Joshua trees according to the following size classes:

(A) Less than one meter in height.

(B) One meter or greater but less than five meters in height.

(C) Five meters or greater in height.

(2) The permittee avoids and minimizes impacts to, and the taking of, the western Joshua tree to the maximum extent practicable. Minimization may include trimming, encroachment on root systems, relocation, or other actions that result in detrimental but nonlethal impacts to a western Joshua tree.

(3) The permittee mitigates all impacts to, and taking of, the western Joshua tree. The measures required to meet this obligation shall be roughly proportional in extent to the impact of the authorized taking of the species. When various measures are available to meet this obligation, the measures required shall maintain the permittee's objectives to the greatest extent possible. All required measures shall be capable of successful implementation. The permittee shall ensure adequate funding to implement the mitigation measures. In lieu of completing the mitigation obligation on its own, the permittee may elect to satisfy this mitigation obligation by paying fees, pursuant to the fee schedule in subdivision (d) or (e), for deposit into the fund.



(4) (A) The department may include permit conditions that require the permittee to relocate one or more of the western Joshua trees. If relocation is required, the permittee shall implement measures to assist the survival of relocated trees, and to comply with any other reasonable measures required by the department to facilitate the successful relocation and survival of the western Joshua trees. These relocation measures shall include, but are not limited to, all of the following:

- (i) A requirement that the relocated western Joshua tree is placed in a location and with proper orientation to improve its survival.
- (ii) A requirement that western Joshua trees are relocated at a time that maximizes their survival when feasible.
- (iii) A requirement that a desert native plant specialist be onsite to oversee relocation."

The Department Maintains a permitting website available at the following location (<https://wildlife.ca.gov/Conservation/Environmental-Review/WJT/Permitting/WJTCA-ITP>). Members of the public interested in applying for permits can find the necessary documents and forms at this website.

1.2 CONSERVATION PLAN VISION, PURPOSE, AND OBJECTIVES

1.2.2 Vision

The vision of the Conservation Plan is to prevent the extinction of western Joshua tree in the wild, preserve functioning ecosystems that support western Joshua tree, and maintain sustainable populations of western Joshua tree in California over the long term, such that listing the species under CESA will not be warranted.

1.2.3 Purpose

The purpose of the Conservation Plan is to fulfill the requirements articulated in Fish and Game Code Section 1927.6. Upon approval by the Commission, the Conservation Plan will guide the conservation of western Joshua tree in California by focusing on the most urgent and important management actions, as informed by science including TEK; collaboration with California Native American tribes; collaboration with federal, state, and local government agencies; and public feedback.

1.2.4 Objectives

The following objectives are identified in WJTCA:

- Describe management actions necessary to conserve western Joshua tree and objective, measurable criteria to assess the effectiveness of such actions (Fish & G. Code, §1927.6, subd. (a)).



- Provide guidance for the avoidance and minimization of impacts to western Joshua trees (Fish & G. Code, § 1927.6, subd. (a)).
- Include in the Conservation Plan protocols for the successful relocation of western Joshua trees and provide for the relocation of western Joshua trees to tribal lands upon a request from a Tribe (Fish & G. Code, § 1927.6, subds. (a)-(b)).
- Include co-management principles and incorporate Traditional Ecological Knowledge into the Conservation Plan (Fish & G. Code, § 1927.6, subd. (b)).
- Prioritize actions and acquiring and managing lands that are identified as appropriate for western Joshua tree conservation (Fish & G. Code, § 1927.6, subd. (c)).

1.2.5 Geographic Focus Area

The Conservation Plan includes a geographic focus area for conservation activities encompassing 37,749 square kilometers (9,327,981 acres, or 14,575 square miles) in southeastern California. It reflects the general location of currently occupied western Joshua tree habitat plus an 8-kilometer (5-mile) buffer in California to encompass areas that could be suitable for implementation of conservation management actions (Figure 1-2). However, application of WJTCA and implementation of the management actions described in the Conservation Plan (see Chapter 5, "Conservation Management Actions and Effectiveness Criteria") are not limited to the geographic focus area. In addition, the geographic focus area may be modified through amendment of this Conservation Plan based on evolving information regarding current and future western Joshua tree habitat resulting from ongoing scientific analysis.



CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

Western Joshua Tree Conservation Plan



[CalCIMA Suggested Amendment 2:](#) – Impact Avoidance and Minimization –
[Existing Homes and Public and Private Projects](#)

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Draft Presented to the California Fish and Game Commission

DECEMBER 2024



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5.2.1 Impact Avoidance and Minimization

The first priority for conservation of western Joshua tree and its habitat is to avoid adverse [climate](#) impacts altogether. Although climate change stress may be impossible to avoid in the short- term, other impacts are avoidable, such as project-related degradation and destruction of habitat. However, it should be recognized that existing homes, and public and private development projects, do not have the same avoidance and minimization opportunities as new projects brought forward after the Act's adoption. Further as identified previously in this plan, such existing homes and projects may have had avoidance and minimization measures imposed under prior laws (e.g. California Native Plant Act). Such existing projects and essential infrastructure authorized prior to the Act's adoption are recognized as achieving their avoidance and minimization obligations by virtue of meeting their adopted obligations at the time of project approval, authorization or legislative creation. For new projects, Impact avoidance should be emphasized as the first preferred choice whenever feasible, especially in areas identified as climate refugia. Furthermore, the importance of avoiding take to western Joshua tree and its habitat has been emphasized during discussions with Tribes, in particular the principle of not harming a tree unless it is absolutely critical for people (FII CPI, pers comm., 2024b).

When complete avoidance cannot be achieved, efforts should be made to minimize impacts on western Joshua tree and its habitat, and the presence of tribal cultural monitors and a trained arborist to minimize these impacts are encouraged (FII CPI, pers. comm., 2024a). Minimization may include efforts to reduce the number of trees and seeds taken; the area of habitat that is lost or degraded; the severity of impacts on individual trees; impacts on other organisms on which western Joshua tree depends; and indirect impacts on trees, seeds, habitats, and other ecologically related organisms.

The avoidance and minimization actions in this section could be voluntarily adopted and implemented by project proponents and land managers, incorporated into project approvals by local governments and regulatory agencies, or incorporated into voluntary, cooperative agreements between relevant agencies, organizations, and other parties. The Western Joshua Tree Conservation Act (WJTCA) requires the avoidance and minimization of impacts on western Joshua tree to the maximum extent practicable as a condition of obtaining a WJTCA incidental take permit (ITP) (Fish & G. Code, § 1927.3, subd. (a)(2)). WJTCA also states that the Conservation Plan shall include guidance for the avoidance and minimization of impacts on western Joshua trees and protocols for the successful relocation of western Joshua trees (Fish & G. Code, § 1927.6, subd. (a)).

The impact avoidance and minimization (A&M) management actions listed in this chapter are intended to promote the survival of existing western Joshua trees and the protection of their



habitat where they could potentially be harmed by development, human activities, and natural hazards. Impacts on western Joshua trees could occur from urban development, infrastructure construction, resource extraction, damage by people and vehicles, and other forms of landscape alteration (see Section 4.3). When these activities affect the root systems or the seedbanks of western Joshua tree, the survival of populations can be compromised.



CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

Western Joshua Tree Conservation Plan



CalCIMA Suggested Amendment 3: Additions – Avoid Direct and Indirect Impacts
Add New Management Action 1.6 – Avoid Impacts from Mineral Development

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Draft Presented to the California Fish and Game Commission

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MANAGEMENT ACTION A&M 1: AVOID DIRECT AND INDIRECT IMPACTS

When landscape-altering projects occur near western Joshua trees, avoidance buffers should be established to avoid direct impacts on aboveground and belowground western Joshua tree parts and their seedbank. Scientific information on western Joshua tree root ball width, root zone width, and seedbank width was used to inform direct impact avoidance buffers. Direct impact buffers for avoidance should apply to ground-disturbing activities, such as construction and resource extraction, fire control and suppression, and any other actions that could harm or kill western Joshua trees or seeds. The following actions provide activity-specific guidance for direct impact avoidance.

Action A&M 1.1: Retain Healthy Trees

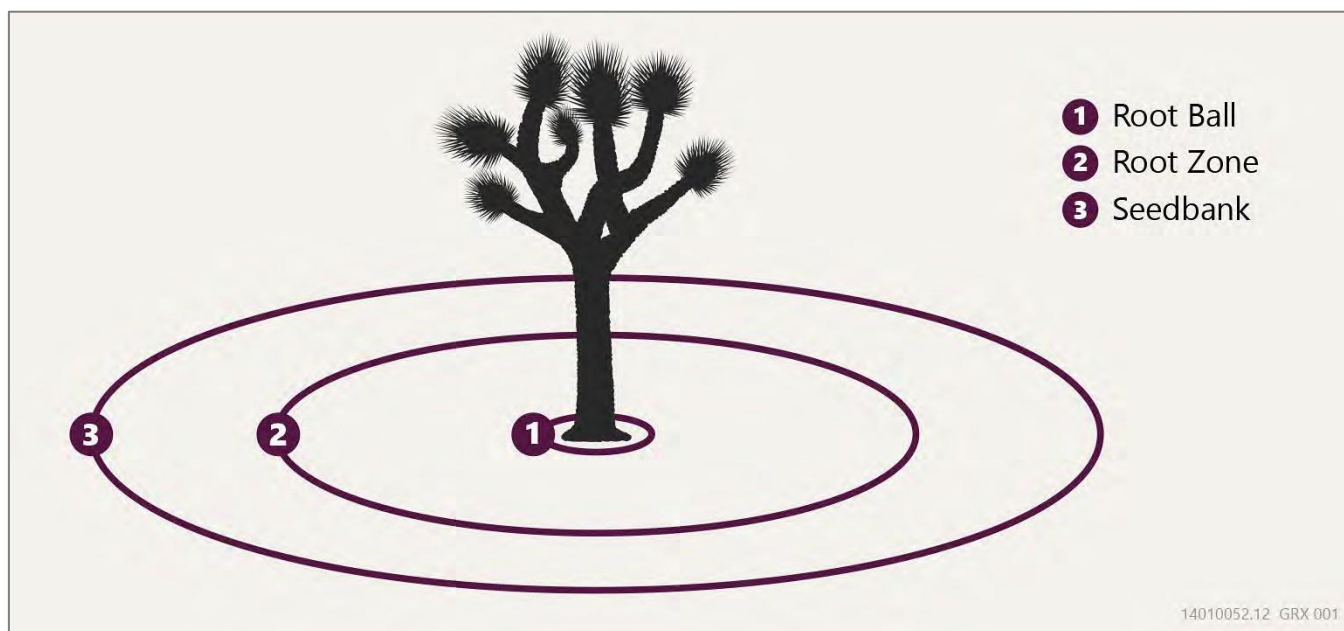
Project proponents (e.g., private and public entities) or agencies (e.g., local, state, and federal agencies) should prioritize retaining healthy western Joshua trees in place when planning a project. Mature/reproductive western Joshua trees in good condition, western Joshua trees in areas within and adjacent to contiguous suitable habitat, and western Joshua trees in habitat that is prioritized as having high value for conservation should be prioritized for retention in place. Signs a tree is healthy may include 60 percent or more living branches, minimal pest damage, recent unrestricted hard growth, recent flowering, and strong tree vigor (see Appendix E, "Relocation Guidelines and Protocols").

Action A&M 1.2: Implement Avoidance Buffers

When activities occur in the vicinity of western Joshua trees, project proponents, land managers, and agencies should implement buffers around western Joshua trees to avoid direct impacts (see Figure 5-1). In accordance with western Joshua tree primary seed dispersal distances, root growth, and salvage techniques, CDFW recommends buffers to avoid impacts for certain activities. The recommended minimum buffers for ground disturbance are:

- 56.7 meters (186 feet) from the base of a mature (i.e., sexually reproductive) western Joshua tree to avoid impacts on the primary seed dispersal zone,
- 15 meters (50 feet) from the base of a western Joshua tree 1 meter or greater in height or 7.5 meters (25 feet) from a western Joshua tree less than 1 meter (3.3 feet) in height to avoid damage to the root zone, and
- 0.61 meters (2 feet) from the base of a western Joshua tree 1 meter or greater in height or 0.3 meters (1 foot) less than 1 meter (3.3 feet) in height to avoid impacts on the root ball (i.e., the mass of soil that contains concentrated roots growing from the base of the stem of a western Joshua tree).





Note: Graphical representation of buffer zones (not to scale).

Source: Compiled by Ascent in 2024.

Figure 5-1 Western Joshua Tree Buffer Zones

These recommended buffers may be adjusted based on project-specific information and impacts. Additional information to consider when determining a buffer may include, but is not limited to:

- Density of trees within each project site as provided by the project census or other biological survey information.
- Location of a tree in relation to existing structures, such as fences, driveways, or other permanent structures.
- Intensity of proposed ground-disturbing activities (e.g., trenching and excavation impacts may be different than installing fencing).
- Duration of proposed impacts (temporary or permanent).
- Additional minimization measures to reduce impacts of buffer encroachment (e.g., supplemental watering, protecting roots and trees from access, or avoiding equipment damage, etc.).
- Geographic location (e.g., Is the project located in an urban area or within targeted climate refugia?).
- Life stage of tree, including reproductive stage. Branched trees are more likely to have produced seed and may have more extensive root structures.



Disturbances outside of these buffers are less likely to negatively affect the health and survival of the tree or its seeds. CDFW will continue to review the science including TEK on western Joshua tree during implementation of the Conservation Plan and update impact avoidance buffers as appropriate.

Action A&M 1.3: Avoid Impacts during Pesticide Application

Project proponents, landowners, land managers, and agencies should not apply pesticides on western Joshua trees and should implement best management practices that avoid pesticide drift onto western Joshua trees, nontarget native vegetation (e.g., nurse plants), pollinators, and seed-dispersing rodents. See Action A&M 1.3.1, "Avoid Impacts during Pesticide Application" in Appendix D for recommended best management practices related to this Action.

Action A&M 1.4: Avoid Impacts Related to Unauthorized Vehicle Use

Land managers should implement measures to prohibit unauthorized off-highway vehicle (OHV) and other vehicle use off designated trails in western Joshua tree habitat, such as by closing areas outside of designated routes with signage, vertical mulching, or installing other barriers. On public lands authorized for open, overland OHV recreation within western Joshua tree habitat, vehicle use rules should be modified to restrict travel to existing designated trails.

Action A&M 1.5: Avoid Impacts from Overgrazing

Land managers and regulatory agencies should prohibit grazing activities within western Joshua tree habitat if grazing is causing adverse effects. This can be accomplished by not renewing existing grazing leases, excluding portions of allotments with western Joshua trees, and installing property fences to avoid free range or trespass grazing. Feral, nonnative grazing animals (e.g., burros, horses) should be removed or relocated from western Joshua tree habitat. However, targeted grazing by prescribed herbivory may be useful to reduce annual invasive species (see Action A&M 2.7, "Minimize Impacts from Grazing Activities," and Appendix D, Action A&M 3.5.1, "Implement Fuel Treatments") (Berryman et al. 2023).

Action A&M 1.6: Avoid Impacts from Mineral Development

Reclamation of surface mining operations under the Surface Mining and Reclamation Act (SMARA) is recognized as achieving minimization and avoidance where the reclamation plan includes a revegetation plan addressing western Joshua trees, including without limitation, planting and/or relocation of western Joshua trees.



CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

Western Joshua Tree Conservation Plan



CalCIMA Suggested Amendment 4: Urgent Clarification Additions – Avoid Direct and Indirect Impacts

Add New Management Action 1.7 – On-Site Relocated or Preserved Trees

VOLUME I: WESTERN JOSHUA TREE CONSERVATION PLAN

Draft Presented to the California Fish and Game Commission

DECEMBER 2024



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MANAGEMENT ACTION A&M 1: AVOID DIRECT AND INDIRECT IMPACTS

When landscape-altering projects occur near western Joshua trees, avoidance buffers should be established to avoid direct impacts on aboveground and belowground western Joshua tree parts and their seedbank. Scientific information on western Joshua tree root ball width, root zone width, and seedbank width was used to inform direct impact avoidance buffers. Direct impact buffers for avoidance should apply to ground-disturbing activities, such as construction and resource extraction, fire control and suppression, and any other actions that could harm or kill western Joshua trees or seeds. The following actions provide activity-specific guidance for direct impact avoidance.

Action A&M 1.1: Retain Healthy Trees

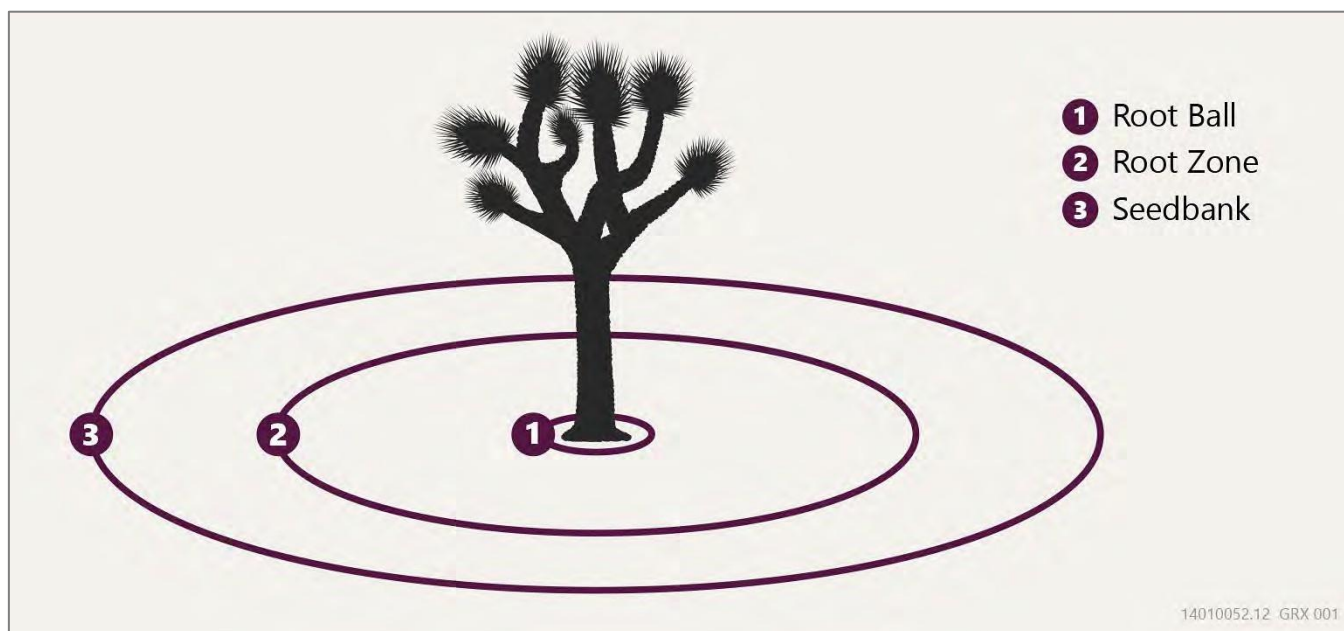
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Figure 5-1 Western Joshua Tree Buffer Zones

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Land managers should implement measures to prohibit unauthorized off-highway vehicle (OHV) and other vehicle use off designated trails in western Joshua tree habitat, such as by closing areas outside of designated routes with signage, vertical mulching, or installing other barriers. On public lands authorized for open, overland OHV recreation within western Joshua tree habitat, vehicle use rules should be modified to restrict travel to existing designated trails.

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Action A&M 1.7: On-Site Relocated or Preserved Trees

Western Joshua Trees that are relocated on-site and monitored and maintained consistent with the Western Joshua Tree Relocation Guidelines and Protocols provided by CDFW (presented in Appendix E) have a safe harbor for all non-lethal take of the tree as do trees identified as preserved on-site. Actions undertaken following the guidance of a certified arborist, a licensed landscape architect, or a biologist in support of the survival of preserved or on-site relocated trees shall presumptively demonstrate that any tree mortality was the result of unsuccessful preservation efforts, was unintentional, and that impacts to the tree had been properly avoided and minimized. These preserved and relocated trees by virtue of having already been subject to a voluntary mitigation fee under the Act are also fully mitigated in perpetuity.





May 08, 2025

Erika Zavaleta
President
California Fish and Game Commission
715 P Street, 16th Floor
Sacramento, CA 95814

Charlton “Chuck” Bonham
Director,
California Department of Fish and Wildlife
715 P Street
Sacramento, CA 95814

RE: CalcIMA Suggested Amendments WJTCP May 2025

Dear President Zavaleta and Director Bonham,

CalcIMA appreciates the opportunity to continue providing input on the Draft Western Joshua Tree Conservation Plan (Plan) to the California Fish and Game Commission (Commission). Respecting the urgency of the Commission’s timeline, we have developed focused amendment proposals that offer immediate clarity while establishing a foundation for future iterations of the Plan.

It is critical that we work collaboratively to realize the dual objectives of the Plan and the Western Joshua Tree Conservation Act. This vision was aptly captured by Assemblymember Juan Carrillo during the Assembly Floor discussion of SB 122:

“This bill is not just about preservation of a remarkable species, it is a testament to the ability to strike a delicate balance between safeguarding our natural heritage and providing a pathway for the much needed economic development that our district yearns for.”

WWW.CALCIMA.ORG

455 Capitol Mall, Ste. 210 | Sacramento, CA 95814 | (916) 554-1000
3890 Orange Street, Suite 167 | Riverside, CA 92501 | (951) 941-7981

Recognizing the time limitations and the breadth of unresolved questions, we respectfully submit four targeted amendments for your consideration:

1. Clarify the distinction between the Plan and the permitting process
2. Address avoidance and minimization for previously entitled homes and infrastructure
3. Introduce a avoidance and minimization framework for mineral development
4. Introduce a avoidance and minimization Safe Harbor for relocated and preserved trees

Amendment 1: Add Background on Permitting (Section 1.1.3)

The Department correctly notes that many Plan discussions have focused on permitting. To provide clarity and assist future users of the Plan, CalCIMA proposes the addition of a concise, high-level permitting background in a new Section 1.1.3. The proposed language, attached as **CalCIMA Suggested Amendment 1 – Permitting**, references both statute and the Department's website, and is intended to orient stakeholders needing permits to the proper locations and inform future dialogue on the Plan.

Amendment 2: Clarify Status of Existing Homes and Previously Entitled Projects

Much of the public testimony has centered on existing homes, infrastructure, and development projects that predate the Act. These entities, often conditioned under prior regulatory regimes such as the California Native Plant Act, face unique challenges with respect to avoidance and minimization requirements.

We propose that the Plan explicitly recognize these projects as having met their avoidance and minimization obligations under previously applicable laws, thereby leaving mitigation as the primary remaining requirement. To this end, we request the following addition to Section 5.2.1 ("Impact Avoidance and Minimization"):

"The first priority for conservation of western Joshua tree and its habitat is to avoid adverse [climate](#) impacts altogether. Although climate change stress may be impossible to avoid in the short-term, other impacts are avoidable, such as project-related degradation and destruction of habitat. [However, it should be recognized that existing homes, and public and private development projects, do not have the same avoidance and minimization opportunities as new projects brought forward after the Act's adoption. Further as identified previously in this plan, such existing homes and projects may have had avoidance and minimization measures imposed under prior laws \(e.g. California Native Plant Act\). Such existing projects and essential infrastructure authorized prior to the Act's adoption are recognized as achieving their avoidance and minimization obligations by virtue of meeting their adopted obligations at the time of project approval, authorization or legislative creation. For new projects,](#) Impact avoidance should be emphasized as the first preferred choice whenever feasible, especially in areas identified as climate refugia. Furthermore, the importance of avoiding take to western Joshua tree and its habitat has been emphasized during discussions with Tribes, in

particular the principle of not harming a tree unless it is absolutely critical for people (FIICPI, pers comm., 2024b).”

The language is attached as **CalCIMA Amendment 2 – Pre-Existing Projects**.

Amendment 3: Add Management Action 1.6 – Avoid Impacts from Mineral Development

The Plan should from the outset encourage mining operations to proactively support western Joshua tree conservation through reclamation efforts. Specifically, where mining reclamation plans under SMARA include western Joshua tree planting or relocation, such actions should be recognized as avoidance and minimization measures.

While not all mines will pursue this approach—due to differing end uses based on community and landowner needs those that do should be supported and encouraged. The proposed language, attached as **CalCIMA Amendment 3 – Mineral development**, reads as follows:

“Action A&M 1.6: Avoid Impacts from Mineral Development

Reclamation of surface mining operations under the Surface Mining and Reclamation Act (SMARA) is recognized as achieving minimization and avoidance where the reclamation plan includes a revegetation plan addressing western Joshua trees, including without limitation, planting and/or relocation of western Joshua trees. “

Amendment 4 – Avoidance and Minimization Safe Harbor for Relocated and Preserved Trees

Current statutory protections around relocation are inadequate and may unintentionally disincentivize preservation. As multiple witnesses testified, project proponents and homeowners are discouraged from maintaining relocated trees due to long-term economic burdens and the costs of recurring potential impacts.

There is an urgent need to create provisions that protect those who choose to preserve relocated trees, either on- or off-site, from future regulatory liability as well as other preserved trees on the site. Without such a mechanism, we risk incentivizing “take” over relocation—a perverse outcome that undermines the conservation goals of the Act.

This proposal, CalCIMA Suggested Amendment 4 – Relocated and Preserved Trees, aims to encourage tree preservation by removing the regulatory and financial disincentives currently in place to maintaining trees on site. The language is attached as **CalCIMA Amendment 4 – Relocated and Preserved Trees**.

In conclusion, CalCIMA believes that addressing these four key areas in the initial Plan is essential to:

- Provide necessary background for permitting,
- Establish clarity around the legal transition between prior and current requirements,
- Promote habitat restoration by mineral developers, and
- Create a Safe Harbor for Relocated and Preserved Trees.

We appreciate your consideration of these amendments and look forward to continued collaboration and discussion.

Respectfully,



Adam Harper
Senior Director of Policy
CalCIMA

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

Western Joshua Tree Conservation Plan



CalCIMA Suggested Amendment 1: Add Introduction Addition 1.1.3:
Background of the Western Joshua Tree Conservation Act – Permitting

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1.1.2 Background of the Western Joshua Tree Conservation Act

In October 2019, the Center for Biological Diversity submitted to the Commission a petition to list western Joshua tree as threatened under CESA. The petition identified climate change and wildland fires as the greatest threats to the persistence of the species. It also included habitat loss due to development; seed and plant predation, especially during drought; and competition with invasive species as other factors affecting the species' ability to survive and reproduce (Center for Biological Diversity 2019).

The Commission found, based in part on CDFW's evaluation of the petition and related recommendation, that there was sufficient information indicating that listing the species as threatened under CESA may be warranted. The Commission designated western Joshua tree a candidate species in September 2020 (CDFW 2022), conferring upon western Joshua tree temporary legal protection under CESA.

CDFW evaluated the petition and submitted a written status review report to the Commission in March 2022 (CDFW 2022). The report concluded that western Joshua tree is not likely to be in danger of becoming extinct throughout all, or a significant portion, of its range in the foreseeable future in the absence of special protection and management efforts required by CESA. In June 2022, the Commission considered the status review report and could not reach a decision regarding whether listing the species as threatened was warranted. In February 2023, while the Commission was still considering its final decision on the petition, legislation was introduced to protect western Joshua tree. In response to the legislative proposal, the Commission postponed further consideration of the petition under CESA.



Source: National Park Service.



In July 2023, the California State Legislature passed and the governor signed into law WJTCA, codifying as Chapter 11.5 of Division 2 of the California Fish and Game Code (commencing with Fish & G. Code, § 1927). WJTCA does the following:

- Provides protections for western Joshua tree by prohibiting the import, export, take, possession, purchase, or sale of any western Joshua tree in California (Fish & G. Code, § 1927.2, subd. (a)). Pursuant to Fish and Game Code Section 86, “take” means “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.”
- Allows CDFW to authorize take of western Joshua tree if certain conditions are met (Fish & G. Code, § 1927.3, subds. (a)-(b)).
- Authorizes CDFW to enter into a written agreement with any county or city to delegate to the county or city limited authority to authorize take of western Joshua tree if specified conditions are met (Fish & G. Code, § 1927.3, subd. (c)).
- Allows CDFW to authorize, by issuing permits, the removal or trimming of dead western Joshua trees or the trimming of live western Joshua trees that pose a risk to structures or public health and safety if certain conditions are met. (Fish & G. Code, § 1927.4, subd. (a)).
- Authorizes CDFW to enter into a written agreement with any county or city to delegate to the county or city limited authority to authorize the removal or trimming of dead western Joshua trees or the trimming of live western Joshua trees that pose a risk to structures or public health and safety if specified conditions are met (Fish & G. Code, § 1927.4, subd. (b)-(c)).
- Allows permittees to elect to pay specified fees in lieu of completing mitigation obligations (Fish & G. Code, § 1927.3, subd. (a)(3)).
- Establishes the Western Joshua Tree Conservation Fund (Conservation Fund). Any monies in the fund will be continuously appropriated to CDFW solely for the purposes of acquiring, conserving, and managing conservation lands and completing other activities to conserve western Joshua tree. (Fish & G. Code, § 1927.5, subd. (a)).
- Directs CDFW to develop and implement a conservation plan for western Joshua tree in collaboration with the Commission, other governmental agencies, California Native American tribes, and the public. (Fish & G. Code, § 1927.6, subd. (a)). CDFW must consult with California Native American tribes and include co-management principles (Fish & G. Code, § 1927.6, subd. (b)). CDFW must present the draft Conservation Plan at a public meeting of the Commission no later than December 31, 2024, and WJTCA calls for the Commission to take final action on the plan by June 30, 2025. (Fish & G. Code, § 1927.6, subd. (a)).
- Directs CDFW to submit an annual report assessing the conservation status of western



Joshua tree to the Commission and the State Legislature by January 31 of each year, starting in 2025 (Fish & G. Code, § 1927.7, subd. (a)).

- Requires CDFW to submit to the Commission an updated status review report by January 1, 2033, unless the Commission directs CDFW to complete it sooner (Fish & G. Code, § 1927.2, subd. (c)(2)(F) & 1927.9). The Commission shall consider determining whether the petitioned action to list western Joshua tree under CESA is warranted (Fish & G. Code, § 1927.9). In the interim, western Joshua tree is, and will remain, a candidate species under CESA.

1.1.3 Background of the Western Joshua Tree Conservation Act – Permitting

The Western Joshua Tree Conservation Act created an in-lieu fee Permitting system for homeowners and businesses taking western Joshua Tree's in California. The Act has a dual mission of enabling development and providing for conservation of the western Joshua Tree. The Act's provisions are separate from the conservation plan but provide important legislative direction for the plan to establish conservation tools and policies. In addition, the legislature enabled local governments to have the authority to grant western Joshua Tree Incidental Take permits for single-family residences, multifamily residences, accessory structures, and public works projects concurrent with providing project approvals.

In establishing this Direction, the legislature defined the permitting criteria developers and homeowners taking western Joshua Tree would need to meet in Fish and Game Code Subsection 1927.3 (a)(1)-(4):

“(a) The department may authorize, by permit, the taking of a western Joshua tree if all of the following conditions are met:

(1) The permittee submits to the department for its approval a census of all western Joshua trees on the project site, including size information and photographs, that categorize the western Joshua trees according to the following size classes:

(A) Less than one meter in height.

(B) One meter or greater but less than five meters in height.

(C) Five meters or greater in height.

(2) The permittee avoids and minimizes impacts to, and the taking of, the western Joshua tree to the maximum extent practicable. Minimization may include trimming, encroachment on root systems, relocation, or other actions that result in detrimental but nonlethal impacts to a western Joshua tree.

(3) The permittee mitigates all impacts to, and taking of, the western Joshua tree. The measures required to meet this obligation shall be roughly proportional in extent to the impact of the authorized taking of the species. When various measures are available to meet this obligation, the measures required shall maintain the permittee's objectives to the greatest extent possible. All required measures shall be capable of successful implementation. The permittee shall ensure adequate funding to implement the mitigation measures. In lieu of completing the mitigation obligation on its own, the permittee may elect to satisfy this mitigation obligation by paying fees, pursuant to the fee schedule in subdivision (d) or (e), for deposit into the fund.



(4) (A) The department may include permit conditions that require the permittee to relocate one or more of the western Joshua trees. If relocation is required, the permittee shall implement measures to assist the survival of relocated trees, and to comply with any other reasonable measures required by the department to facilitate the successful relocation and survival of the western Joshua trees. These relocation measures shall include, but are not limited to, all of the following:

- (i) A requirement that the relocated western Joshua tree is placed in a location and with proper orientation to improve its survival.
- (ii) A requirement that western Joshua trees are relocated at a time that maximizes their survival when feasible.
- (iii) A requirement that a desert native plant specialist be onsite to oversee relocation."

The Department Maintains a permitting website available at the following location (<https://wildlife.ca.gov/Conservation/Environmental-Review/WJT/Permitting/WJTCA-ITP>). Members of the public interested in applying for permits can find the necessary documents and forms at this website.

1.2 CONSERVATION PLAN VISION, PURPOSE, AND OBJECTIVES

1.2.2 Vision

The vision of the Conservation Plan is to prevent the extinction of western Joshua tree in the wild, preserve functioning ecosystems that support western Joshua tree, and maintain sustainable populations of western Joshua tree in California over the long term, such that listing the species under CESA will not be warranted.

1.2.3 Purpose

The purpose of the Conservation Plan is to fulfill the requirements articulated in Fish and Game Code Section 1927.6. Upon approval by the Commission, the Conservation Plan will guide the conservation of western Joshua tree in California by focusing on the most urgent and important management actions, as informed by science including TEK; collaboration with California Native American tribes; collaboration with federal, state, and local government agencies; and public feedback.

1.2.4 Objectives

The following objectives are identified in WJTCA:

- Describe management actions necessary to conserve western Joshua tree and objective, measurable criteria to assess the effectiveness of such actions (Fish & G. Code, §1927.6, subd. (a)).



- Provide guidance for the avoidance and minimization of impacts to western Joshua trees (Fish & G. Code, § 1927.6, subd. (a)).
- Include in the Conservation Plan protocols for the successful relocation of western Joshua trees and provide for the relocation of western Joshua trees to tribal lands upon a request from a Tribe (Fish & G. Code, § 1927.6, subds. (a)-(b)).
- Include co-management principles and incorporate Traditional Ecological Knowledge into the Conservation Plan (Fish & G. Code, § 1927.6, subd. (b)).
- Prioritize actions and acquiring and managing lands that are identified as appropriate for western Joshua tree conservation (Fish & G. Code, § 1927.6, subd. (c)).

1.2.5 Geographic Focus Area

The Conservation Plan includes a geographic focus area for conservation activities encompassing 37,749 square kilometers (9,327,981 acres, or 14,575 square miles) in southeastern California. It reflects the general location of currently occupied western Joshua tree habitat plus an 8-kilometer (5-mile) buffer in California to encompass areas that could be suitable for implementation of conservation management actions (Figure 1-2). However, application of WJTCA and implementation of the management actions described in the Conservation Plan (see Chapter 5, "Conservation Management Actions and Effectiveness Criteria") are not limited to the geographic focus area. In addition, the geographic focus area may be modified through amendment of this Conservation Plan based on evolving information regarding current and future western Joshua tree habitat resulting from ongoing scientific analysis.



CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

Western Joshua Tree Conservation Plan



CalCIMA Suggested Amendment 2: – Impact Avoidance and Minimization –
Existing Homes and Public and Private Projects

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Draft Presented to the California Fish and Game Commission

DECEMBER 2024



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5.2.1 Impact Avoidance and Minimization

The first priority for conservation of western Joshua tree and its habitat is to avoid adverse [climate](#) impacts altogether. Although climate change stress may be impossible to avoid in the short- term, other impacts are avoidable, such as project-related degradation and destruction of habitat. [However, it should be recognized that existing homes, and public and private development projects, do not have the same avoidance and minimization opportunities as new projects brought forward after the Act's adoption. Further as identified previously in this plan, such existing homes and projects may have had avoidance and minimization measures imposed under prior laws \(e.g. California Native Plant Act\). Such existing projects and essential infrastructure authorized prior to the Act's adoption are recognized as achieving their avoidance and minimization obligations by virtue of meeting their adopted obligations at the time of project approval, authorization or legislative creation. For new projects,](#) Impact avoidance should be emphasized as the first preferred choice whenever feasible, especially in areas identified as climate refugia. Furthermore, the importance of avoiding take to western Joshua tree and its habitat has been emphasized during discussions with Tribes, in particular the principle of not harming a tree unless it is absolutely critical for people (FII CPI, pers comm., 2024b).

When complete avoidance cannot be achieved, efforts should be made to minimize impacts on western Joshua tree and its habitat, and the presence of tribal cultural monitors and a trained arborist to minimize these impacts are encouraged (FII CPI, pers. comm., 2024a). Minimization may include efforts to reduce the number of trees and seeds taken; the area of habitat that is lost or degraded; the severity of impacts on individual trees; impacts on other organisms on which western Joshua tree depends; and indirect impacts on trees, seeds, habitats, and other ecologically related organisms.

The avoidance and minimization actions in this section could be voluntarily adopted and implemented by project proponents and land managers, incorporated into project approvals by local governments and regulatory agencies, or incorporated into voluntary, cooperative agreements between relevant agencies, organizations, and other parties. The Western Joshua Tree Conservation Act (WJTCA) requires the avoidance and minimization of impacts on western Joshua tree to the maximum extent practicable as a condition of obtaining a WJTCA incidental take permit (ITP) (Fish & G. Code, § 1927.3, subd. (a)(2)). WJTCA also states that the Conservation Plan shall include guidance for the avoidance and minimization of impacts on western Joshua trees and protocols for the successful relocation of western Joshua trees (Fish & G. Code, § 1927.6, subd. (a)).

The impact avoidance and minimization (A&M) management actions listed in this chapter are intended to promote the survival of existing western Joshua trees and the protection of their



habitat where they could potentially be harmed by development, human activities, and natural hazards. Impacts on western Joshua trees could occur from urban development, infrastructure construction, resource extraction, damage by people and vehicles, and other forms of landscape alteration (see Section 4.3). When these activities affect the root systems or the seedbanks of western Joshua tree, the survival of populations can be compromised.



CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

Western Joshua Tree Conservation Plan



CalCIMA Suggested Amendment 3: Additions – Avoid Direct and Indirect Impacts
Add New Management Action 1.6 – Avoid Impacts from Mineral Development

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MANAGEMENT ACTION A&M 1: AVOID DIRECT AND INDIRECT IMPACTS

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Action A&M 1.1: Retain Healthy Trees

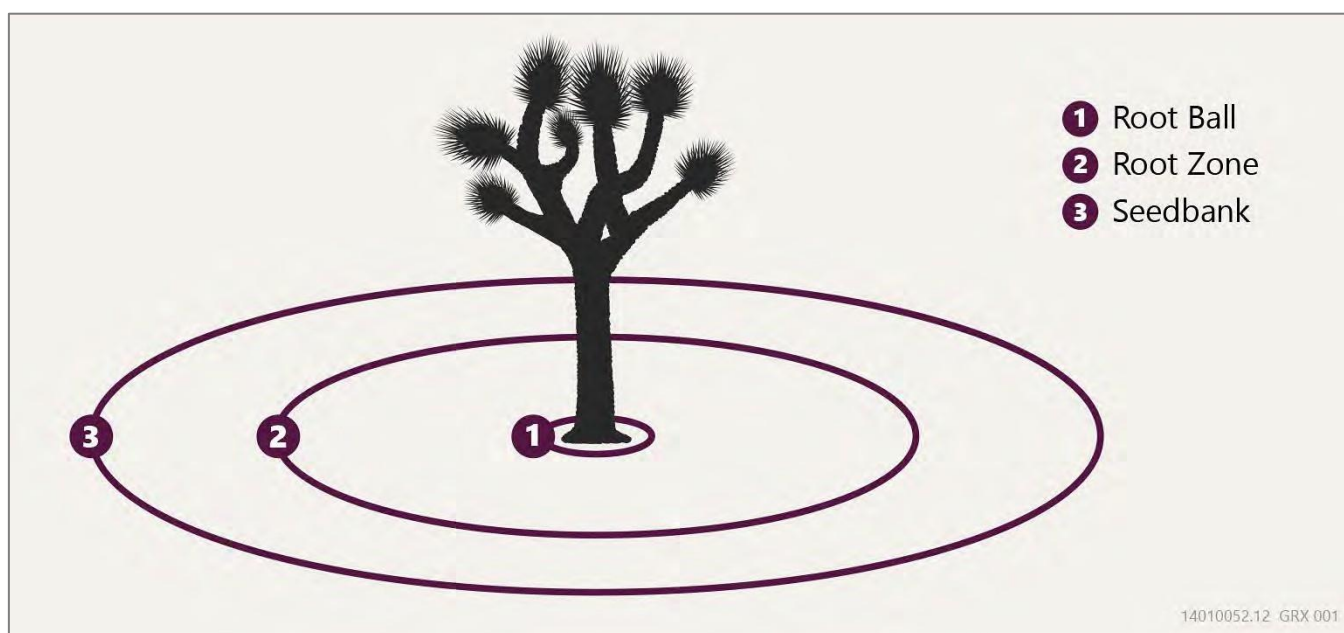
Project proponents (e.g., private and public entities) or agencies (e.g., local, state, and federal agencies) should prioritize retaining healthy western Joshua trees in place when planning a project. Mature/reproductive western Joshua trees in good condition, western Joshua trees in areas within and adjacent to contiguous suitable habitat, and western Joshua trees in habitat that is prioritized as having high value for conservation should be prioritized for retention in place. Signs a tree is healthy may include 60 percent or more living branches, minimal pest damage, recent unrestricted hard growth, recent flowering, and strong tree vigor (see Appendix E, "Relocation Guidelines and Protocols").

Action A&M 1.2: Implement Avoidance Buffers

When activities occur in the vicinity of western Joshua trees, project proponents, land managers, and agencies should implement buffers around western Joshua trees to avoid direct impacts (see Figure 5-1). In accordance with western Joshua tree primary seed dispersal distances, root growth, and salvage techniques, CDFW recommends buffers to avoid impacts for certain activities. The recommended minimum buffers for ground disturbance are:

- 56.7 meters (186 feet) from the base of a mature (i.e., sexually reproductive) western Joshua tree to avoid impacts on the primary seed dispersal zone,
- 15 meters (50 feet) from the base of a western Joshua tree 1 meter or greater in height or 7.5 meters (25 feet) from a western Joshua tree less than 1 meter (3.3 feet) in height to avoid damage to the root zone, and
- 0.61 meters (2 feet) from the base of a western Joshua tree 1 meter or greater in height or 0.3 meters (1 foot) less than 1 meter (3.3 feet) in height to avoid impacts on the root ball (i.e., the mass of soil that contains concentrated roots growing from the base of the stem of a western Joshua tree).





Note: Graphical representation of buffer zones (not to scale).

Source: Compiled by Ascent in 2024.

Figure 5-1 Western Joshua Tree Buffer Zones

These recommended buffers may be adjusted based on project-specific information and impacts. Additional information to consider when determining a buffer may include, but is not limited to:

- Density of trees within each project site as provided by the project census or other biological survey information.
- Location of a tree in relation to existing structures, such as fences, driveways, or other permanent structures.
- Intensity of proposed ground-disturbing activities (e.g., trenching and excavation impacts may be different than installing fencing).
- Duration of proposed impacts (temporary or permanent).
- Additional minimization measures to reduce impacts of buffer encroachment (e.g., supplemental watering, protecting roots and trees from access, or avoiding equipment damage, etc.).
- Geographic location (e.g., Is the project located in an urban area or within targeted climate refugia?).
- Life stage of tree, including reproductive stage. Branched trees are more likely to have produced seed and may have more extensive root structures.



Disturbances outside of these buffers are less likely to negatively affect the health and survival of the tree or its seeds. CDFW will continue to review the science including TEK on western Joshua tree during implementation of the Conservation Plan and update impact avoidance buffers as appropriate.

Action A&M 1.3: Avoid Impacts during Pesticide Application

Project proponents, landowners, land managers, and agencies should not apply pesticides on western Joshua trees and should implement best management practices that avoid pesticide drift onto western Joshua trees, nontarget native vegetation (e.g., nurse plants), pollinators, and seed-dispersing rodents. See Action A&M 1.3.1, "Avoid Impacts during Pesticide Application" in Appendix D for recommended best management practices related to this Action.

Action A&M 1.4: Avoid Impacts Related to Unauthorized Vehicle Use

Land managers should implement measures to prohibit unauthorized off-highway vehicle (OHV) and other vehicle use off designated trails in western Joshua tree habitat, such as by closing areas outside of designated routes with signage, vertical mulching, or installing other barriers. On public lands authorized for open, overland OHV recreation within western Joshua tree habitat, vehicle use rules should be modified to restrict travel to existing designated trails.

Action A&M 1.5: Avoid Impacts from Overgrazing

Land managers and regulatory agencies should prohibit grazing activities within western Joshua tree habitat if grazing is causing adverse effects. This can be accomplished by not renewing existing grazing leases, excluding portions of allotments with western Joshua trees, and installing property fences to avoid free range or trespass grazing. Feral, nonnative grazing animals (e.g., burros, horses) should be removed or relocated from western Joshua tree habitat. However, targeted grazing by prescribed herbivory may be useful to reduce annual invasive species (see Action A&M 2.7, "Minimize Impacts from Grazing Activities," and Appendix D, Action A&M 3.5.1, "Implement Fuel Treatments") (Berryman et al. 2023).

Action A&M 1.6: Avoid Impacts from Mineral Development

Reclamation of surface mining operations under the Surface Mining and Reclamation Act (SMARA) is recognized as achieving minimization and avoidance where the reclamation plan includes a revegetation plan addressing western Joshua trees, including without limitation, planting and/or relocation of western Joshua trees.



CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

Western Joshua Tree Conservation Plan



CalCIMA Suggested Amendment 4: Urgent Clarification Additions – Avoid Direct and Indirect Impacts

Add New Management Action 1.7 – On-Site Relocated or Preserved Trees

VOLUME I: WESTERN JOSHUA TREE CONSERVATION PLAN

Draft Presented to the California Fish and Game Commission

DECEMBER 2024



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MANAGEMENT ACTION A&M 1: AVOID DIRECT AND INDIRECT IMPACTS

When landscape-altering projects occur near western Joshua trees, avoidance buffers should be established to avoid direct impacts on aboveground and belowground western Joshua tree parts and their seedbank. Scientific information on western Joshua tree root ball width, root zone width, and seedbank width was used to inform direct impact avoidance buffers. Direct impact buffers for avoidance should apply to ground-disturbing activities, such as construction and resource extraction, fire control and suppression, and any other actions that could harm or kill western Joshua trees or seeds. The following actions provide activity-specific guidance for direct impact avoidance.

Action A&M 1.1: Retain Healthy Trees

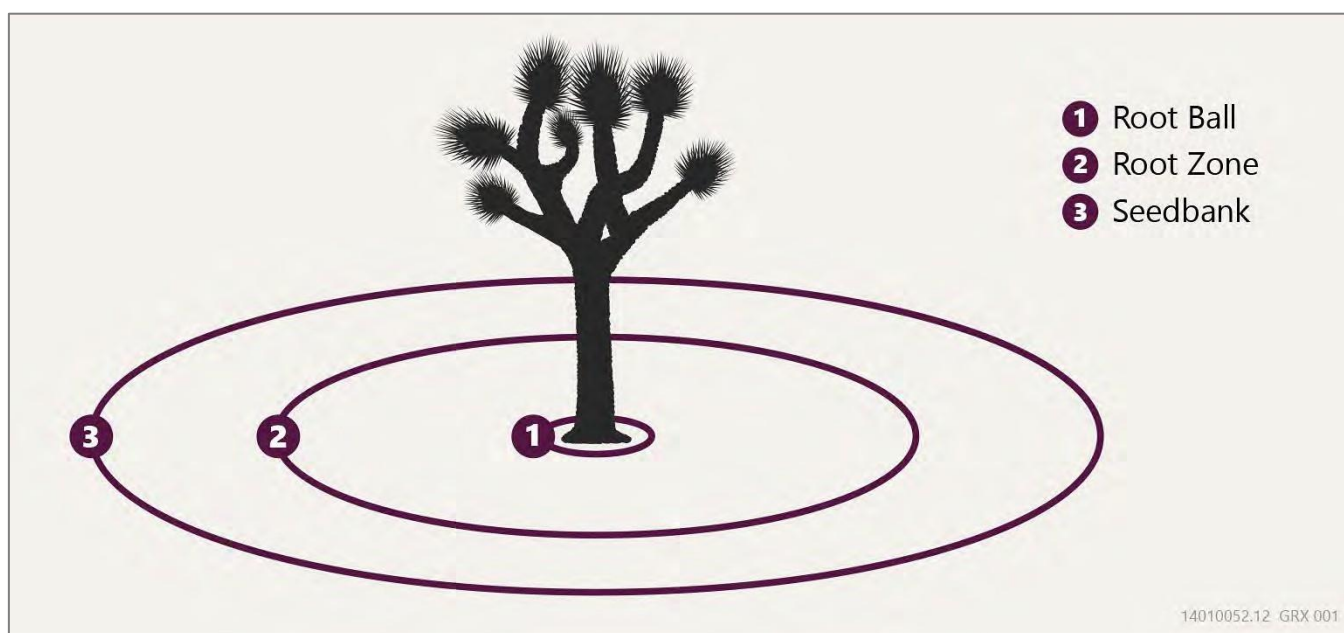
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Note: Graphical representation of buffer zones (not to scale).

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Figure 5-1 Western Joshua Tree Buffer Zones

These recommended buffers may be adjusted based on project-specific information and impacts. Additional information to consider when determining a buffer may include, but is not limited to:

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- Location of a tree in relation to existing structures, such as fences, driveways, or other permanent structures.
- Intensity of proposed ground-disturbing activities (e.g., trenching and excavation impacts may be different than installing fencing).
- Duration of proposed impacts (temporary or permanent).
- Additional minimization measures to reduce impacts of buffer encroachment (e.g., supplemental watering, protecting roots and trees from access, or avoiding equipment damage, etc.).
- Geographic location (e.g., Is the project located in an urban area or within targeted climate refugia?).
- Life stage of tree, including reproductive stage. Branched trees are more likely to have produced seed and may have more extensive root structures.



Disturbances outside of these buffers are less likely to negatively affect the health and survival of the tree or its seeds. CDFW will continue to review the science including TEK on western Joshua tree during implementation of the Conservation Plan and update impact avoidance buffers as appropriate.

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Land managers should implement measures to prohibit unauthorized off-highway vehicle (OHV) and other vehicle use off designated trails in western Joshua tree habitat, such as by closing areas outside of designated routes with signage, vertical mulching, or installing other barriers. On public lands authorized for open, overland OHV recreation within western Joshua tree habitat, vehicle use rules should be modified to restrict travel to existing designated trails.

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Land managers and regulatory agencies should prohibit grazing activities within western Joshua tree habitat if grazing is causing adverse effects. This can be accomplished by not renewing existing grazing leases, excluding portions of allotments with western Joshua trees, and installing property fences to avoid free range or trespass grazing. Feral, nonnative grazing animals (e.g., burros, horses) should be removed or relocated from western Joshua tree habitat. However, targeted grazing by prescribed herbivory may be useful to reduce annual invasive species (see Action A&M 2.7, "Minimize Impacts from Grazing Activities," and Appendix D, Action A&M 3.5.1, "Implement Fuel Treatments") (Berryman et al. 2023).

Action A&M 1.7: On-Site Relocated or Preserved Trees

Western Joshua Trees that are relocated on-site and monitored and maintained consistent with the Western Joshua Tree Relocation Guidelines and Protocols provided by CDFW (presented in Appendix E) have a safe harbor for all non-lethal take of the tree as do trees identified as preserved on-site. Actions undertaken following the guidance of a certified arborist, a licensed landscape architect, or a biologist in support of the survival of preserved or on-site relocated trees shall presumptively demonstrate that any tree mortality was the result of unsuccessful preservation efforts, was unintentional, and that impacts to the tree had been properly avoided and minimized. These preserved and relocated trees by virtue of having already been subject to a voluntary mitigation fee under the Act are also fully mitigated in perpetuity.





May 29, 2025

Erika Zavaleta
President
California Fish and Game Commission
715 P Street, 16th Floor
Sacramento, CA 95814

RE: CalCIMA Comments WJTCP June 2025 Commission Meeting

Dear President Zavaleta and Members of the Fish and Game Commission,

CalCIMA appreciates the opportunity to provide this consolidated feedback on the Draft Western Joshua Tree Conservation Plan (Plan). This letter references our four previous submissions, which collectively underscore the importance of preserving the iconic Western Joshua Tree while balancing California's economic and infrastructure development needs. The western Joshua Tree is a species that currently occupies 1.8 million acres of ecologically core and ecologically intact habitat, equal to 25% of the total developed acreage in California and number between 3 and 9 million. The public deserves a carefully crafted policy to ensure we do not overtax critical minerals for renewable and other clean energy and essential infrastructure development while adapting to climate change.

Across our prior comments, we have highlighted critical concerns with the Plan's current form, including its incompleteness, the absence of clear, measurable conservation objectives, and the unrealistic scope of proposed land acquisitions—over 479,000 acres by 2033. We had hoped to update such figures through review of a complete plan, but such a plan has yet to be provided despite the fact comments on the plan closes today, May 29, 2025, just two weeks before the commission is slated to act.

We have not received confirmation that the amendments we submitted in our comments dated May 08, 2025, have been implemented. We further haven't seen to what extent our other concerns with the incomplete plan or concepts for improvement have or have not been implemented. While homeowners have appropriately been treated to a relocation exemption in the updated relocation guidelines published yesterday, the scientific justification for such has not been included for others to benefit from as well. Perhaps it is in the plan.

Our key recommendations, detailed in our earlier letters, urge the Commission and California Department of Fish and Wildlife (CDFW) to:

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3890 Orange Street, Suite 167 | Riverside, CA 92501 | (951) 941-7981

- Define clear, measurable conservation targets aligned with the legislature’s directive to maintain the species’ status without requiring endangered listing.
- Ground land conservation goals in sound ecological and economic data, ensuring realistic, achievable outcomes.
- Leverage existing public lands and conservation frameworks to focus efforts efficiently.
- Provide transparent, detailed information on funding, staffing, and permitting processes necessary to support Plan implementation.

The Western Joshua Tree Conservation Act reflects a balanced legislative intent—to conserve this resilient species while allowing for responsible economic growth. It is imperative that the Conservation Plan reflects this balance through clarity, completeness, and practical implementation strategies. We encourage commissioners to review and incorporate into the plan the four amendments CalCIMA suggested if the Department did not, they.

1. Clarify the distinction between the Plan and the permitting process.
2. Address avoidance and minimization for previously entitled homes and infrastructure.
3. Introduce an avoidance and minimization framework for mineral development.
4. Introduce an avoidance and minimization Safe Harbor for relocated and preserved trees.

We respectfully urge the Commission to ensure the Plan is fully developed, financially and operationally supported, and transparent before final adoption. CalCIMA remains committed to constructive collaboration to achieve a conservation strategy that protects California’s natural heritage and supports its communities. We have attached our May 08, 2025, letter for reference.

Thank you for your consideration.

Respectfully,



Adam Harper
Senior Director of Policy
California Construction and Industrial Materials Association

CalCIMA Attachment

CalPortland EXHIBIT 2 From June 6

Submitted July 10 Proposed Restoration Amendments

Restoration Amendment Locations(s)

**RA Page 10
RA Page 15
RA Page 17
RA Page 32
RA Page 65**



5 CONSERVATION MANAGEMENT ACTIONS AND EFFECTIVENESS CRITERIA

Management actions necessary to conserve western Joshua tree and objective, measurable criteria to assess the effectiveness of such actions are the heart of the Conservation Plan. This chapter describes the breadth of actions that are likely to be necessary to conserve western Joshua tree and provides a conceptual framework for how to use these actions to achieve the vision, purpose, and objectives of the Conservation Plan described in Chapter 1, "Introduction."

"Wilderness is not a luxury but a necessity of the human spirit."
— Edward Abbey

The management actions are guidelines for conservation and the criteria help define the effectiveness of the actions; they do not create new statutory or regulatory mandates. Nevertheless, the management actions in this chapter can be used in several ways. They can be voluntarily adopted and implemented by project proponents, land managers, and philanthropists to help the species or to prevent the species from being harmed. California Native American tribes (Tribes) and the State can work together to co-manage conservation consistent with the Conservation Plan's guidance. The management actions can also be incorporated into project approvals by local governments and regulatory agencies that authorize projects in western Joshua tree's range in California. Researchers can implement management actions related to research, and private citizens and other organizations can implement actions related to education and awareness. Western Joshua tree conservation will require action from many different people and organizations.



Section 5.1 introduces the sources of information behind western Joshua tree conservation. Section 5.2 includes descriptions of management actions in five categories:

- Impact avoidance and minimization,
- Land conservation and management,
- Tribal co-management,
- Research to inform long-term conservation, and
- Education and awareness.

Section 5.3 provides objective, measurable criteria to assess the effectiveness of management actions, the Conservation Plan, and the Western Joshua Tree Conservation Fund (Conservation Fund) for conservation of western Joshua tree in California. Section 5.4 is intended to guide which management actions may be most impactful for conservation in specific western Joshua tree management units.

5.1 SCIENCE INCLUDING TRADITIONAL ECOLOGICAL KNOWLEDGE TO INFORM MANAGEMENT ACTIONS

The Conservation Plan is informed by science including Traditional Ecological Knowledge (TEK). Integration of TEK with other sources of science has been shown to lead to more sustainable, productive, and locally accepted natural resource management systems worldwide (Bussey et al. 2016). Please refer to Chapter 3, "Traditional Values and Uses of Western Joshua Tree by California Native American Tribes," for a description of California Native American uses, values, and TEK related to western Joshua tree. Refer to Section 5.2.3, below, for management actions facilitating co-equal collaboration between the State and Tribes.

The critical role of science supporting effective management and conservation of the species is reflected in the seven-step approach to conservation in the face of climate change described by Smith et al. (2023), as summarized below.

1. **Identify genetic structure and distinct populations.** The first step toward conservation is identifying genetic structure and distinct populations. Genomic (i.e., study of genes) tools can provide accurate estimates regarding populations, such as effective population size, demographic history, and population structure, which are all important for successful conservation efforts (Hohenlohe et al. 2021). Genetic data of populations can be used to identify distinct populations, as well as genes that may be responsible for adaptation to changing environments, highlighting populations that may require different management strategies (Hohenlohe et al. 2021). As discussed in Section 4.1.1, "Range and Distribution," recent research suggests that western Joshua tree populations have significant genetic differences (Smith et al. 2021) that have the potential to respond



differently to climate change (Smith et al. 2023). Population genetic data can also assist in identifying populations with high genetic diversity, which can translate to greater potential for adapting to environmental change (Smith et al. 2023).

2. **Develop species distribution models and identify climate refugia.** Developing species distribution and demographic models for distinct populations using high-quality data that document where western Joshua trees occur (i.e., occurrence data) is important for accurately identifying climate refugia that should be given high priority for protection. These models are imperative for successful species conservation (Morelli et al. 2016; Morelli et al. 2020) and will help determine the degree that climate change poses a threat to a species (Jones et al. 2016). The several species distribution models that have been developed for Joshua tree resulted in very different predictions of suitable habitat distribution by the end of the 21st century (Smith et al. 2023). The wide range of results from these models is a byproduct of different methods used and differences in input data (Smith et al. 2023). For species distribution models to be reliable, accurate occurrence data must be used, then multiple independent data sources must be used to validate models (Sweet et al. 2019). Incorporating physiological (i.e., how plants function) data can also improve the accuracy of species distribution models (Buckley et al. 2010; Evans et al. 2015). Species distribution models can help predict areas of future habitat for a species; however, these models need to include realistic estimates of the species' ability to disperse and access new areas (Bateman et al. 2013). Species distribution models may improve their ability to predict future species distributions under climate change, by incorporating the adaptive potential of populations (Bush et al. 2016; Razgour et al. 2019). Models should focus on fine scale distribution as genetic information becomes available and distinct populations are identified since they may require different management strategies (Hohenlohe et al. 2021).

An important step toward developing accurate range-wide species distribution and climate refugia models for western Joshua tree has been completed with new species distribution data recently published by Esque et al. (2023). These models used remote sensing and ground-validation methodologies to document western Joshua tree presence and absence throughout the species range. This unprecedented dataset has been used to develop climate refugia models that include identification of possible future habitat that is within dispersal range of its current distribution, but that is not currently populated by western Joshua tree (Shryock et al. forthcoming). These data informed management unit delineation in Section 4.4, "Management Units," land conservation and management actions in Section 5.2.2 (below), and management unit recommendations in Section 5.4 (below).



3. **Validate potential refugia.** Once refugia models have been developed, the next step is to validate the models using demographic data to assess population growth or decline and other data sources to confirm that the potential refugia will be viable in the long term (Sweet et al. 2019). Demographic data can have considerable influence on predicted future species distributions and in validating predicted climate refugia (Merow et al. 2014). Spatial patterns of recruitment can also be used as a predictor of potential climate refugia, which could be compared to predictions based on climate models (Barrows et al. 2020a, 2020b). In addition, incorporating information on the adaptive potential of populations into species distribution models may improve model accuracy for future distribution predictions under climate change (Bush et al. 2016; Razgour et al. 2019).
4. **Assess adaptive genetic variation.** After genetic structure and distinct populations have been identified, the next step is to assess adaptive genetic variation within populations using either association genetics (i.e., identification of genes or genetic markers with underlying important traits) or ideally, experimental approaches coupled with genomic data (Smith et al. 2023). Conservation genetics should focus on the protection of adaptive genetic variation to help manage species that are dealing with climate change (Razgour et al. 2019). Adaptive genetic variation directly affects a species' ability to respond to environmental factors, such as heat stress and drought, highlighting the importance of conserving adaptive genetic variation and not just overall genetic variation (Smith et al. 2023). Landscape genomics (i.e., study of how genetic variation is distributed between populations across a species range) and association genetics can identify genes or genetic markers that are likely the basis for local adaptation to climate variation in current populations (Lotterhos and Whitlock 2015).



Source: Jeb Bjerke, California Department of Fish and Wildlife.

Genome-wide association studies looking at seedling survival, growth, and specific ecophysiological traits (i.e., physiological processes crucial for interacting with the environment, including gas exchange and water regime) can potentially identify genes underlying climate adaptation (Smith et al. 2023), which can be used to predict these traits in natural populations (Swarts et al. 2017). Studies in common gardens are



particularly important because they can be used to validate the adaptive value of identified genes or genetic markers and reveal underlying physiological mechanisms (Weigel and Nordborg 2015). Common garden experiments are indoor or outdoor plantings of species or populations collected from multiple distinct geographic locations, grown together under shared conditions (Schwinning et al. 2022).

Current common garden research within the US Geological Survey's Mojave Desert Common Gardens network uses Joshua tree seedlings from different locations that are planted outside in various climates throughout the Mojave Desert and in the lab. This research can help determine the extent to which different populations of Joshua tree are adapted to certain local climate conditions and identify the physiological mechanisms by which Joshua trees tolerate drought and heat stress (Smith et al. 2023). Another effort to identify Joshua tree genes and genetic markers associated with specific climate variables is supported by Revive and Restore, a leading wildlife conservation nonprofit organization, to sequence the whole genome from individual Joshua trees sampled across the range of climates in which the species occurs (Smith et al. 2023).

Once climate-associated genes or genetic markers have been identified, the next step will be genotyping (i.e., analyzing genome sequence data) wild populations of Joshua tree to predict long-term potential of adaptation to warming climates (Smith et al. 2023). Populations identified to have the highest probability of adaptation and survival should be prioritized for conservation (Smith et al. 2023).

5. **Identify high priority areas for protection.** Informed by the results of the four steps described above, the next step will be to identify locations within each population that should have the highest priority for protection (Morelli et al. 2020). Determining whether there are any areas slated for development that contain climate refugia and then taking steps to try to protect these areas will be important (Smith et al. 2023). A Mojave Desert ecoregional assessment (Randall et al. 2010; Parker et al. 2018), which identified conservation value for a large portion of the western Joshua tree range, can also be used to help prioritize conservation lands. Even areas that have been identified as highly degraded may still have conservation value if potential refugia is present (Smith et al. 2023). In addition, some areas that have been identified as ecologically intact may experience severe damage due to climate change and, therefore, may have little long-term conservation value (Smith et al. 2023).

Identification of high priority areas for protection to further the conservation of western Joshua tree will be completed as needed by CDFW and partners and will be supported by information produced by the research and tribal communities. While it would be ideal to complete steps 1 through 4 before prioritizing areas for protection, CDFW must



begin work to conserve western Joshua tree immediately and must therefore begin initial prioritization of areas for protection based on the best, currently available information. As additional information generated from steps 1 through 4 becomes available, CDFW will incorporate it into decision making and future updates of the Conservation Plan.

An initial land-prioritization scheme guided by Smith et al. (2023) has been developed by CDFW (described in Section 5.2.2) to help identify high priority areas for protection.

6. **Protect priority areas while accommodating compatible existing and emerging land uses.** Informed by the results of step 5, high priority areas should be protected while accommodating existing and emerging land uses that are compatible with the overall western Joshua tree conservation strategy (Henson et al. 2018). This work should be done in collaboration with California Native American tribes, state and federal government agencies, local jurisdictions, nongovernmental organizations (NGOs), the public, and affected businesses and property owners. The Mojave Desert region is the homeland territory of many California Native American tribes and is made up of a diverse patchwork of land owned by tribes, federal, state, and local land ownerships and jurisdictions, including the National Park Service (NPS), the Bureau of Land Management (BLM), the US Forest Service (USFS), as well as state and county reserves (Smith et al. 2023). Focus should be on landscape-scale conservation criteria while also engaging with the public to create broad public support (Smith et al. 2023). CDFW will use the Conservation Fund to conserve priority lands.
7. **Identify other impacts and develop management to mitigate them.** The last step is to identify additional factors beyond climate change that could negatively affect the persistence of western Joshua tree (e.g., invasive species, incompatible recreation, inappropriate fire frequencies) and management efforts, including traditional cultural practices, to mitigate these impacts (Morelli et al. 2020). Other impacts on the persistence of western Joshua tree are identified in Section 4.3, "Key Stressors, Threats, and Conservation Issues," and mitigation approaches for them are presented in Section 5.2.1.





Source: Anna Cirimele, National Park Service.

There are marked challenges with identifying and protecting existing populations that meet all the necessary criteria for conservation. Some scientists have suggested assisted migration (i.e., human-assisted movement of species in response to climate change) as a management strategy for species limited by dispersal ability, such as Joshua tree (Cole et al. 2011; Williams and Dumroese 2013). However, some ecologists have strongly criticized assisted migration for its potential to promote invasive species, spread pathogens, and disrupt ecosystems (Ricciardi and Simberloff 2009). Assisted migration may have a high rate of failure if species or populations are strongly adapted to local conditions that are not present at the introduction site (Vitt et al. 2010). Although assisted migration has been suggested for Joshua trees, Smith et al. (2023) do not advise this method. This is partially due to suspected high costs and logistical planning needed for success, as well as this approach not preserving intact, functional ecosystems. In addition to what is outlined in Smith et al. (2023), given that there are climate refugia modeled within the current range of western Joshua tree (Shryock et al. forthcoming), it would be easier to protect the trees where they are currently growing compared with moving them to new places outside the current range. If assisted migration were employed, these areas could still need protection, the trees could need support to establish new self-sustaining populations, and the presence of tribal cultural monitors and a trained arborist may be encouraged (FII CPI, pers. comm. 2024b). More research is needed on assisted migration for western Joshua tree, which is addressed in Action R&I 1.12, "Investigate Assisted Migration."



Ongoing research and field experiences by public agencies, Tribes, NGOs, and academic institutions will continue to improve the information for western Joshua tree conservation. The Conservation Plan will be reviewed every 2 years, at which time, new information relevant to the Conservation Plan's goals, management actions, and effectiveness criteria will be incorporated to maintain the standard of applying science including TEK to decision-making. If relevant science is published or new information is available in the middle of an update cycle, updated management approaches may be implemented before the next update of the Conservation Plan, at the discretion and recommendation of CDFW.

5.2 MANAGEMENT ACTIONS NECESSARY TO CONSERVE WESTERN JOSHUA TREE

To achieve the Conservation Plan vision, purpose, and objectives described in Section 1.2,

"Conservation Plan Vision, Purpose, and Objectives," five major categories of management actions have been identified: avoidance and minimization, land conservation and management, tribal co-management, research to inform long-term conservation, and education and awareness (Table

5-1). Specific management actions within each of these categories are discussed in more detail below. In addition, Appendix D, "Avoidance and Minimization Best Management Practices and Guidelines" provides detailed guidance for implementing management actions that avoid or minimize adverse impacts on western Joshua tree.

"Our task must be to free ourselves...by widening our circle of compassion to embrace all living creatures and the whole of nature and its beauty"
-Albert Einstein

Table 5-1 Management Actions

Management Action Title	Management Action Topic
A&M: Avoidance and Minimization	Avoidance and minimization to lessen negative effects of human activities.
LC&M: Land Conservation and Management	Land conservation and management to protect existing populations and increase abundance.
TCM: Tribal Co-Management	Tribal co-management that reflects California Native American tribes' interests and priorities, improves decision-making, protects existing populations, and increases abundance.
R&I: Research to Inform Long-Term Conservation	Research to inform long-term conservation and improve decision-making.
E&A: Education and Awareness	Education and awareness to increase public support and lessen the negative effects of human activities.



5.2.1 Impact Avoidance and Minimization

The first priority for conservation of western Joshua tree and its habitat is to avoid adverse impacts altogether. Although climate change stress may be impossible to avoid in the short-term, other impacts are avoidable, such as project-related degradation and destruction of habitat. Impact avoidance should be emphasized as the first preferred choice whenever feasible, especially in areas identified as climate refugia. Furthermore, the importance of avoiding take to western Joshua tree and its habitat has been emphasized during discussions with Tribes, in particular the principle of not harming a tree unless it is absolutely critical for people (FII CPI, pers comm., 2024b).

When complete avoidance cannot be achieved, efforts should be made to minimize impacts on western Joshua tree and its habitat, and the presence of tribal cultural monitors and a trained arborist to minimize these impacts are encouraged (FII CPI, pers. comm., 2024a). Minimization may include efforts to reduce the number of trees and seeds taken; the area of habitat that is lost or degraded; the severity of impacts on individual trees; impacts on other organisms on which western Joshua tree depends; and indirect impacts on trees, seeds, habitats, [revegetation and restoration of habitat](#), and other ecologically related organisms.

The avoidance and minimization actions in this section could be voluntarily adopted and implemented by project proponents and land managers, incorporated into project approvals by local governments and regulatory agencies, or incorporated into voluntary, cooperative agreements between relevant agencies, organizations, and other parties. The Western Joshua Tree Conservation Act (WJTCA) requires the avoidance and minimization of impacts on western Joshua tree to the maximum extent practicable as a condition of obtaining a WJTCA incidental take permit (ITP) (Fish & G. Code, § 1927.3, subd. (a)(2)). WJTCA also states that the Conservation Plan shall include guidance for the avoidance and minimization of impacts on western Joshua trees and protocols for the successful relocation of western Joshua trees (Fish & G. Code, § 1927.6, subd. (a)).

The impact avoidance and minimization (A&M) management actions listed in this chapter are intended to promote the survival of existing western Joshua trees and the protection of their habitat where they could potentially be harmed by development, human activities, and natural hazards. Impacts on western Joshua trees could occur from urban development, infrastructure construction, resource extraction, damage by people and vehicles, and other forms of landscape alteration (see Section 4.3). When these activities affect the root systems or the seedbanks of western Joshua tree, the survival of populations can be compromised.



MANAGEMENT ACTION A&M 1: AVOID DIRECT AND INDIRECT IMPACTS

When landscape-altering projects occur near western Joshua trees, avoidance buffers should be established to avoid direct impacts on aboveground and belowground western Joshua tree parts and their seedbank. Scientific information on western Joshua tree root ball width, root zone width, and seedbank width was used to inform direct impact avoidance buffers. Direct impact buffers for avoidance should apply to ground-disturbing activities, such as construction and resource extraction, fire control and suppression, and any other actions that could harm or kill western Joshua trees or seeds. The following actions provide activity-specific guidance for direct impact avoidance.

Action A&M 1.1: Retain Healthy Trees

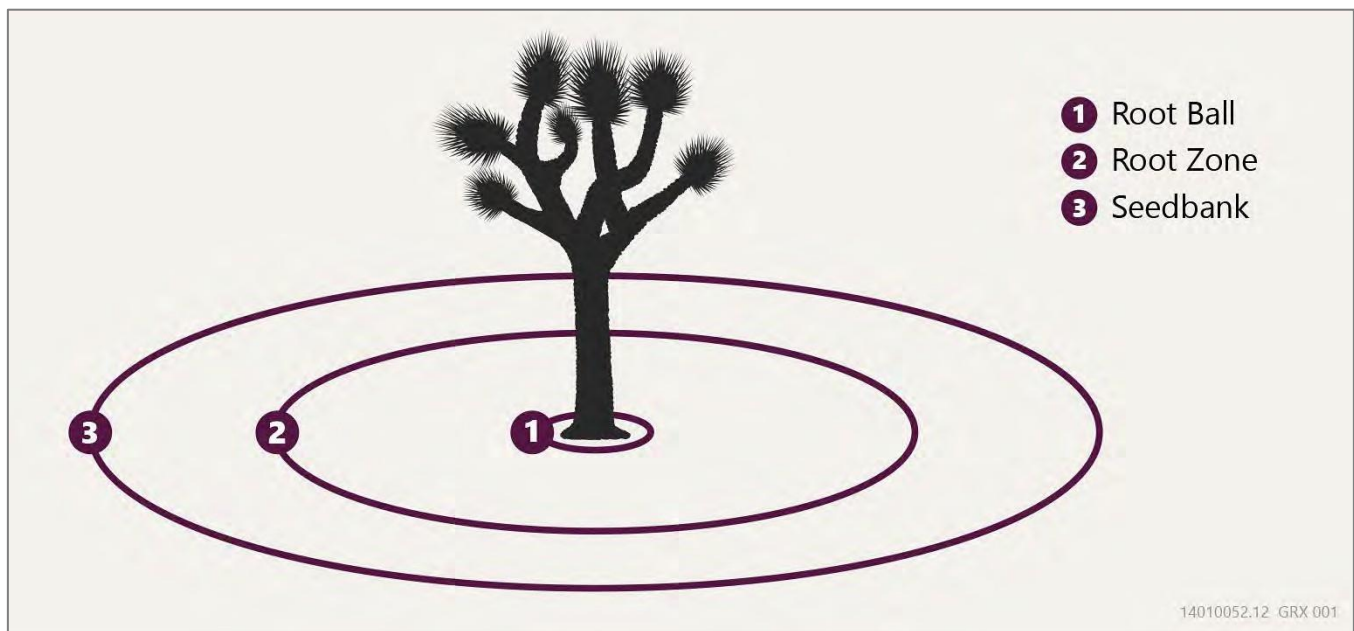
Project proponents (e.g., private and public entities) or agencies (e.g., local, state, and federal agencies) should prioritize retaining healthy western Joshua trees in place when planning a project. Mature/reproductive western Joshua trees in good condition, western Joshua trees in areas within and adjacent to contiguous suitable habitat, and western Joshua trees in habitat that is prioritized as having high value for conservation should be prioritized for retention in place. Signs a tree is healthy may include 60 percent or more living branches, minimal pest damage, recent unrestricted hard growth, recent flowering, and strong tree vigor (see Appendix E, "Relocation Guidelines and Protocols").

Action A&M 1.2: Implement Avoidance Buffers

When activities occur in the vicinity of western Joshua trees, project proponents, land managers, and agencies should implement buffers around western Joshua trees to avoid direct impacts (see Figure 5-1). In accordance with western Joshua tree primary seed dispersal distances, root growth, and salvage techniques, CDFW recommends buffers to avoid impacts for certain activities. The recommended minimum buffers for ground disturbance are:

- 56.7 meters (186 feet) from the base of a mature (i.e., sexually reproductive) western Joshua tree to avoid impacts on the primary seed dispersal zone,
- 15 meters (50 feet) from the base of a western Joshua tree 1 meter or greater in height or 7.5 meters (25 feet) from a western Joshua tree less than 1 meter (3.3 feet) in height to avoid damage to the root zone, and
- 0.61 meters (2 feet) from the base of a western Joshua tree 1 meter or greater in height or 0.3 meters (1 foot) less than 1 meter (3.3 feet) in height to avoid impacts on the root ball (i.e., the mass of soil that contains concentrated roots growing from the base of the stem of a western Joshua tree).





Note: Graphical representation of buffer zones (not to scale).

Source: Compiled by Ascent in 2024.

Figure 5-1 Western Joshua Tree Buffer Zones

These recommended buffers may be adjusted based on project-specific information and impacts. Additional information to consider when determining a buffer may include, but is not limited to:

- Density of trees within each project site as provided by the project census or other biological survey information.
- Location of a tree in relation to existing structures, such as fences, driveways, or other permanent structures.
- Intensity of proposed ground-disturbing activities (e.g., trenching and excavation impacts may be different than installing fencing).
- Duration of proposed impacts (temporary or permanent).
- Additional minimization measures to reduce impacts of buffer encroachment (e.g., supplemental watering, protecting roots and trees from access, or avoiding equipment damage, etc.).
- Geographic location (e.g., Is the project located in an urban area or within targeted climate refugia?).
- Life stage of tree, including reproductive stage. Branched trees are more likely to have produced seed and may have more extensive root structures.



Disturbances outside of these buffers are less likely to negatively affect the health and survival of the tree or its seeds. CDFW will continue to review the science including TEK on western Joshua tree during implementation of the Conservation Plan and update impact avoidance buffers as appropriate.

Action A&M 1.3: Avoid Impacts during Pesticide Application

Project proponents, landowners, land managers, and agencies should not apply pesticides on western Joshua trees and should implement best management practices that avoid pesticide drift onto western Joshua trees, nontarget native vegetation (e.g., nurse plants), pollinators, and seed-dispersing rodents. See Action A&M 1.3.1, "Avoid Impacts during Pesticide Application" in Appendix D for recommended best management practices related to this Action.

Action A&M 1.4: Avoid Impacts Related to Unauthorized Vehicle Use

Land managers should implement measures to prohibit unauthorized off-highway vehicle (OHV) and other vehicle use off designated trails in western Joshua tree habitat, such as by closing areas outside of designated routes with signage, vertical mulching, or installing other barriers. On public lands authorized for open, overland OHV recreation within western Joshua tree habitat, vehicle use rules should be modified to restrict travel to existing designated trails.

Action A&M 1.5: Avoid Impacts from Overgrazing

Land managers and regulatory agencies should prohibit grazing activities within western Joshua tree habitat if grazing is causing adverse effects. This can be accomplished by not renewing existing grazing leases, excluding portions of allotments with western Joshua trees, and installing property fences to avoid free range or trespass grazing. Feral, nonnative grazing animals (e.g., burros, horses) should be removed or relocated from western Joshua tree habitat. However, targeted grazing by prescribed herbivory may be useful to reduce annual invasive species (see Action A&M 2.7, "Minimize Impacts from Grazing Activities," and Appendix D, Action A&M 3.5.1, "Implement Fuel Treatments") (Berryman et al. 2023).

MANAGEMENT ACTION A&M 2: MINIMIZE DIRECT AND INDIRECT IMPACTS

If avoidance is not feasible, direct and indirect impacts on western Joshua tree and its habitat should be minimized. When landscape-altering projects occur near western Joshua trees, effort should be made to minimize direct impacts on western Joshua tree. The following actions provide activity-specific guidance for direct impact minimization.

Action A&M 2.1: Minimize Impacts from Climate Change

Climate change is a significant threat to western Joshua tree. All entities, including governments, businesses, and individuals should reduce greenhouse gas emissions to help minimize the impacts of climate change on species (IPCC 2023).



Action A&M 2.2: Minimize Impacts on Occupied Western Joshua Tree Habitat

Landowners, developers, and land managers should minimize the area of western Joshua tree habitat that is directly affected by their activities, and minimize the number of trees that are taken or harmed. Minimization of habitat disturbance should include minimizing impacts on areas with nurse plants and minimizing disruption of the movements of small mammal seed dispersers (e.g., not using rodent barrier fencing). Western Joshua tree habitat that is in good condition, in ecologically core or intact areas, and within predicted climate refugia should be prioritized first for avoidance and conservation, but if this avoidance is not feasible, impacts on these areas should be minimized to the maximum extent possible. The importance of minimizing harm to western Joshua trees and their habitat has been emphasized during discussions with Tribes. It is important for trained tribal cultural monitors to be present during destruction or removal of western Joshua trees to provide cultural protection of trees and respect ancestral lands (FIICPI, pers. comm., 2024b).



Action A&M 2.3: Relocate Trees

Western Joshua trees should be relocated when project proponents, landowners, developers, and land managers are unable to retain trees in place or when there is a high probability of substantially damaging or lethal impacts occurring to a retained tree. Project proponents, landowners, land managers, and agencies should follow the Western Joshua Tree Relocation Guidelines and Protocols provided by CDFW (presented in Appendix E) when determining whether a tree should be relocated or not. Appendix E also provides a detailed protocol for conducting tree relocations, including recommendations for selecting relocation areas,



consideration of maintaining genetic integrity of healthy receiver western Joshua tree populations, methods for physically relocating the tree, types of relocation, and maintenance and monitoring standards. It is important for trained tribal cultural monitors to be present during transplantation of western Joshua trees to provide cultural protection of trees and ensure proper removal methods are followed (FII CPI pers comm 2024b). Relocation may not be required when the number of trees to be relocated is so large that revegetation and/or restoration of habitat is more feasible and practicable than relocation.

Action A&M 2.4: Collect and Store Seeds

Collection and long-term storage of viable western Joshua tree seeds can preserve local genetic diversity and therefore can help minimize the loss of western Joshua tree diversity from project activities. In addition, seeds kept in long-term conservation storage can provide source material for restoration of existing habitat or outplanting to other viable locations (such as climate refugia) and can be used to inform conservation, including targeting locations for conservation nurseries. Seed collection and storage activities should follow Center for Plant Conservation's *CPC Best Conservation Practices to Support Species Survival in the Wild* (CPC 2019) or other accepted standards, and seed collection and storage may be a required minimization measure in western Joshua tree incidental take permits issued by CDFW. CDFW may provide additional specific guidelines and methods for using western Joshua tree seed collection as a minimization measure in the future and update recommendations in the Conservation Plan if necessary.

Action A&M 2.5: Minimize Impacts from Invasive Plants

Project proponents, landowners, land managers, and agencies should implement best management practices to prevent the spread of invasive plants (Cal-IPC 2012) for all activities that have the potential to spread invasive species in western Joshua tree habitat. These activities include but are not limited to construction, resource extraction, OHV use, outdoor recreation, fire control and suppression, fuel treatment implementation, and grazing. See Appendix D, Action A&M 2.5.1, "Minimize Impacts from Invasive Plants" for best management practices.

Action A&M 2.6: Minimize Impacts during Pesticide Application

Project proponents, landowners, land managers, and agencies should implement best management practices that minimize pesticide drift or other inadvertent contact affecting western Joshua trees and other nontarget native vegetation (e.g., nurse plants) (see Appendix D, Action A&M 2.6.1, "Minimize Impacts during Pesticide Application").

Action A&M 2.7: Minimize Impacts from Grazing Activities

When grazing is adversely affecting western Joshua tree, landowners, land managers, and



grazing practitioners should decrease grazing intensity when complete avoidance is not feasible (see Action A&M 1.5, "Avoid Impacts from Overgrazing"). Guidance to minimize the



impact of grazing can include implementing rotational grazing, lowering stocking rates and the allowable annual forage utilization rate, implementing short grazing periods for herds and long post-recovery (i.e., rest) periods, and retaining sufficient litter and plant cover to protect the soil from erosion and allow plant regrowth. In areas where western Joshua trees are recovering from wildland fire, grazing should be suspended to allow resprouts and seedlings to establish (See Appendix D, Action A&M 3.3.1, "Minimize Impacts from Postfire Rehabilitation"). In addition, incompatible land uses, such as livestock grazing, should be addressed through the restoration design (see Action L&M 4.3, "Develop and Implement Restoration/Enhancement Plans"). Land managers and project proponents should consult with CDFW prior to implementing prescribed grazing to ensure potential impacts including but not limited to disease transfer to special-status species, including bighorn sheep, are avoided.

Action A&M 2.8: Minimize Impacts from OHV Use and Outdoor Recreation

On public lands where OHV recreation is allowed, land managers should restrict OHV use to designated roads and trails. If new trails are developed, they should avoid western Joshua tree populations. Land managers should encourage responsible OHV use behaviors through continued implementation of education programs to minimize damage to western Joshua tree root systems, nurse plants, and seedbanks. Education programs should emphasize practice and principles for responsible outdoor recreation, such as those provided by Tread Lightly (Tread Lightly 2024) and other organizations.

Action A&M 2.9: Revegetation and Restoration of Habitat

Where avoidance and relocation are not feasible (for example, when there are an extensive number of trees), revegetation and/or restoration of habitat can be utilized to minimize impacts. Revegetation and/or restoration undertaken pursuant to an existing statutory scheme requiring success criteria, monitoring, and financial assurances to ensure completion of the revegetation and/or restoration can satisfy this management action.

MANAGEMENT ACTION A&M 3: MINIMIZE IMPACTS FROM WILDLAND FIRE AND FIRE MANAGEMENT

Wildland fire is a significant threat to western Joshua tree, but efforts to reduce wildland fire risks, fight active wildland fires, and restore landscapes after fires can also damage western Joshua trees and their habitat. This management action includes activities to minimize impacts on western Joshua tree from wildland fire, and from fire risk reduction, suppression, and postfire restoration activities. Wildland fire is unpredictable; however, planned activities for responding to wildland fire events can effectively minimize impacts on western Joshua tree habitat.

Action A&M 3.1: Fight Active Wildland Fires

Land managers and wildland fire responders should aggressively fight and contain active



wildland fires in or near western Joshua tree habitat to protect the habitat, minimize loss of western Joshua trees, and sustain western Joshua tree habitat values.



Action A&M 3.2: Minimize Impacts from Fire Suppression



Bulldozer, firefighter, and fire engine conducting fire suppression efforts on the Elk Fire in 2024

Source: Hannah Schwalbe, National Park Service.

To minimize impacts on western Joshua trees and their habitats caused by wildland fire suppression response, when it does not threaten the safety of firefighters, the public, or important infrastructure, land managers and wildland fire responders should minimize direct and indirect tree damage or removal, ground disturbance in western Joshua tree habitat, and degradation of habitat values from fire suppression and control activities. Minimum Impact Suppression Techniques (MIST) and best management practices are provided in Appendix D, Action A&M 3.2.1,

"Minimize Impacts from Fire Suppression." Examples of best practices for wildland fire response include using preexisting fuel breaks as fire lines and stopping all habitat-damaging tactics as soon as they are no longer required.

Action A&M 3.3: Minimize Impacts from Postfire Rehabilitation

Land managers should minimize direct impacts on western Joshua trees after a wildland fire by developing and implementing measures when rehabilitating burned areas. A postfire monitoring plan should include measures to protect existing western Joshua trees, replant western Joshua trees using appropriate seed sources if they no longer exist, replant other native species, control invasive plants, and protect exposed soil as part of plans for landscape revegetation. Appendix D, Action A&M 3.3.1, "Minimize Impacts from Postfire Rehabilitation" contains specific elements to include in a postfire monitoring and control plan.

Action A&M 3.4: Minimize Accidental Ignition of Fires

Best management practices should reduce the potential for accidental ignition of wildland fires and be implemented during construction, outdoor recreation activities, operation and maintenance of infrastructure, and other activities involving overland use of motorized vehicles or mechanical equipment. Fire extinguishers, backpack sprayers, water trailers, or water tenders equipped with hoses should be available to suppress accidental ignitions during hot, dry, or windy conditions. To reduce the potential sources of ignition that may accidentally burn vegetation, best management practices should be implemented as described in Appendix D, Action A&M 3.4.1, "Minimize Accidental Ignition of Fires."



Action A&M 3.5: Implement Fuel Treatments

Fuel treatments in the vicinity of western Joshua trees could be conducted when appropriate, such as when high fuel loads are present (e.g., invasive plants) or when an area has burned more frequently than the natural fire return interval.

Land managers should develop and implement measures to avoid and minimize direct impacts on western Joshua trees during fuel treatment for wildland fire risk reduction. Several types of fuel treatments that could be implemented in western Joshua tree habitat include fuel breaks, treatments in the wildland-urban interface, and treatments focused on removing invasive species and restoring areas to the natural fire regime (i.e., ecological restoration). Fuel breaks (areas cleared of vegetation or graded as a fuel treatment in anticipation of a fire) have been found to be ineffective at containing wildland fire under certain circumstances, for example high winds (Syphard et al. 2011; Oliveira et al. 2016), but they are useful for firefighter access (Syphard et al. 2011). Treatments in the wildland-urban interface “consist of strategic removal of vegetation to prevent or slow the spread of non-wind driven wildland fire between structures and wildlands, and vice versa” (California Board of Forestry and Fire Protection 2019). Fuel treatments designed for ecological restoration are intended to restore “degraded, damaged, or destroyed ecosystems and habitats to conditions associated with a natural fire regime” and may be implemented in areas where invasive species such as red brome (*Bromus rubens*), cheatgrass (*Bromus tectorum*), Sahara mustard (*Brassica tournefortii*), stinknet (*Oncosiphon pilulifer*), Russian-thistle (*Salsola tragus*), or red-stemmed filaree (*Erodium cicutarium*) or dead, woody debris have increased in cover and have resulted in a shift in the fire regime (Brooks and Minnich 2018; Cal-IPC 2024). Additional guidance to avoid and minimize impacts on western Joshua tree and its habitat during fuel treatments can be found in Appendix D, Action A&M 3.5.1 “Implement Fuel Treatments.”

5.2.2 Land Conservation and Management

With climate change as a primary threat to western Joshua tree, protecting and managing lands that are occupied by the species and predicted to be climate refugia are high priorities for conserving the species. Managing climate change refugia and maintaining ecological functions necessary for western Joshua tree survival also allows time for natural systems to adapt and for humans to develop longer-term solutions for conservation (Peterson et al. 2011).

The goal of land conservation is to permanently protect western Joshua tree habitat from development and other incompatible human uses. Conserving lands before habitat degradation and destruction occur is a critical first step toward ensuring the land remains occupied by and suitable for western Joshua tree in the future.



The goal of land management is to create and maintain environmental conditions on conserved land that promote viable populations of western Joshua trees and their habitat. The threats from climate change, wildland fire, invasive species, and other human activities may still be present after land is permanently protected from development. Land management will be necessary to avoid, minimize, and remediate these threats on a long-term basis to ensure that conserved lands continue to support sustained populations of western Joshua trees and the natural processes on which they depend.

Land conservation and management actions have been developed with principles of conservation biology in mind and will be a critical component in achieving the goals of the Conservation Plan.

MANAGEMENT ACTION LC&M 1: IDENTIFY PRIORITY CONSERVATION LANDS

With finite resources available for conservation efforts, CDFW will define criteria for prioritizing lands that are most suited to the persistence of western Joshua tree. The criteria will help guide agencies, NGOs, Tribes, and others in protecting conservation land. Smith et al. (2023) suggest that western Joshua tree conservation efforts focus on protecting populations that meet criteria for resiliency to climate change and that have demographic signatures of long-term viability. Protecting lands that are already occupied by western Joshua tree should also be prioritized because establishing populations of western Joshua tree in new areas is extremely challenging, sometimes controversial, and costly with a high risk of failure.

Smith et al. (2023) recommend the following four steps (which are summarized further in Section 5.1 under the seven-step approach to conservation) for identifying locations within western Joshua tree populations that should have highest priority for protection:

1. Identify genetic structure and distinct populations.
2. Develop species distribution models for these populations using high-quality occurrence data to identify climate refugia.
3. Validate potential refugia using demographic studies and other independent data sources.
4. Assess adaptive genetic variation within populations, using either association genetics or, ideally, experimental approaches coupled with genomic data.

Detailed information on the genetic structure, distinct populations, and the adaptive genetic variation of western Joshua tree is not currently known. A species distribution model for western Joshua tree using high-quality occurrence data was developed by Esque et al. (2023) and has been applied to a model developed to identify western Joshua tree climate refugia range-



wide (Shryock et al. forthcoming). Categories of climate refugia based on these data (described in Section 4.4, “Management Units”) were used to help identify priority conservation lands. Detailed range-wide data from western Joshua tree demographic studies to validate potential refugia are not yet available but will be incorporated into the Conservation Plan in the future.

The intactness of ecosystems is an important predictor of ecosystem function and overall conservation value. Ecosystems that are more intact are better equipped to support western Joshua tree habitat functions and are essential for maintaining the species in the future. Parker et al. (2018) updated the ecological assessment conducted by Randall et al. (2010) and assessed the conservation value of areas that overlap western Joshua tree’s range as part of an assessment of the impacts of solar and wind development in two locations in California. This assessment was conducted on a coarse scale—2.59 square kilometers (1 square mile) hexagons—based on 2017 conditions. Parker et al. (2018) assigned each hexagon one of the following four conservation values (in order of decreasing value) from the Randall et al. (2010) framework: ecologically core, ecologically intact, moderately degraded, and highly converted.



Young western Joshua trees growing at high elevation of 5,817 feet

Source: Michael Faist, National Park Service.



As a range-wide strategy, CDFW will apply conservation priority to the areas identified as climate refugia (comprising categories of predicted and buffered climate refugia, and unoccupied future suitable habitat; see Section 4.4) or assigned conservation values of ecologically core or intact, recognizing they will be the areas most valuable for western Joshua tree in the future. Areas of climate refugia that are moderately degraded may also be valuable for western Joshua tree in the future. Additional information on climate refugia and ecological intactness is in Section 4.4.

On a local scale, CDFW will identify priority conservation lands based on the best available site data relevant to western Joshua tree's ecological needs for long-term viability. Available information will be analyzed initially, and additional information will be collected to properly assess the relative conservation value of the evaluated lands.

Synthesizing the characteristics of land with the highest conservation value for western Joshua tree, priority conservation lands should possess all or at least some of the following attributes:

- A large area occupied by western Joshua tree.
- A high density of reproductive adult individuals.
- Presence within predicted climate refugia.
- A high recruitment rate.
- Presence of pollinator moths, nurse plants, and small mammal seed dispersers.
- Low risk of stressors from adjacent land use (e.g., fire ignition risk, invasive species encroachment, OHV-related damage, planned development; disturbance from high-traffic roads).
- High-value lands that currently have little to no protection.
- Good overall tree health within populations (e.g., few signs of pests, damage, exposed roots, or health problems; higher vigor; trees and limbs upright).
- Large patch size (low perimeter-to-edge ratio) and connectivity to other areas occupied by western Joshua tree.
- Connectivity to climate refugia, such as landscape connections across elevation gradients and ecological transition zones (e.g., where desert communities transition to montane communities of the Sierra Nevada and Transverse ranges [Randall et al. 2010] and between the Mojave Desert and Great Basin).
- Genetically distinct populations with adaptive genetic diversity.



A weighted scoring system is useful for evaluating and prioritizing potential conservation lands. CDFW has used the preliminary lands assessment criteria (presented in Appendix F, “Conservation Lands Prioritization Assessment”) as an initial tool to help focus Conservation Fund expenditures on the acquisition and protection of lands with the greatest western Joshua tree conservation value. CDFW will update or revise this tool as needed in the future based on new information and data.

MANAGEMENT ACTION LC&M 2: PROTECT PRIORITY CONSERVATION LANDS

CDFW will apply a multifaceted approach to safeguard conservation lands supporting western Joshua trees on a local scale and within predicted climate refugia range-wide. Protection of areas identified as priority conservation lands is particularly important to achieve the goals of this Conservation Plan, but any lands supporting western Joshua tree may contribute to the conservation of the species. Strategies for land conservation may include designations by state, federal, local, and tribal governments (e.g., designated parks, preserves, monuments, conservation areas, and wilderness areas); protection of lands for conservation by NGOs; acquisition of fee title or conservation easement; and implementation of interagency agreements or written memoranda of understanding (MOUs). Durable legal protection mechanisms are described further in Chapter 6, “Implementation.”

Action LC&M 2.1: Implement Priority Conservation Land Protection

Lands identified through Management Action LC&M 1, “Identify Priority Conservation Lands,” as high priority for western Joshua tree conservation could be protected through the following implementation approaches:

- Establishment of a State Parks Natural Reserve or Natural Preserve within a State Park or State Recreation Area, CDFW Ecological Reserve, and conserved land under state conservancies or Resource Conservation District land protection programs.
- Purchase or lease of State School Lands from the California State Lands Commission for western Joshua tree conservation purposes.
- Conservation of other state lands through written MOUs or other collaboration agreements with CDFW.
- Designation of national monuments, federal conservation areas, wilderness areas, national parks, and other federal protections.
- Conservation of other federal lands through interagency agreements or written memoranda of understanding and other mechanisms in coordination with US Fish and Wildlife Service (USFWS) (see example agreements in Section 2.2.2, “Federal Listing Status”).



- Acquisition of land by governments, Tribes, or NGOs from willing sellers through fee title or conservation easement acquisition.
- Establishment of conservation easements cooperatively by landowners.
- Written MOUs for conservation on tribal land.
- Establishment and protection of public open space, parks, or/and preserves by local agencies.

Action LC&M 2.2: Track Progress of Conserved Lands

Regardless of the land protection approaches used, a central tracking system for conserved lands should be maintained by CDFW to track progress in protecting priority conservation lands. The system should use a geographic information system to document locations of protected lands in relation to western Joshua tree's distribution and priority conservation lands identified under Management Action LC&M 1, "Identify Priority Conservation Lands."

MANAGEMENT ACTION LC&M 3: MANAGE CONSERVATION LANDS

Long-term management of conservation lands should be carried out to support western Joshua tree populations and habitat. Land management activities, such as invasive species control, fuel break maintenance, fence repair, garbage removal, monitoring and adaptive management, and law enforcement, are often required to avoid, minimize, and remediate ongoing and persistent threats. Land management is particularly important for priority conservation lands at high risk from wildland fire, invasive species, ongoing and adjacent land use, and illegal or trespass activities. Land management is an important action for maintaining the natural processes western Joshua tree needs in its habitat. TEK would help define beneficial land management practices for western Joshua tree, as discussed in Section 5.2.3, below.



Source: Anna Cirimele, National Park Service.



Management of federal and state lands is typically the responsibility of an agency, with resources allocated based on the budget and priorities of the agency in compliance with its laws and regulations. Although some agencies allocate resources with biodiversity conservation in mind, land use policies or mandates may conflict with conservation priorities and can negatively affect biodiversity. Even if conservation is a priority, agency resources may be limited to implement land management for the benefit of western Joshua tree.

Action LC&M 3.1: Develop Long-Term Plan for Conservation Lands

Landowners, land managers, and agencies should develop management and long-term monitoring plans to promote long-term persistence of western Joshua tree on conservation lands. These plans should describe how the land will be managed to maintain habitat function and minimize or remediate threats to western Joshua tree. CDFW will work with land managers to develop long-term monitoring and management plans or conservation easement stewardship agreements for conserved lands.

Land management plans should be tailored to the needs of individual properties based on site evaluations. Management priorities may include invasive species control, wildland fire risk reduction, cultural burning, restoring degraded areas, and measures to reduce threats from adjacent land uses or to prevent trespassing and unauthorized uses. Monitoring for adaptive management should be incorporated into plans to track the condition of western Joshua trees and other habitat characteristics. Management actions or alternative management approaches should then be implemented, if necessary, based on monitoring results.

Management should emphasize protecting priority conservation lands from wildland fire where fire risk to western Joshua tree populations is high. Maintenance of existing fuel breaks and establishment of new low-impact fuel breaks may be effective approaches to protecting western Joshua tree populations from wildland fire damage. Existing roads and other infrastructure should be maintained as fuel breaks to the extent feasible and effective.

Action LC&M 3.2: Prioritize Management of State and Federal Lands for Western Joshua Tree

Approximately 2 and 63 percent of the western Joshua tree range in California are on state and federal lands, respectively. Therefore, CDFW will seek to establish written MOUs or other written agreements with state and federal agencies for long-term monitoring and management to benefit western Joshua tree on priority conservation lands. Approximately 28 percent of these lands are within predicted climate refugia, which increases the importance of managing these lands to conserve western Joshua tree.



Action LC&M 3.3: Establish Endowments and Provide Other Long-Term Funding Mechanisms for Management of Conservation Lands

Funding for long-term land management is necessary to ensure that critical monitoring and management activities of conservation lands are implemented. Funding may be provided with endowments, annual budgets, grants, use of the Conservation Fund, or other mechanisms applicable to the land management agency, organization, or California Native American tribe.

MANAGEMENT ACTION LC&M 4: RESTORE AND ENHANCE HABITAT

Restoration of damaged or degraded lands and enhancement of lands to help support western Joshua tree can aid in the conservation of the species. Given that desert ecosystems are slow to recover after disturbance, active restoration can be a valuable tool for increasing ecosystem recovery and improving habitat suitability for western Joshua tree (Abella et al. 2023).

Habitat restoration is the holistic process of reestablishing ecological function and repairing characteristics of a site to return it to a condition that is self-sustaining. Realizing self-sustaining habitat may be achieved under the care of Tribes and/or by aiming to re-create conditions that existed before it was damaged or degraded by natural or human disturbances post-colonization. Restoration actions may include reconstructing natural topography or other physical characteristics of the land, rehabilitating compacted soils, removing invasive plants, and replanting native vegetation. Examples of habitat restoration include replanting western Joshua trees and associated native plants on a site where these species were destroyed by wildland fire and reestablishing natural topography where OHV use created rills and gullies (Abella et al. 2023). In some circumstances, restoring moderately or highly degraded lands occupied by western Joshua tree can provide conservation value for the species overall. Restoration is especially valuable where ecologically core or ecologically intact lands are not available, or where degraded or converted lands are within or connected to predicted climate refugia.

Habitat enhancement involves the modification of certain characteristics of a site with the goal of increasing specific habitat functions based on management objectives, such as increasing habitat suitability for a particular species (Vaughn et al. 2010). An example of habitat enhancement is vertical mulching a site occupied by western Joshua tree that is lacking sufficient nurse plants to support western Joshua tree recruitment. Another example is implementing projects that use science-based, assisted gene flow methods to introduce climate-adapted genes into stands of western Joshua trees to enhance their capacity for climate adaptation and resilience, provided there is sufficient scientific justification to do so. Habitat enhancement may be appropriate on some ecologically core or ecologically intact conservation lands, such as those that are within predicted climate refugia. Enhancement may also be beneficial on sites that support populations with advantageous genetic traits,



such as climate resilience adaptations, to increase seed production or recruitment within those populations.

Land managers should use a comprehensive restoration approach to return ecosystem functions to degraded sites, or to enhance a site's resilience, ecological function, and ability to recruit western Joshua trees. Where appropriate, funds from the Western Joshua Tree Conservation Fund could be used for restoration efforts on strategically located habitats that have been degraded by fire, invasive plants, development, grazing, unauthorized OHV use, or other disturbances.

Action LC&M 4.1 Identify Priority Restoration Areas

Western Joshua tree habitat of high conservation value that is damaged by wildland fire or other stressors should have priority for restoration. Habitat of high conservation value includes sites within or connected to predicted climate refugia and other priority conservation areas as determined through implementation of Management Action LC&M 1, "Identify Priority Conservation Lands." Other priority restoration sites should be selected based on predicted climate refugia areas where research indicates climate-adapted individuals are already found growing. Other factors to consider when evaluating lands for restoration potential include adjacent land uses, western Joshua tree cover and demography, seed sources or presence of a seedbank, soil condition, absence of invasive plant infestation, condition of topsoil, presence of biotic soil crusts, and availability of nurse plants.

Action LC&M 4.2 Identify Priority Enhancement Areas

Enhancement should be implemented to improve ecosystem processes on sites already occupied by western Joshua tree to increase recruitment and population resilience. Enhancement projects would be focused on relatively undisturbed areas to ecologically improve western Joshua tree habitats on priority conservation lands. Enhancement activities should be focused on sites that are situated in predicted climate refugia or other priority conservation areas where natural processes or habitat functions could be improved for a specific conservation objective, and where enhancement projects will clearly result in an overall net improvement in ecosystem processes for western Joshua tree and its habitat. The following are examples of enhancement for conservation objectives:

- Assist the natural regeneration of western Joshua trees and nurse plants.
- Introduce climate-adapted genes in populations through assisted gene flow methods, such as translocating individuals and outplanting nursery stock.
- Irrigate during drought periods.
- Improve regeneration by introducing yucca moth pollinators.



Action LC&M 4.3: Develop and Implement Restoration/Enhancement Plans

Once a site is identified for a restoration or enhancement project, a detailed design plan for implementing the project should be developed. The design plan should incorporate clear, explicit, and measurable goals based on current baseline potential and site conditions before disturbance. The design plan should include a summary of the site's existing habitat conditions, a description of habitat features required for western Joshua tree persistence, quantitative metrics to define goals and measure success, a monitoring and management plan, an undisturbed reference site to compare with the restoration or enhancement site to help evaluate success, an estimate of the project's cost, and review of the design plan by a qualified desert restoration specialist.



Joshua tree habitat restoration site managed by Mojave Desert Land Trust.

Source: Jessie Quinn, Ascent

The steps to implementing enhancement activities should be site specific depending on management goals; however, any potential restoration action on a disturbed site could likely be implemented on a relatively undisturbed site to improve natural processes, habitat functions, or climate resiliency for western Joshua tree.

Typical restoration or enhancement goals for western Joshua tree habitat include increasing western Joshua tree recruitment; increasing cover of native plant species, especially native shrubs; reducing competition from invasive annual plant cover; and stabilizing and repairing soils including soil microbiomes (biocrusts). Typical challenges to achieving restoration or enhancement goals in desert ecosystems include low and unpredictable precipitation; hot, dry summers; infertile, shallow, or damaged soils; intensive herbivory when other forage plants are limited; limited availability of plant resources for revegetating restoration sites; and competition from invasive plants (Abella et al. 2023). The restoration or enhancement design plan should identify methods to address these challenges.

Modified and disturbed habitats often have little or no remaining cover of live western Joshua trees and native associate plants and therefore require active planting as an element of restoration. These sites must be revegetated with western Joshua tree and nurse plant species. Depending on the needs of the site, availability of plant and seed sources, and funding availability, revegetation may use a combination of these methods: outplanting appropriate



nursery stock, salvaging and transplanting from other sites, planting cuttings from plants, and seeding. Ideally, this would include planting western Joshua tree seedlings grown from seeds that are collected from individuals genetically adapted to similar site conditions, from the same general geography, and from individuals with climate adaptive traits. Where necessary and feasible for vegetation establishment, all plantings of western Joshua tree and nurse plants should be caged to prevent damage from herbivory, and supplemental irrigation should be provided. Assisted natural regeneration of western Joshua trees and nurse plants may be an appropriate element of restoration to promote their growth and establishment, which might include tree shelters, removal of competing invasive vegetation, and other techniques based on science including TEK.

Disturbed lands often have degraded soils and may require soil rehabilitation before revegetation. Soil conditions should be evaluated before beginning revegetation, and a strategy for improving soil suitability for western Joshua tree establishment should be incorporated into the restoration design plan as necessary. Soil rehabilitation techniques may include decompaction, roughening soil surfaces, replacing topsoil, and inoculating soil with associated beneficial microorganisms (e.g., arbuscular mycorrhizal fungi).

Active restoration of biotic soil crusts (biocrusts) can be an important part of returning degraded sites to conditions favorable for western Joshua tree by limiting soil erosion, increasing soil organic matter and nutrients, facilitating native plant seed germination, and limiting invasive plant establishment. Arbuscular mycorrhizal fungi live in the soil and form mutualistic symbiosis with plant roots that facilitate nutrients to roots, increase drought tolerance by increasing water uptake in roots, and may increase resistance to soil pathogens. As new research improves understanding of biocrust restoration and arbuscular mycorrhizal fungi associations with western Joshua tree, strategies in restoration plans should be updated and refined.

Vertical mulching consists of placing dead plant material upright into the ground to provide vertical structure that replicates some functions provided by nurse plants, such as shading, trapping windblown sand and seeds, and moisture retention. If appropriate for the site, this technique can be implemented to reduce erosion, discourage vehicle or foot traffic, and facilitate the establishment of western Joshua tree and native shrub seedlings (Abella et al. 2023).

Climate change is predicted to make the region hotter for longer periods of the year and increase the occurrence of droughts, variable precipitation, and intensity of heavy precipitation events; therefore, reducing as many other threats and stressors as possible will increase the likelihood of restoration success (Abella et al. 2023). Anything that degrades the habitat value for western Joshua tree, such as invasive plants, incompatible land uses (e.g., livestock grazing, OHV use), erosion, and wildland fire (e.g., fuel breaks around the restoration site) should be addressed through the restoration design. If appropriate and feasible,



restoration sites should be fenced to prevent human activities (e.g., foot traffic, OHV use, cattle grazing, illegal dumping) from influencing restoration success.

Restoration or enhancement activities should include conducting an invasive species assessment of the site, including mapping infestations. Then, if appropriate, invasive species control should be conducted, using targeted herbicides (e.g., indaziflam) or other treatment methods appropriate for target species, early in the growing season before restoration occurs, as well as for maintenance (see Action A&M 2.6, "Minimize Impacts during Pesticide Application").

Yucca moths play a critical role in western Joshua tree reproduction; therefore, introducing yucca moth pollinators to restoration or enhancement sites where they are absent should be considered as part of a restoration or enhancement design plan and incorporated as appropriate to facilitate pollination and contribute to successful regeneration. Ongoing monitoring to track moth survival and reproduction and management to protect moths from threats would be necessary for successful establishment of a self-sustaining yucca moth population.



Source: Anna Cirimele, National Park Service.

Regular maintenance and monitoring are necessary to ensure ecological processes are trending toward meeting the goals described in the design plans. Monitoring allows projects to be adaptively managed if performance standards are not being met along the way. Quantitative performance criteria that trigger adaptive management actions if performance standards are not being met should be incorporated into the maintenance and monitoring plan. Monitoring duration and intervals should be included in the plan. Restoration and enhancement projects should be monitored for long periods of time following completion of the initial restoration or enhancement activities due to the slow nature of desert ecosystem



processes. Monitoring, maintenance, and adaptive management should continue until success criteria are met.

Action LC&M 4.4: Encourage Project-Related Revegetation and Restoration to Minimize and Mitigate Impacts

Project proponents (i.e., private and public entities) should be encouraged to include a revegetation and/or restoration component in their projects, especially when avoidance and relocation are not feasible, to further restore and enhance habitat. Revegetation and/or restoration undertaken pursuant to an existing statutory scheme requiring success criteria, monitoring, and financial assurances to ensure completion of the revegetation and/or restoration can satisfy this management action.

MANAGEMENT ACTION LC&M 5: DEVELOP AND IMPLEMENT A SEED CONSERVATION STRATEGY

While preserving western Joshua tree in the wild is the top priority, developing a seed conservation strategy that includes establishment of seed banks is an important way to minimize loss of western Joshua tree genetic diversity over the long term (see Action A&M 2.4). Seeds collected for long-term conservation storage could be used to grow western Joshua trees for restoration and enhancement projects or research. With sufficient additional research, the conservation seed bank could provide opportunities to assist gene flow to facilitate climate adaptation by planting western Joshua trees in areas of climate refugia.

A comprehensive seed conservation strategy should be implemented to develop a seed repository that is representative of western Joshua tree genetic diversity over a wide geographic area across a range of environmental conditions. The seed strategy should include protocols for seed collection, storage, and distribution for conservation and recovery purposes following the guidelines published in Center for Plant Conservation's *CPC Best Conservation Practices to Support Species Survival in the Wild* (CPC 2019) that will ensure long term preservation of a viable, genetically diverse western Joshua tree population.

Action LC&M 5.1: Develop Seed Collection Standards and Protocols



In collaboration with other agencies and institutions, CDFW will develop and adopt standards and protocols for western Joshua tree seed collection strategies to maximize genetic seed diversity. The seed collection standards and protocols will be designed to conserve western Joshua seeds that are adapted to climates expected to persist in the



Joshua tree seed pods.

Source: Anna Cirimele, National Park Service.

future. Collections will include seeds from areas at high risk of wildland fire, areas recently subjected to wildland fire, and areas with hotter, drier microclimates (i.e., seeds from

genetically adaptive individuals). This would likely include collection of seeds during masting years. Seed collection could also be a permit condition for take of western Joshua tree (see Action A&M 2.4). The seed collection standards will be based on the Center for Plant Conservation's *CPC Best Conservation Practices to Support Species Survival in the Wild* (CPC 2019) and will include the following actions:



- Obtain necessary permits from CDFW and permission from the landowner before attempting any collection of western Joshua tree seeds.
- Collect no more than 10 percent of seeds produced within a given western Joshua tree population in any 1 year, or no more than the maximum amount of seeds allowed by CDFW and/or the relevant permitting authority.
- Capture the full genetic diversity of the population by collecting from individuals across the whole site, from as many maternal plants as possible, and from all sizes of seed-producing plants present. Collect seeds over multiple years, if possible, to increase genetic diversity of seeds collected.
- Collect only mature seeds and collect the full diversity of seed morphologies represented in the population.
- Track seed origin, or georeferenced latitude and longitude, of the parent plant from which the seeds were collected. Seed origin is important because genetic material and adaptations of seeds can vary widely between different locations. Offspring from seeds collected in a specific geography may not be genetically adapted for growth under environmental conditions in another location. Therefore, tracking their origin can help identify the geographic range suitable for growing the seed, increasing the odds of successful growth.
- Record accession information for seed collections, such as collector, date, location, habitat and associate species information, population demographics, and number of individuals from which seeds were collected.

Action LC&M 5.2: Develop Seed Storage Standards and Protocols

Stored seed will be important for use in ecological restoration/reforestation projects and assisted gene flow programs. Assisted gene flow programs could be used to enhance climate change resilience by translocating genetically adaptive individuals into western Joshua tree populations that do not currently support individuals with climate change adaptations. Seed viability and germination testing should be conducted prior to being put into storage and then retested for viability at regular intervals and before seeds are used to grow trees. Seeds should be stored following practices that promote high seed quality and increase seed longevity, as discussed in CPC (2019), such as:

- Keep accurate records, including documentation and accession information.
- Clean seeds prior to storage.
- Follow the recommended drying conditions.
- Package seeds from different maternal lines separately.



- Divide collected seeds into two batches and store at separate storage institutions to mitigate loss from natural or human-caused catastrophe.
- Adhere to the appropriate moisture targets to maintain relative humidity during storage.
- Store at the appropriate temperature.
- Monitor storage conditions and seed viability.

Action LC&M 5.3: Develop Nursery Standards and Protocols

Nurseries used to grow seedlings should be qualified and abide by established standards and protocols. When western Joshua tree plants are required for restoration projects or assisted gene flow attempts, viable seeds from the repositories should be grown in a qualified nursery until seedlings have established to a point where they have a greater chance of survival in the wild. Standards should include guidance on plant and seed distribution and tracking, how long juvenile plants should grow in the nursery before they are ready for outplanting, proper soil mixtures, watering schedules, recommended pot sizes, and how seedlings should be transported to identified restoration and outplanting sites. CDFW may develop nursery standards and protocols for western Joshua tree propagation and outplanting and include them in a future Conservation Plan update, if necessary.

5.2.3 Tribal Co-Management

CDFW recognizes that California's Native American tribes have long taken care of California's fish, wildlife, and plants and possess unique and valuable expert knowledge and practices for conserving and using these resources in a sustainable manner. Engaging in co-management is key for western Joshua tree conservation, and it is important to do so in ways that respect the interests and priorities of Tribes. The goal of co-management is to collaboratively share management functions and responsibilities for conservation of western Joshua tree and its habitat. Co-management provides an avenue to improve the conservation strategies by ensuring Tribes have access and pathways to implement their extensive life experience and unique understanding of the landscape. This also ensures their knowledge is incorporated into the Conservation Plan, as appropriate, while acknowledging that the Tribes choose what and how knowledge is shared.



Source: Native American Land Conservancy.



The process to develop meaningful co-management will require time that extends beyond the publishing timeline of the Conservation Plan. TEK shared by Tribes will influence management actions in the Conservation Plan. In turn, this tribal knowledge and guidance will inform specific standards for co-management of the species. The actions in this section describe establishing the framework needed to guide development, incorporation, and implementation of co-management functions and responsibilities.

MANAGEMENT ACTION TCM 1: ESTABLISH CO-MANAGEMENT PRINCIPLES

Collaboratively establishing core principles of co-management is an essential first step toward co-creating written agreements and long-term collaborations between the State and Tribes for western Joshua tree conservation. The goal of developing co-management principles is to guide future decision making and the elements of co-management practices between CDFW and Tribes. These core principles may include expectations and use of vocabulary that signifies the respect, commitment, intent, and responsibilities of multiple sovereign governments and integrate their respective management philosophies into mutually beneficial approaches to achieve a common set of goals. It is important that the co-management principles reflect tribal interests and priorities that complement other actions designed to implement WJTCA and to comply with other California laws. Therefore, development of co-management principles requires time and multiple discussions to achieve an approach and written agreement that works for both CDFW and Tribes. This will warrant ongoing work together after the initial adoption of the Conservation Plan.

After reviewing the Advisory Council on Historic Preservation's Policy Statement on Indigenous Knowledge and Historic Preservation (ACHP 2024), CDFW developed initial foundational commitments, which was requested by tribal members (FII CPI, pers. comm., 2024a). A draft of CDFW's foundational commitments is provided in Appendix G, "Foundational Commitments by CDFW for Developing Western Joshua Tree Conservation Plan Co-Management Principles with California Native American Tribes." The following topic summaries are addressed in the commitments:

- **Respect and relationship building.** Tribal knowledge, including TEK, will be treated with respect in all circumstances.
- **Valid and self-supporting knowledge.** TEK held by a tribe is a valid, sound, and self-supporting source of information and is an aspect of science.
- **Cultural and religious significance of Traditional Ecological Knowledge.** Conservation actions affect resources and properties that may be of religious and cultural significance to tribes.



- **Fair compensation.** If a state agency requests a tribe to provide TEK via research, survey, monitoring, or other efforts, the state agency and the tribe are encouraged to collaborate to identify potential funding mechanisms (which may include grants, to the extent permitted by applicable laws and regulations and sufficient resources) to fairly reimburse or compensate the tribe.
- **Transparency and records of tribal involvement.** Maximum transparency is essential to demonstrate how and what tribal priorities, including TEK and other sensitive information, will be documented in conservation project records.
- **Consultation timelines.** Timelines will reflect the complexity and nature of the undertaking and will recognize and seek to accommodate to the capacity of tribes throughout the decision-making processes.
- **Professional qualifications of tribal representatives.** The State recognizes that representatives of tribes have professional qualifications.
- **Managing and protecting sensitive tribal information.** The State will prevent or limit to the maximum extent feasible any inappropriate disclosure of confidential or sensitive information through all available mechanisms.



Source: Jessie Quinn, Ascent.



MANAGEMENT ACTION TCM 2: MUTUALLY DEFINE ELEMENTS OF CO-MANAGEMENT

Guided by the foundational commitments and co-management principles from Management Action TCM 1, "Establish Co-Management Principles," CDFW and California Native American tribes will co-create elements of the Western Joshua Tree Conservation Plan actions that incorporate tribal values, knowledge, priorities, and co-management on tribal land or other properties that contain resources or lands that may be of religious and cultural significance to Tribes. Mutually defining elements that should be included in co-management agreements to carry out both traditional and contemporary land stewardship practices promote meaningful collaboration and tangible outcomes. The following actions present elements that need to be addressed and agreed upon with Tribes for inclusion as co-managed conservation actions:

- Articulate a process for take of western Joshua tree by California Native American tribes in a culturally appropriate manner or for a specific purpose (FII CPI, pers. comm., 2024a).
- Continue consultation to provide a platform for Tribes to articulate aspects of TEK that include spiritual and cultural elements that may be new to agencies. Agencies should seek to consider these unfamiliar aspects of environmental protection and include them in guidance and policies (FII CPI, pers. comm., 2024b).
- Upon request of a California Native American tribe, collaborate on developing a process to relocate western Joshua trees to tribal lands when there is an opportunity to do so. For example, an opportunity may be related to coordinating with a developer that is openly seeking a pathway for relocating trees they are permitted to take.
- Encourage the presence of tribal cultural monitors at development or other ground-disturbing projects during the salvage, destruction, or removal of western Joshua trees as a measure to provide spiritual and cultural protection to western Joshua trees that are either taken or are affected in the project area. Ideally, tribal cultural monitors may also be trained as arborists working as desert native plant specialists to ensure proper salvaging methods are implemented (FII CPI, pers. comm., 2024b).
- Encourage employment of trained tribal members or local tribal conservation crews to support restoration and relocation efforts of western Joshua trees that are carried out with cultural and biological integrity.
- Collaborate with Tribes to identify where ethnographic studies are requested. Identify needs and potential resources, including but not limited to funding, so Tribes can carry out these studies.
- Identify priority lands of significance to individual California Native American tribes that may overlap with the biological criteria outlined in Management Action LC&M 1 so that they can be prioritized for long-term conservation and tribal stewardship.



- Collaborate and identify initiatives for tribal management of western Joshua trees, for example, supporting nurseries developed and led by California Native American tribes for western Joshua tree conservation.
- Incorporate California Native American tribes' TEK or provide supporting pathways for Tribes to implement TEK into western Joshua tree conservation strategies. For example, Tribes and CDFW will collaborate to incorporate cultural burning where it would be an effective tool (outlined under Management Action LC&M 3) for reduction of wildland fire risk or enhancement of western Joshua tree population conditions on tribal lands (ACTCI, pers. comm., 2024).
- Collaborate and identify all applicable and available sources of funding (including but not limited to the use of the Conservation Fund) to support tribal TEK implementation. Non-tribal parties assuming TEK implementation responsibility without explicit tribal permission would be a breach of intellectual property use and would be an extractive practice toward the California Native American tribes (FTBML, pers. comm., 2024).
- Develop written MOUs or other written collaboration agreements between CDFW, California Native American tribes, and relevant entities that would embody co-management principles (see Section 6.4, "Tribal Co-Management").

5.2.4 Research to Inform Long-Term Conservation

The scientific understanding of the long-term persistence of western Joshua tree is evolving as research continues. It is currently difficult to determine what ecological factors are influencing long-term persistence. These difficulties are centered around a lack of range-wide demographic data and the amount and frequency of recruitment necessary to maintain populations, uncertainty about the magnitude and timing of heat and drought stressors and how western Joshua tree will respond, and lack of information about the environmental tolerances and population dynamics of yucca moth (USFWS 2023). Therefore, additional research is necessary to fill these information gaps.

MANAGEMENT ACTION R&I 1: CONTINUE RESEARCH AND INFORMATION DEVELOPMENT

CDFW will encourage scientific research needed to inform effective conservation of western Joshua tree. There are currently numerous information gaps related to species genetics, distinct populations, demography, distribution, microbial associations, fire effects, climate response, and other factors that will be important to the conservation and management of western Joshua tree. Science and research are fundamental to long-term species conservation and for developing meaningful strategies to avoid, minimize, and mitigate threats to western Joshua tree. The seven-step approach recommended by Smith et al. (2023) for effective species



conservation in the face of climate change requires acquisition of information that is currently lacking for western Joshua tree. Research also provides a foundation from which to track the success of conservation and management actions and adapt management strategies as needed if monitoring indicates performance targets are not being met.

Action R&I 1.1: Identify Genetic Structure and Distinct Populations

Research focused on genetic studies is needed for western Joshua tree conservation. Preserving a species' full range of genetic variation is one of the pillars of conservation biology. Understanding the range of western Joshua tree's genetic variation is needed to inform effective conservation. Specifically, genomic research is needed following these steps, which are outlined in Smith et al. (2023):

- Quantify neutral diversity (i.e., genetic variation that is not affected by natural selection).
- Delineate genetically distinct populations.
- Identify climate-adaptive variants.
- Catalog adaptive diversity (i.e., range of adaptive traits that make individuals better suited to withstand the effects of climate change and other stressors).

Action R&I 1.2: Collect and Analyze Range-Wide Demographic Information

Develop a program of long-term, range-wide direct population and vegetation monitoring with emphasis on leading and trailing edges, and highest and lowest elevations of the species' range in California. Range-wide demographic information is needed to detect baseline population trends, and identify populations with high recruitment (i.e., addition of new adult plants that develop from seeds or sprouts) and those that do not appear to be recruiting/reproducing new individuals onsite at sustainable levels (i.e., plants are not reproducing at a sufficient rate to replace themselves generation after generation). Researchers should look for collaboration opportunities to develop standardized monitoring protocols to collect demographic data and abundance trends across the species' range, and to establish and maintain a database for data collected.

Action R&I 1.3: Develop Refined Species Distribution Models

Once genetically distinct populations have been delineated, research should use these data to develop refined species distribution models to help identify habitat suitable for western Joshua tree in the future (Smith et al. 2023). Potential refugia models should be validated with range-wide demographic data collection and other independent data sources (Smith et al. 2023).



Action R&I 1.4: Assess Adaptive Genetic Variation

Research should evaluate climate adaptive genomics. Once genetic variation of the species is better understood, researchers should identify subpopulations with adaptive traits that make them better suited to withstand the effects of climate change. Researchers should consider genome-wide association studies, as recommended by Smith et al. (2023), to identify adaptive genes responsible for greater tolerances to heat, drought, and other stressors. Genotypes (genome sequence data) of individuals that survive climate extremes and from populations with greater numbers of individuals with these adaptive traits should be prioritized for conservation and used for assisted gene flow (i.e., relocating genetically adaptive individuals or their propagules to areas already occupied by western Joshua tree to facilitate climate change adaptation).

Action R&I 1.5: Study Yucca Moth

Research should investigate the western Joshua tree's obligate pollinator, yucca moth's life history, environmental tolerances, distribution, local adaptation to host plant populations, and association genetics or other approaches to identifying adaptive genetic variation (see "Pollination" in Section 4.1.3, "Life History"). Researchers should produce range-wide species distribution models for yucca moth; determine the percentage of larvae in diapause that are lost to predation and other factors, such as project-related impacts; and study the cues that trigger metamorphosis.

Action R&I 1.6: Update Ecoregional Assessment

Update previous work done by Randell et al. (2010) and Parker et al. (2018) or other datasets to assess ecological intactness within the entirety of western Joshua tree's range.

Action R&I 1.7: Research Microbial Associations and Restoration Techniques

Research should investigate biocrust associations and arbuscular fungi associations and their role in western Joshua tree conservation, as well as other microbial associations that may be important to western Joshua tree survival. Research should include techniques to restore biocrusts and fungi associations important to western Joshua tree, such as biocrust salvage and transplantation in the wild, and propagation and inoculation techniques in nursery settings. Biocrusts could also be applied to fuel breaks to reduce exposed soil and limit invasive plant establishment while maintaining effective fuel breaks (Condon et al. 2023).

Action R&I 1.8: Investigate Fire Resilience/Postfire Recovery

Research should investigate fire resiliency of western Joshua tree and its nurse plants. Studies could include postfire monitoring of western Joshua tree recruitment, seed production of trees that survive, or basal sprouting. Sweet et al. (2023) suggests monitoring could include collecting baseline data in nurse plant cover at burned sites and following recruitment



patterns. Research should also investigate fire regime-plant community interactions, including the positive feedback loop invasive plants can have on promoting recurrent fire in western Joshua tree habitat (Brooks and Matchett 2006). This research should consider impacts of annual rainfall amounts to inform when invasive plant control is needed to protect western Joshua tree populations (Brooks and Matchett 2006).

Action R&I 1.9: Investigate Invasive Plant Control Techniques

Research should investigate the most effective ways to control the spread and abundance of invasive plant species to reduce fire risk through the following possible activities:

- Identify the most effective treatment strategies to manage invasive species that optimize benefits while minimizing negative tradeoffs under a range of conditions (Abella et al 2023; Reed et al. 2009; Darst et al. 2013; Tuma et al. 2016).
- Investigate indirect effects of herbicide application (e.g., indaziflam) in western Joshua tree habitats, particularly on western Joshua tree seedlings and nurse plants, as well as other native plants. Using this information, identify demographic effects and appropriate avoidance buffer standards and application methods for herbicide use in areas occupied by western Joshua tree (Abella et al 2023).

Action R&I 1.10: Research Long-Term Climate Effects

Research should investigate the effects of multiyear and multidecade climate variability patterns on western Joshua tree recruitment, survival, and population density. Research should aid the development of a large-scale demographic study that is needed to inform conservation acquisitions and other forms of protection.

Action R&I 1.11: Study Salvage and Relocation Methods

Evaluate and improve salvage and relocation methods to increase survival of western Joshua trees salvaged from development sites and transplanted to mitigation sites. Successful relocation can increase the persistence of western Joshua tree and ensure genetic diversity and adaptive variation are retained from populations lost to development.



Source: Drew Kaiser, California Department of Fish and Wildlife.



Action R&I 1.12: Investigate Assisted Migration

Research the feasibility, practicality, effectiveness, and risks of implementing future assisted migration and translocation into areas modeled as climate refugia to which western Joshua tree cannot naturally migrate (Figure 5-2) (Shryock et al. forthcoming). This information would be used to inform the usefulness of conserving lands that are outside the current range of western Joshua tree but that may become suitable for the species in the future under different climate scenarios. Western Joshua trees have low capacity to colonize newly available areas on their own because of their low dispersal ability and limited connectivity between currently occupied and potential future habitat. Assisted migration is frequently contemplated as a conservation tool to get species to newly available habitat; however, further study is needed to determine how this can be done successfully, cost effectively, and without adverse effects to the receiving ecosystems (Smith et al. 2023).

Action R&I 1.13: Study Basal Sprout Survival and Vulnerabilities

Research the resource needs (e.g., nutrients, water) and vulnerability of basal resprouts of western Joshua tree to increase persistence, for example, whether they may be vulnerable to drought or herbivory. Further study could include an analysis of survival data based on various environmental and biological factors and may include unburned reference sites for estimating background mortality. Analysis of these data is ongoing pending further funding support (Sweet et al. 2023). These data will enhance understanding of demographic trends. Research should help inform potential site-specific management needed to ensure growth and survival of individual western Joshua trees.

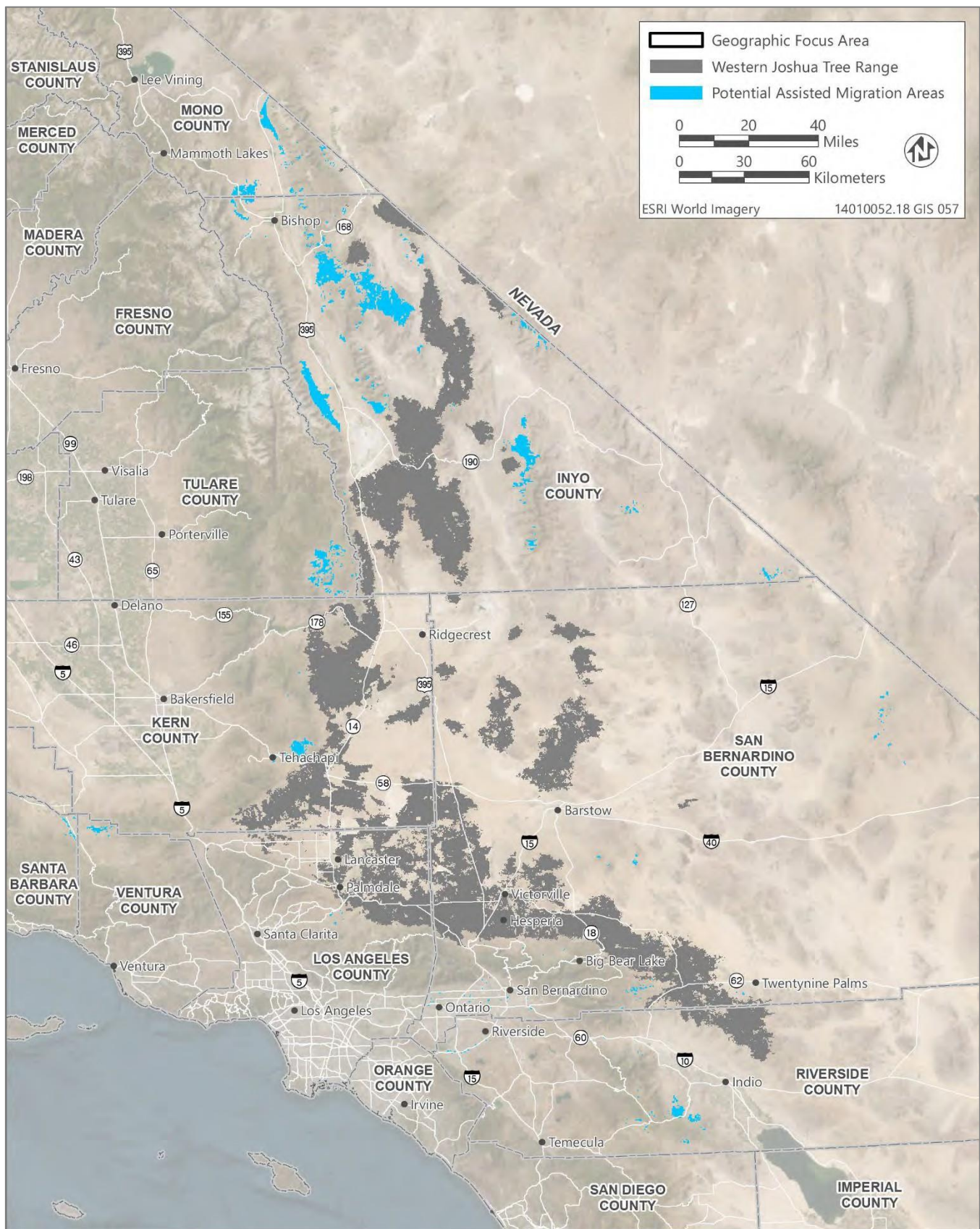
Action R&I 1.14: Tribal Ethnobotanical Studies

Ethnobotanical studies of the greater Mojave Desert and Great Basin regions and western Joshua tree habitat should be conducted if requested by a California Native American tribe. Ethnobotanical studies research how people of a particular culture and region use native plants for food, medicine, shelter, dyes, fibers, oils, resins, soaps, waxes, ceremonial purposes, and more (USFS 2024).

Action R&I 1.15: Develop Additional Fuel Treatment Methods

CDFW will coordinate with California Department of Forestry and Fire Protection (CAL FIRE) and others on developing additional fuel treatment methods for western Joshua tree habitat, including manual and mechanical treatment methods. Once developed, these treatment methods could eventually be included in the minimization measures in Section 5.2.1, above.





Source: Data received from Shryock et. al. in 2024; adapted by Ascent in 2024.

Figure 5-2 Potential Assisted Migration Areas



5.2.5 Education and Awareness

Education and awareness programs will enhance public understanding of western Joshua tree ecology, foster community pride and ownership of western Joshua tree conservation, connect people with their natural world, and inspire people to care about western Joshua tree and its habitat so they will support conservation of the species. A key priority will be ensuring that underserved and overburdened communities have access to—and can engage in—education and awareness programs and opportunities.

MANAGEMENT ACTION E&A 1: SUPPORT EDUCATION AND OUTREACH

Education and outreach programs that increase awareness and appreciation of the cultural, biological, and ecological value of western Joshua tree may provide long-term benefits for conservation of the species. Education and outreach programs can also promote opportunities for all communities to be involved with western Joshua tree appreciation, stewardship, and conservation.

Action E&A 1.1: Support Tribal-Led Educational Outcomes

CDFW will work with Tribes to support tribal priorities for education and outreach to their communities. The following are examples of undertakings or materials that may be developed to support tribal-led and tribal-designed efforts:

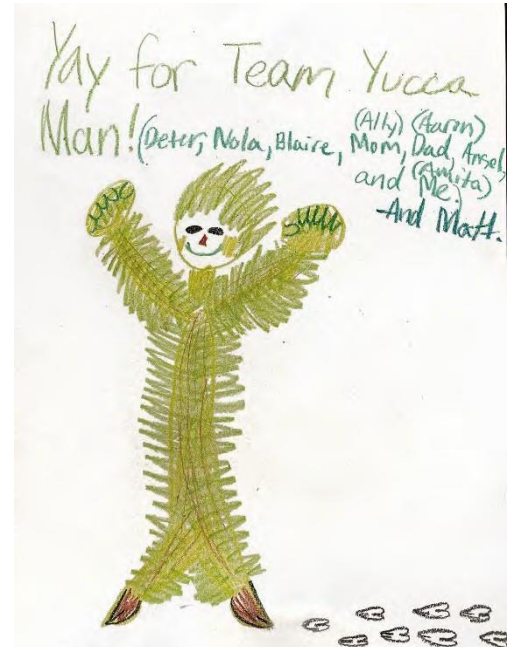
- ethnobotanical studies,
- lesson plans and curricula for various age groups,
- professional certification programs (e.g., for tribal cultural monitors, TEK practitioners, fire and restoration specialists),
- printed materials designed to strengthen cultural knowledge, and
- workshops.

Action E&A 1.2: Develop Publicly Distributed Information

CDFW will work with partners to develop accessible informational items for distribution to the public in multiple languages. The informational items may be handouts, brochures, presentations, digital materials, surveys, interactive web pages, or other outreach tools. Materials should be made available to communities throughout western Joshua tree's range in California with a dedicated focus on reaching underserved communities. Informational items may include the following materials:



- a handout describing how to care for western Joshua tree with information on:
 - watering (none unless they show signs of heat/drought stress),
 - invasive plant removal,
 - nurse plant species to incorporate into landscaping, and
 - signs of pests and solutions for pest infestations;
- science kits, handouts, and web-based western Joshua tree activities for schools to educate young citizens about western Joshua tree and its need for conservation such as:
 - coloring and activity sheets focused on western Joshua tree “fun facts” and biology;
 - a western Joshua tree junior ranger program based on collecting information about the species; and/or
 - a science kit developed in collaboration with local scientists and educators that includes hands-on activities through storytelling, art, or field trips, focusing on western Joshua tree and climate change impacts and solutions, such as a traveling trunk for Climate Kids with the Climate Science Alliance;
- materials and opportunities for the public to participate in western Joshua tree conservation efforts and education, such as:
 - a calendar of volunteer events (e.g., seed collection and restoration) and educational webinars,
 - iNaturalist citizen science project information, and/or
 - Information on recreating outdoors with western Joshua trees responsibly (see Action A&M 2.8, “Minimize Impacts from OHV Use and Outdoor Recreation”);
- collaborations to fund and open a western Joshua tree art gallery or exhibit that could be made available to the public within the geographic focus area of this Conservation Plan and virtually online; and/or
- interactive, web-based ArcGIS StoryMaps for western Joshua tree conservation and education.



Source: Amita Bubb.



Action E&A 1.3: Establish a Tree Adoption Program

CDFW will reach out to partners to encourage organizations to develop opportunities for an adopt-a-Joshua tree program. This program may include the following activities:

- establishing a program in which members of the public can “adopt” western Joshua trees salvaged from development sites and replant them on their private property, and/or
- providing signage that landowners can place on their property to identify “adopted” western Joshua trees.

Action E&A 1.4: Explore Authorizing a Specialized Interest License Plate

CDFW or other organizations may coordinate with the California Department of Motor Vehicles to develop a specialized western Joshua tree interest license plate. Monies generated from sales of the license plates could be added to the Conservation Fund.

Action E&A 1.5: Support Media Promotion

CDFW will coordinate with partner organizations to encourage development of newsletters and conduct western Joshua tree–focused social media campaigns.

Action E&A 1.6: Support Volunteer Opportunities

Cattle sheltered by western Joshua trees.

CDFW will support and encourage volunteer opportunities by promoting them on their website, social media, and printed media (e.g., handouts, newsletters). Special focus will be given to providing opportunities for underserved (i.e., communities that have historically received inadequate investment, resources, or services) and overburdened (i.e., communities that are disproportionately affected by pollution, environmental hazards, and health risks) communities and young

people to participate in and benefit from. This includes connecting these communities with natural areas containing iconic western Joshua trees.

The following volunteer programs may benefit western Joshua tree:

- National Park Service Volunteers-In-Parks (VIP) program,
- California State Parks Volunteer in Parks Program,
- Mojave Desert Land Trust volunteer programs,
- Transition Habitat Conservancy volunteer programs,



- CDFW-led seed collection/banking efforts,
- Yucca weevil tracking projects, such as Mojave Desert Land Trust's 2023 Yucca Weevil Watch hosted on iNaturalist, and
- western Joshua tree flowering/masting tracking projects hosted on iNaturalist.

Action E&A 1.7: Develop Guidance for Grazing Practices

CDFW will coordinate with agricultural organizations to encourage development of guidance regarding grazing best practices in western Joshua tree habitat and make it available to ranchers, rangeland managers, and others in the grazing community.

Action E&A 1.8: Encourage Urban Conservation and Recovery

CDFW will coordinate with local governments to encourage the development of educational materials for private residential and other property owners with western Joshua trees to participate in urban conservation and recovery efforts.

5.3 EFFECTIVENESS CRITERIA

The management actions described in this chapter are necessary to achieve the vision, purpose, and objectives of the Conservation Plan. WJTC requires that the Conservation Plan include objective, measurable criteria to assess the effectiveness of management actions. This section presents preliminary effectiveness criteria to help CDFW and the Commission measure how effective the management actions are in conserving western Joshua tree. These criteria are divided into two sets. One set of criteria is related to the overall conservation of western Joshua tree in California, and the other set of criteria is related to the effectiveness of the Conservation Plan and the use of the Western Joshua Tree Conservation Fund in making progress toward the vision of this Conservation Plan. Although these two sets of criteria are interrelated, the former set is more relevant to the Commission's decision-making authority under the California Endangered Species Act (CESA), and the latter is more relevant for assessing the effectiveness of this Conservation Plan and the Western Joshua Tree Conservation Fund as implemented by CDFW.



5.3.1 Effectiveness Criteria for Conservation of Western Joshua Tree in California

- Global greenhouse gas emissions are reduced to a level that ensures the species is not at risk of extinction from climate change impacts in California. The measurable details of this criterion should be based on science and therefore may change as information improves on critical levels of greenhouse gases in the atmosphere for western Joshua tree survival.
-
- Source: Anna Cirimele, National Park Service.*
- By 2033, when the Commission must reconsider whether listing western Joshua tree is warranted (Fish & G. Code, § 1927.9), 90 percent of land within the predicted climate refugia category under a low emissions scenario (SSP 2-4.5) that remains ecologically core, ecologically intact, or moderately degraded is permanently protected and managed to maximize ecological function for the species and its co-occurring native species. The measurable details of this criterion should be science-based and therefore may change as information improves on critical levels of greenhouse gases in the atmosphere for western Joshua tree survival. This criterion is also dependent on models of the predicted climate refugia category.
 - A large and genetically representative distribution of western Joshua tree is permanently protected and managed to maximize ecological function for the species, and its co-occurring native species. This criterion is dependent on science regarding western Joshua tree population genetics and on models of the predicted climate refugia category. The target for this criterion is 70 percent of priority conservation lands, as identified through Management Action LC&M 1, "Identify Priority Conservation Lands," across the full range of western Joshua tree in California by 2033.
 - Cooperative multiagency strategies are in place to reduce fire risk, aggressively fight wildland fires that threaten western Joshua trees, and fully fund restoration plans that will be implemented in response to wildland fires that kill a demographically significant number of western Joshua trees.
 - A program to monitor and assess western Joshua tree population status based on science has been developed and adopted, and assessments under this program demonstrate that western Joshua tree is sustainable in California for the foreseeable future.



5.3.2 Effectiveness Criteria for the Conservation Plan and the Western Joshua Tree Conservation Fund

- Initial draft priority conservation areas have been identified by December 2025.
- Every 2 years, beginning in 2026 (Fish & G. Code, § 1927.8, subd. (a)), the acreage of priority conservation lands preserved in perpetuity is greater than in the prior 2-year review period. CDFW will first focus on protecting priority conservation lands identified via Management Action LC&M 1, "Identify Priority Conservation Lands." CDFW will seek to protect an additional 3 to 5 percent of occupied western Joshua tree range every 2 years until the effectiveness criteria related to land protection for conservation of western Joshua tree in California are achieved.
- Conservation lands that are protected via the Conservation Fund have an endowment that is sufficient to fund management to maximize ecological function for the species and its co-occurring native species in perpetuity.
- At least one USFWS-approved written MOU or other written collaboration agreement has been established on federal land that protects and safeguards priority conservation lands representing at least 10 percent of occupied western Joshua tree range by 2033.
- At minimum, one written MOU or other written collaboration agreement incorporating co-management principles has been established between CDFW or other land managers and California Native American tribes by 2028.
- As measured every 2 years, more local jurisdictions have incorporated the Conservation Plan's A&M measures into adopted plans and policies.
- CDFW, local fire departments, CAL FIRE, and federal agencies have developed and implemented guidelines for avoiding direct impacts on western Joshua trees during wildland fire suppression and control activities, for fuel treatment implementation, and for preventing accidental ignition of fires during other activities, such as construction and recreation. Local fire departments in the geographic focus area, CAL FIRE, and federal agencies have entered into agreements with CDFW to implement the guidance. The number of jurisdictions implementing the guidelines increases every 2 years.

The preliminary criteria listed above are intended to help CDFW evaluate whether management actions are resulting in long-term conservation of the species. If they are not, it may be necessary to determine if and how the management actions should be modified or replaced.

As ongoing research develops metrics for demonstrating long-term persistence of western Joshua tree in California in the face of climate change, some effectiveness criteria may be modified or added when the Conservation Plan is reviewed and updated.



These initial effectiveness criteria help determine how successful implementing these important actions have been to conserve the species. These criteria will be used to determine if administration of the Western Joshua Tree Conservation Fund, development and execution of written interagency agreements or written MOUs with land management entities, and other actions are effective at achieving the vision, purpose, and objectives of the Conservation Plan.

5.4 PRIORITY MANAGEMENT ACTIONS FOR MANAGEMENT UNITS

Management units are outlined and delineated in Section 4.4, "Management Units," based on criteria for expected climate conditions, quality of habitat, existing management authorities, and land ownership. Organizing the landscape into management units based on these characteristics of the landscape will help guide the application of the Conservation Plan's management actions.

Although the management actions described in this chapter (which are summarized in Table 5-2 below) could apply to any management unit, certain management actions are recommended as priorities for specific management units (Table 5-3). For example, regardless of habitat conservation value, the management actions in Tribal Land units will prioritize establishing co-management principles and mutually defining elements of co-management. Some management actions could be applied throughout the species range without prioritization by management units. For example, conducting research and gathering information will help inform management in all management units in the future. Conducting education and outreach will similarly help educate the public and improve management in all management units.



Table 5-2 Summary of Management Actions

Management Action Abbreviation	Management Action Title
A&M 1	Avoid Direct and Indirect Impacts
A&M 2	Minimize Direct and Indirect Impacts
A&M 3	Minimize Impacts from Wildland Fire and Fire Management
LC&M 1	Identify Priority Conservation Lands
LC&M 2	Protect Priority Conservation Lands
LC&M 3	Manage Conservation Lands
LC&M 4	Restore and Enhance Habitat
LC&M 5	Establish Seed Banks and Nurseries
TCM 1	Establish Co-Management Principles
TCM 2	Mutually Define Elements of Co-Management
R&I 1	Continue Research and Information Development
E&A 1	Support Education and Outreach

Source: Compiled by Ascent in 2024.

Table 5-3 Priority Management Actions for Western Joshua Tree Management Units by Conservation Value Category and Predicted Climate Refugia

Management Unit Type ¹	Ecologically Core and Intact	Predicted Climate Refugia Category ² in Ecologically Core and Intact	Moderately Degraded and Highly Converted	Predicted Climate Refugia Category in Moderately Degraded and Highly Converted
Wilderness	A&M 3 ³ LC&M 3 ³ LC&M 4 ³	A&M 3 ³	LC&M 3 ³ LC&M 5 ³	LC&M 1 ⁴ LC&M 3 ³ LC&M 5 ³
Preservation with Light Recreation/ Other Use	A&M 1 A&M 2 A&M 3 LC&M 3 LC&M 4 LC&M 5	A&M 1 A&M 2 A&M 3	LC&M 3 LC&M 4 LC&M 5	LC&M 1 ⁴ LC&M 3 LC&M 4 LC&M 5 A&M 1 A&M 2 A&M 3
Defense	LC&M 1 LC&M 2 LC&M 3 LC&M 4 LC&M 5 A&M 1 A&M 2 A&M 3	LC&M 1 ⁴ LC&M 2 LC&M 3 LC&M 4 LC&M 5 A&M 1 A&M 2 A&M 3	LC&M 1 LC&M 2 LC&M 3 LC&M 4 LC&M 5	LC&M 1 ⁴ LC&M 2 LC&M 3 LC&M 4 LC&M 5 A&M 1 A&M 2 A&M 3



Management Unit Type ¹	Ecologically Core and Intact	Predicted Climate Refugia Category ² in Ecologically Core and Intact	Moderately Degraded and Highly Converted	Predicted Climate Refugia Category in Moderately Degraded and Highly Converted
Tribal Land	TCM 1 TCM 2 A&M 1 A&M 2 A&M 3 LC&M 3 LC&M 4 LC&M 5	TCM 1 TCM 2 A&M 1 A&M 2 A&M 3	TCM 1 TCM 2 LC&M 3 LC&M 4 LC&M 5	TCM 1 TCM 2 LC&M 1 ⁴ LC&M 3 LC&M 4 LC&M 5 A&M 1 A&M 2 A&M 3
Mixed Use	LC&M 1 LC&M 2 LC&M 3 LC&M 4 LC&M 5 A&M 1 A&M 2 A&M 3	LC&M 1 ⁴ LC&M 2 LC&M 3 LC&M 4 LC&M 5 A&M 1 A&M 2 A&M 3	LC&M 1 LC&M 2 LC&M 3 LC&M 4 LC&M 5	LC&M 1 ⁴ LC&M 2 LC&M 3 LC&M 4 LC&M 5 A&M 1 A&M 2 A&M 3
Little or No Protection	LC&M 1 LC&M 2 LC&M 3 LC&M 4 LC&M 5 A&M 1 A&M 2 A&M 3	LC&M 1 ⁴ LC&M 2 LC&M 3 LC&M 4 LC&M 5 A&M 1 A&M 2 A&M 3	LC&M 1 LC&M 2 LC&M 3 LC&M 4 LC&M 5 E&A 1	LC&M 1 ⁴ LC&M 2 LC&M 3 LC&M 4 LC&M 5 A&M 1 A&M 2 A&M 3

¹ Although actions described in this chapter can be applied to any management unit, the actions listed in this table identify the highest priority management actions for each unit.

² Recommendations for the predicted climate refugia category can be applied to any unoccupied future suitable habitat category that is identified.

³ Management activities on conservation lands may be allowed in wilderness areas or may be limited by the administering agency to protect wilderness values.

⁴ If priority conservation lands are identified in the predicted climate refugia category that is present within moderately degraded or highly converted land, management should prioritize avoiding and minimizing impacts.

Source: Compiled by Ascent in 2024.

In ecologically core and intact habitat that currently have land protections (i.e., Wilderness, Preservation with Light Recreation/Other Use), avoiding and minimizing impacts should be prioritized. Because management actions in wilderness areas are limited to protecting wilderness values, coordination with BLM, USFS, and NPS will be imperative. In addition, these areas should prioritize identifying, protecting, restoring, and managing priority conservation lands (Actions LC&M 3, LC&M 4, and LC&M 5), including collecting seed when appropriate. In Tribal Land units, management should follow recommendations for Wilderness and Preservation with Light Recreation/Other Use units, as well as implementing tribal focused management actions. In ecologically core and intact habitat that do not currently have protection or have minimal land protections (i.e., Little to No Protection, Mixed Use, and



Defense), management should focus on identifying, protecting, and managing priority conservation lands and avoiding and minimizing impacts.

Although some lands are classified as ecologically core and intact habitat in the ecoregional assessment, there may be opportunities in these areas to benefit from restoration based on finer-scale and site-specific assessments for specific projects or site-scale planning decisions (Randall et al. 2010). This would be determined on a site-by-site basis.



Source: Jeb Bjerke, California Department of Fish and Wildlife.

Within the moderately degraded or highly converted habitat that have minimal to no land protections (i.e., Little to No Protection, Mixed Use, Defense units), management should focus on identifying, protecting, managing, and restoring priority conservation lands and avoiding and minimizing impacts. For the Little to No Protection units categorized as moderately degraded or highly converted habitat, education and awareness should also be prioritized. In areas of moderately

degraded or highly converted habitat that have land protections (i.e., Wilderness, Preservation with Light Recreation/Other Use), management should focus on identifying, protecting, managing, and restoring priority conservation lands and avoiding and minimizing impacts. To protect wilderness values, some actions may not be allowed or may be limited in Wilderness units by the administering agency. In Tribal Land units, management should follow recommendations for Wilderness and Preservation with Light Recreation/Other Use units, as well as implementing tribal focused management actions.

Management of land in the predicted climate refugia category within ecologically core or intact habitat that have minimal or no protections (i.e., Little to No Protection, Mixed Use, and Defense units) should prioritize identifying, protecting, managing, and restoring priority conservation lands. Management units containing land in the predicted climate refugia category in ecologically core or intact habitat with land protections (i.e., Wilderness, Preservation with Light Recreation/Other Use) should prioritize avoidance or minimizing impacts to the greatest extent feasible. In Tribal Land units, management should follow recommendations for Wilderness and Preservation with Light Recreation/Other Use units, as well as implementing tribal focused management actions.

There may be areas that are degraded but have land in the predicted climate refugia category, so it should be determined whether restoring these areas would further the conservation of the species. Management should prioritize avoiding and minimizing impacts



on any priority conservation lands within degraded areas, or priority conservation lands that contain minimal or no protections that are also within the predicted climate refugia category. The recommendations for areas in the predicted climate refugia category also apply to land within the unoccupied future suitable habitat category where western Joshua trees could naturally disperse (Shryock et al. forthcoming).

In addition, opportunities for assisted migration in areas that are currently unoccupied by western Joshua tree but are potentially suitable for the species and modeled as future climate refugia should receive further evaluation if scientific evidence supports its feasibility and effectiveness. Assisted migration may have conservation value if questions about its effectiveness for species conservation are resolved, costs become feasible, and the owners and managers of receiving land are supportive.



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Appendix E.

Relocation Guidelines and Protocols

Western Joshua Tree Conservation Plan



Western Joshua Tree Relocation Guidelines and Protocols

California Department of Fish and Wildlife
July 2024

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Introduction

The California Department of Fish and Wildlife (CDFW) developed this document to provide guidance on how and when to relocate western Joshua trees (*Yucca brevifolia*) in order to minimize impacts to populations, prevent habitat fragmentation, and preserve connectivity corridors for gene flow and pollinator migration.

The Guidelines section of this document discusses the circumstances in which CDFW would consider including permit conditions requiring relocation of one or more western Joshua trees under the Western Joshua Tree Conservation Act (WJTCA). The Protocol section of this document provides a summary of best practices for relocating western Joshua trees and increasing the survival rate of relocated (salvage) western Joshua trees. Information on post-relocation maintenance, monitoring, and reporting is also provided. This document will be updated as needed based on the best scientific information available.

Western Joshua Tree Conservation Act Relocation Provisions

Section 1927.3, subdivision (a)(4)(A) of the California Fish and Game Code gives CDFW authority to require WJTCA incidental take permittees to relocate one or more western Joshua trees. Furthermore, pursuant to that subdivision, where relocation is required, permittees must implement reasonable measures required by CDFW to facilitate the successful relocation and survival of salvage trees. Relocation is deemed successful where the health of a salvaged western Joshua tree is stable or improving without any supplemental care after the post-relocation maintenance period. The relocation measures shall include but are not limited to:

1. A requirement that the salvage trees are placed in locations and with proper orientation to improve their chances of survival.
2. A requirement that salvage trees are relocated at a time that maximizes their chances of survival when feasible.
3. A requirement that a desert native plant specialist be onsite to oversee relocation.

Fish and Game Code section 1927.3, subdivision (a)(4)(B) states that CDFW may limit relocation requirements to certain size classes of trees.

This document is intended to fulfill the requirement of Fish and Game Code section 1927.3, subdivision (a)(4)(C) that by July 1, 2024, CDFW adopt guidelines and relocation protocols, developed in consultation with desert native plant specialists, based on the best available science, to relocate western Joshua trees successfully. Pursuant to Fish and Game Code section 1927.3, subdivision (g)(1), the permittee shall be legally responsible for ensuring the measures included in its WJTA ITP are implemented consistent with these guidelines. The permittee may, however, contract with the landowner of the relocation site(s) to conduct the post-relocation maintenance and monitoring activities required under its WJTCA ITP.

Subdivision (g)(2) of that section further states, "[u]nless specifically required by written agreement, a landowner that agrees in writing to allow western Joshua trees to be relocated onto land it owns shall not be liable for the continued survival of the western Joshua trees, shall not be required to manage or maintain the translocated western Joshua trees, and shall not be required to change existing land use practices, provided that the land use practices do not result in the taking, possession, sale, or further translocation of the western Joshua trees." While landowners accepting salvage trees are not responsible for maintaining the trees or otherwise ensuring the trees' continued survival, it is important to note that import, export, take, possession, purchase, and sale of salvage trees or any part or product thereof, is prohibited, except as authorized pursuant to the WJTCA.

The WJTCA also requires CDFW, by December 31, 2024, to prepare a Western Joshua Tree Conservation Plan in collaboration with the Fish and Game Commission, other governmental agencies, California Native American tribes, and the public and to incorporate in the plan, among other provisions, protocols for the successful relocation of Western Joshua trees. The Commission will then consider the plan and take final action on the conservation plan by June 30, 2025. During the one-year period between implementation of the July 1, 2024, relocation standards and finalization of the Western Joshua Tree Conservation Plan by June 30, 2025, CDFW will have an opportunity to supplement the collection of best available science and recommend appropriate amendments as part of the Commission's process of considering and taking final action on the Conservation Plan. These guidelines will be incorporated by reference into the Western Joshua Tree Conservation Plan.

Definitions

The following definitions are used in this document:

Bare root relocation – method for relocating a living western Joshua tree by excavating around the root ball of the tree to dislodge the tree from the ground. Any relocation method other than tree spade relocation (defined below) is considered bare root relocation for the purposes of this document.

Containerize – to place a salvage tree into a container, such as a plastic pot or tree box, for temporary storage.

Project site – the area(s) where project activities are expected to occur (e.g., access, staging, construction, etc.)

Recipient site – a salvage tree's (defined below) final planting location.

Relocation – the removal of a living western Joshua tree from the ground and transplantation back into the ground at another location (referred to as a recipient site).

Relocation area – an area with one or several recipient sites.

Retained tree – a living western Joshua tree that is located within the project site, may be avoided or minimally impacted by the project and will therefore not be relocated.

Root ball – a mass of soil that contains concentrated roots growing from the base of the stem of a western Joshua tree.

Salvage tree – a living western Joshua tree that is being, or has been, relocated. Each western Joshua tree stem or trunk arising from the ground shall be considered an individual tree, regardless of its proximity to any other western Joshua tree stem or trunk.

Size Class A – a western Joshua tree that is less than one meter in height.

Size Class B – a western Joshua tree that is one meter or greater, but less than five meters in height.

Size Class C – a western Joshua tree that is five meters or greater in height.

Tree spade – a specialized piece of heavy equipment that consists of hydraulically controlled spade blades that can encapsulate the root ball of a salvage tree, as well as adjacent soil.

Tree spade relocation – method for relocating a living western Joshua tree by using a tree spade to dig, transport, and replant a western Joshua tree and its root ball.

Best Available Science on Relocation

There are many accounts of successful western Joshua tree relocation (i.e., stable or increasing signs of tree health without any supplemental care after a period of maintenance), but little scientific research has been done to compare the relative success rates for different relocation techniques. Rather, most relocation efforts that monitor salvage western Joshua tree survivorship evaluate only one method of relocation (i.e., using hand tools for small trees and/or excavators or tree spade for large trees) (Wagner 2018, Balogh 2019, City of Palmdale 2024). The best available scientific information on how to achieve success when relocating western Joshua trees therefore comes from the experience of experts working in the field of restoration and Joshua tree relocation. In Bainbridge (2007), the author offers advice on relocating Joshua trees and other salvaged succulents, such as cacti and shrubs, based on his expertise and knowledge. The National Park Service (NPS) (Goodwin 2024) and a tree transplanting expert (Reynolds 2024) also provided CDFW with information relevant to the development of this document.

In addition, CDFW reviewed the results of known relocation projects. Bainbridge (2007) states that "Joshua trees often transplant well but require intensive aftercare and irrigation[.]" Bainbridge suggests that relocation is best done with machinery, but hand tools can also be used. Front loaders, excavators, and hydraulic tree spades are useful.

Tree spades work best in silty or sandy soils but using them is difficult in rocky soils. Salvaged trees can be placed in containers or immediately replanted but should be protected as much as possible from drying winds, heat, and sun. Bainbridge (2007) also mentions that yucca, such as western Joshua trees, seem to survive better if replanted in the same orientation they grew. Overall, Bainbridge (2007) shows the survival rates for salvage trees can be improved if the relocation work is timed carefully, the trees are handled gently, and there is good aftercare and irrigation in a holding facility or at the recipient site. Goodwin (2024) and Reynolds (2024) suggest that minimizing disturbance to the root ball and adequate care after trees have been relocated are the most important factors for successful relocation. Tree spade relocation of western Joshua tree minimizes impacts to roots and can have a success rate of greater than 90% with sufficient aftercare (City of Palmdale 2024, Goodwin 2024, Reynolds 2024). Bare root relocation of western Joshua tree causes more damage to roots and is reported to have a success rate of approximately 50-90% even with sufficient aftercare, based on preliminary findings of a monitoring period of 1-3 years (Goodwin 2024, Reynolds 2024). Beyond the initial 3-year monitoring period, however, success rates can decline (Graver 2024). This document describes additional methods that can be used to aid long-term survival and improve chances of reproduction events. However, there is no foolproof method that guarantees relocation success, and some mortality is always expected to result. Therefore, relocation is considered a method to minimize impacts to western Joshua tree populations, rather than a substitution for mitigation through the payment of fees.

The size and growth pattern of a western Joshua tree may also present additional challenges. Small trees, especially those salvaged through the bare root method, experience higher rates of mortality even with sufficient aftercare (Goodwin 2024). And, though it may be possible to relocate western Joshua trees over 7 meters in height, tree spades may be unable to sufficiently encapsulate the root ball for trees of this size (Reynolds 2024). These trees may also be difficult to stabilize to withstand high wind speeds after being relocated. Dense, clonal reproduction can also affect relocation success. Separating smaller trees from larger, parent trees that are connected through rhizomes below ground can result in higher mortality rates for those smaller trees (Goodwin 2024, Graver 2024).

Guidelines

Relocation Requirement Considerations

CDFW will determine whether relocation will be required under a WJTCA incidental take permit (ITP) during the permit application review process. Factors that CDFW may consider in making this determination for each project site include the following:

- Number of trees to be lethally taken (greater than 20 trees removed);
- Area of impacted western Joshua tree habitat within a project site (greater than 20 acres impacted);

- Avoidance and minimization measures proposed by the applicant to reduce project impacts to western Joshua tree;
- Quality of habitat on, and adjacent to, the project site (e.g., ecologically core or intact);
- Overall population health on the project site (e.g., declining versus stable or increasing);
- Whether the project is within predicted climate refugia for western Joshua tree.
- Extent of permanent project impacts;
- Density of clonal growth; and
- Anticipated temporal impacts of a project including operation or maintenance activities, where applicable.

When CDFW staff determine that a WJTCA ITP will require relocation of western Joshua trees, the applicant will develop a [Relocation Plan](#) for CDFW approval, including the number of trees to be relocated and the method(s) for relocation. Applicants will calculate the number of trees to be relocated based on the number of trees that will be lethally taken as confirmed by the approved census. The number of trees to be relocated will be based on the expected rate of relocation success for each method used, as well as the size class of each tree proposed for relocation, as explained below:

	Bare root relocation ¹	Tree spade relocation ²
Size Class A (<1 m)	30%	15%
Size Class B (≥1m and <5)	20%	10%
Size Class C (≥5m)	10%	5%

Table 1. Recommended western Joshua tree Relocation Percentages

The number of trees in each size class recommended for relocation under a WJTCA ITP should be rounded to the nearest whole number and be greater than zero, provided at least one tree in that size class will be lethally taken. Because tree spade relocation has a higher expected success rate than bare root relocation, the relocation of fewer trees is required to minimize project impacts and offset the expected mortality of salvage trees where the tree spade method is used. See "[WJT Salvage Requirement Calculator spreadsheet](#)" for assistance in calculating salvage tree numbers using a combination of methods.

¹ When conducted in accordance with this document, the expected success rate of bare root relocation is between 50 and 90 percent (Goodwin, J. 2024. Joshua Tree National Park. Discussion with J. Goodwin, Vegetation Branch Manager. *in.*; Reynolds, D. 2024. The Landscape Center. Discussion with D. Reynolds, Project Manger/ISA Certified Arborist. *in.*).

² When conducted in accordance with this document, the expected success rate of tree spade relocation is greater than 90 percent (Goodwin, J. 2024. Joshua Tree National Park. Discussion with J. Goodwin, Vegetation Branch Manager. *in.*; Reynolds, D. 2024. The Landscape Center. Discussion with D. Reynolds, Project Manger/ISA Certified Arborist. *in.*; City of Palmdale. 2024. Report of the City of Palmdale Joshua tree preservation program.).

Example:

Project A is expected to cause lethal take of 200 western Joshua trees: 100 Class A trees, 70 Class B trees, and 30 Class C trees.

- If the bare root relocation method is used, the Relocation Plan should propose relocating 47 trees: 30 Class A trees, 14 Class B trees, and 3 Class C trees.
- If the tree spade relocation method is used, the Relocation Plan should propose relocating 24 trees: 15 Class A trees, 7 Class B trees, and 2 Class C trees.
- If a combination of methods is used, one example of mixed methods may include:
 - Tree Spade: 10 Class A, 5 Class B, 1 Class C and,
 - Bare Root: 10 Class A, 4 Class B, 1 Class C

An approved Relocation Plan is an attachment to the WJTCA ITP and any changes after issuance of the associated WJTCA ITP will require amendment of the permit. If the permittee later wishes to relocate or remove any western Joshua tree that has been relocated on-site, the permittee must apply for a new WJTCA ITP.

Adjustments to Requirements

Upon review of a Relocation Plan, CDFW may, in its discretion, adjust the number of trees in a size class that must be relocated, including at the request of an applicant. Factors that may weigh in favor of an adjustment to the number of trees within a specific size class that must be relocated include:

- A higher number of trees in a different size class will be relocated;
- Trees that will be retained in place that will be minimally impacted;
- The size and physical characteristics of the available recipient sites, including available capacity for additional trees;
- The composition of the soil/substrate and feasibility of the proposed relocation method;
- The overall health of the western Joshua trees to be impacted; and
- The overall health of the western Joshua tree population around the project site.

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Where avoidance and relocation are not feasible (for example, when there are an extensive number of trees), revegetation and/or restoration of habitat can be utilized to minimize impacts. Revegetation and/or restoration undertaken pursuant to an existing statutory scheme requiring success criteria, monitoring, and financial assurances to ensure completion of the revegetation and/or restoration can satisfy this management action.

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Relocation Areas

The applicant should identify one or more relocation areas in the proposed Relocation Plan they submit to CDFW for approval. The permittee should first evaluate if salvage

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trees can be relocated on the project site and if any project design modifications can be made to accommodate salvage trees on site.

If salvage trees cannot be relocated on the project site, the permittee must propose one or more off-site relocation areas that can accept trees designated for relocation. Off-site relocation areas must be within occupied western Joshua tree habitat that has been degraded by impacts (e.g., human, wildfire). If available, priority should be given to relocation areas located within local preserves, parks, land trusts, and conservancies. Salvage trees should not be relocated where relocation activities could disrupt existing

ecosystem processes, the genetic integrity of healthy western Joshua tree populations or the natural communities upon which they depend. Each salvage tree should be relocated as close to its original location as is possible. Criteria for selecting off-site relocation areas include:

- In a natural vegetation community that supports western Joshua trees;
- Within 16 kilometers of the salvage tree's original location;
- Within 152 meters of the salvage tree's original elevation; and
- Occupied habitat that has been previously impacted by wildfire or human activities that have led to the removal or death of western Joshua trees.

Relocation areas that do not meet the criteria listed above may be approved by CDFW on a case-by-case basis.

Once an off-site relocation area has been identified, the permittee must provide CDFW with written permission from the landowner of the proposed relocation area(s) confirming that the permittee will have site access to implement the maintenance and monitoring measures required under the WJTCA ITP. The landowner must also confirm in writing that CDFW staff may access the property to conduct compliance inspections in accordance with the measures outlined in the WJTCA ITP.

This document does not provide guidance regarding how to implement or support the assisted migration of western Joshua tree. At this time there is insufficient research published on the geographic boundaries of genetically distinct populations and/or climate adaptive traits within populations that may be suited for assisted migration to expand western Joshua's tree's range or assisted geneflow to enhance a population's ability to adapt to climate change impacts. Assisted migration, assisted geneflow, and/or boundaries of genetically distinct populations may be discussed in future amendments to this document.

Relocation Plan

Where relocation is required, a Relocation Plan must be approved by CDFW prior to the issuance of an WJTCA ITP. The Relocation Plan may combine bare root and tree spade relocation methods and must include the following information:

- The contact information and qualifications of the desert native plant specialist(s) overseeing relocation;
- The date range when trees will be relocated. If salvage trees will be temporarily stored in containers, the plan must indicate when the trees will be replanted;
- The landowner's name, location name, and address or APN for each relocation area property;
- If salvage trees will be relocated outside of the project site, a signed, written statement from the owner of each relocation area granting permittee permission to relocate salvage trees to the relocation area property and access to implement any maintenance and monitoring measures;

- The unique identifier, size class, planned and contingency relocation methods, current and recipient site GPS coordinates (latitude/longitude in decimal degrees), overall health of each tree, signs of pest/human damage (if any), and a photo of each tree to be relocated, (see the [census instructions](#) for submitting photographs);
- If utilizing multiple receiver sites, the permittee must document the receiver site where each tree will be relocated using the unique identifier and recipient site coordinates;
- If tree spade relocation is proposed, additional trees must be identified for relocation as a contingency in case the tree spade relocation method is impractical due to rocky terrain or other issues. The number of additional trees that must be identified will vary on a project-by-project basis. The information described above must be provided for each additional contingency tree; and
- Any other pertinent information regarding relocation operations.

Each permittee may, but is not required to, use [CDFW's Relocation Plan template](#) and [spreadsheet](#), so long as the permittee's proposed Relocation Plan contains all the required information set forth above. Any questions regarding the development of the Relocation Plan should be discussed with CDFW staff prior to submittal in order to avoid project delays.

Protocol

Pre-Relocation

Selecting Trees for Relocation

Western Joshua trees that are in good health should be prioritized for relocation. Indications that a tree is in good health include where 60% or more of the tree's branches are living; minimal pest damage (no or few bore holes and/or less than 25% periderm [bark] stripping); recent signs of unrestricted hard growth; recent signs of flowering events, and/or strong vigor. Where a tree is greater than 7 meters in height, its size may limit its ability to be successfully relocated. Therefore, healthy salvage trees between 5-7 meters in height should be prioritized within Size Class C.

Siting

Trees identified for relocation should be clearly flagged or marked with a unique identifier and the recipient site should be identified before tree removal begins. Preferred and contingency methods for each relocation should also be identified (e.g., bare root relocation versus tree spade relocation) in advance. Each recipient site should be compatible with the corresponding salvage tree's relocation method (see Tree Spade Relocation under Digging/Tree Removal section below). The recipient site location should also be recorded using a Global Positioning System (GPS) unit and marked with pin flags or wood stakes that are clearly labeled with the unique identifier of the corresponding salvage tree. The permittee should identify a recipient site for each salvage tree that is: accessible for relocation and irrigation equipment, such as

water trucks or trailers; provides or enhances connectivity corridors; and mimics the density of the surrounding WJT population and is located at least 4.5 meters from the nearest western Joshua tree. If possible, recipient site locations should be chosen at random and be spatially balanced throughout the relocation area. Geographic Information System (GIS) tools can assist with this process.

Timing

When feasible, western Joshua trees should be relocated at a time that maximizes their chance of survival. (Fish & G. Code, § 1927.3, subd. (a)(4)(A)(ii).) The optimal time to relocate trees occurs in the fall when heat/drought stress is low and roots have adequate time to reestablish before the onset of hot, dry summer conditions. For bare root relocation, winter is a suboptimal but acceptable time to relocate trees but provides less time for roots to re-establish and may result in lower rates of survival. For tree spade relocation, there is a wider range of suboptimal but acceptable times to relocate trees because this method results in less root exposure and potential water loss through evapotranspiration as compared to bare root relocation. Relocating when trees are exposed to hot conditions for an extended period, should be avoided.

Bare Root Relocations

Winter	Spring	Summer	Fall
OK	Avoid	Avoid	Preferred

Tree Spade Relocations

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
OK	OK	OK	OK	Avoid	Avoid	Avoid	OK	OK	Prefer	Prefer	Prefer

Pre-Relocation Watering

In preparing for relocation, both the salvage trees and the recipient sites should be watered 24-48 hours in advance. An earthen berm 4-6 inches in height should be created around the trees and recipient sites to create water basins that ensure water saturates the soil around the root ball and recipient site. For bare root relocations, the perimeter of the berm should be no less than 24 inches from the base of the trunk. For tree spade relocations, the size of the berm should be slightly wider than the width of the tree spade to be used on that individual. The water basins should be filled with water to just below the top of the berm twice and allowed to fully drain between fillings. Root stimulant additives such as vitamin B1 and rooting hormone may assist in root regeneration but are not required. Root stimulant additives should be utilized according to product label recommendations.

Orientation

Prior to relocation, using a compass set to the correct declination, mark the north side of the tree identified for relocation with a water-based tree marking paint or other CDFW-approved means in a place that will not be impacted or obscured during

relocation operations (e.g., a small paint mark on the trunk 12 inches above ground level or ribbon tape tied to one of the branches on the north side of the tree). When setting a salvage tree in a recipient site, best efforts should be made to place the tree in its original orientation; however, this may not be possible based on the terrain of the recipient site.

Other Pre-Relocation Precautions

- Relocation operations should adhere to the American National Standards Institute Z133 Safety Requirements for Arboricultural Operations.
- Permittees should obtain all information necessary to avoid existing underground infrastructure at salvage and recipient sites prior to relocation (see [Underground Service Alert of Southern California \(DigAlert\)](#)).
- To prevent the spread of invasive species and pathogens, digging equipment should be clean and free from dirt and debris and sanitized with a 10% bleach solution prior to arriving at the site where trees will be salvaged.
- Depending on the method used, tree limbs may need to be trimmed to facilitate relocation. Limbs should only be trimmed as necessary to facilitate relocation.

Relocation

Digging/Tree Removal

If trees are in close proximity to each other (less than 18 inches apart at the bases of their trunks), all efforts should be attempted to relocate the trees together to avoid separation of trees that are connected through rhizomes below ground.

Bare root removal by hand – Relocations using only hand tools should only be done for trees that are less than 1 meter in height. The root ball and surrounding soil should be salvaged in a way that keeps the root ball as intact as possible. This can be accomplished by excavating a circular trench 10-12 inches deep, 1-2 feet from the base of the trunk. Once the trench is complete, hand tools should be used to undercut the root ball and sever the roots below. Only apply as much lateral pressure to the tree as necessary to expose roots for severing with hand tools. The cut surfaces on roots should be kept small to minimize root dieback and exposure to soil-borne pathogens.

Bare root removal by (non-tree spade) heavy equipment/excavator – As with bare root removal by hand, the root ball and surrounding soil should be salvaged in a way that keeps the root ball as intact as possible. There are different ways to accomplish this using an excavator, depending on the tree's size, soil conditions, and other factors. For trees that are less than 1 meter in height, an excavator with a bucket attachment at least 24 inches in width can be used to extract the tree and root ball in one scooping motion. The equipment operator should minimize incidental damage to the aboveground portion of the tree to the greatest extent possible. Root balls should be handled with care when they are unloaded from the bucket. For trees that are 1 meter or greater in height, a trench 18-24 inches deep should be excavated 2 feet from the base of the trunk. If the soil around the root ball stays intact and does not show signs of

fracturing, the tree should be firmly rigged to the rounded exterior of the bucket using nylon straps at least 4 inches in width (Figure 1). Additional cloth padding may be placed around the straps to prevent damage to the periderm. Straps should be rigged at multiple points along the main trunk of the tree to prevent excessive swinging once freed from the soil. Once firmly rigged, the root ball should be undercut using hand tools as safely as possible until all or most of the roots are severed. Snapping roots should be minimized, as much as possible.

If the soil around the root ball does not hold together and shows signs of fracturing and instability when excavating the trench, as is common in sandy soils, the excavator should be used to undercut the root ball as much as possible without causing the tree to fall freely to the ground.

The tree should then be rigged to the bucket attachment using the methods described above and gentle but increasing lateral pressure should be applied to the tree to dislodge the root ball and lay the tree down. Once the tree is resting on the ground, the straps may need to be adjusted in order for the tree to be picked up by the excavator.

Trees removed from the ground using the bare root method should be replanted or containerized within 24 hours of removal.



Figure 1 – Bare Root Removal: Removing soil around the root ball of a salvage tree using hand tools (left). Salvage tree being removed from the ground by an excavator (right).
(Photo credit: National Park Service)

Tree spade relocation – Tree spades come in different sizes based on the width of the soil surface that they can encapsulate (Figure 2). Tree spades can be used to relocate

trees of most sizes. However, they are not recommended for trees over 7 meters in height due to stabilization issues during high-speed wind events after relocation.

The following steps must be carried out sequentially, in a timely manner, and thoughtfully. Each western Joshua tree and corresponding recipient site should be evaluated for tree spade acceptability prior to digging. The desert native plant specialist should evaluate soil conditions to assess whether large rocks or boulders may prevent tree spade blades from fully encapsulating the root ball. This may be apparent by scanning the surface of the surrounding area or reviewing existing soil maps (see "Shallow Excavation Ratings" on [NRCS Web Soil Survey: https://websoilsurvey.nrcs.usda.gov/app](https://websoilsurvey.nrcs.usda.gov/app)). Tree limbs may be trimmed only where necessary to allow the tree spade blades to fully close around the tree. The tree spade size should be selected to ensure the blades do not come within 18 inches of the base of the trunk at ground level. Recipient sites should be dug immediately before, or no more than 4 hours prior to, tree extraction to prevent the soil from drying out and collapsing. Excavated recipient site dirt should be used to backfill the tree removal site where available. Open pits should be flagged with stakes and high-visibility ribbon tape and temporary fencing should be installed around any unattended open pits to prevent people or animals from falling in.



Figure 2. A salvage tree being removed from the ground using a tree spade (Photo credit: National Park Service).

Transporting Trees

If salvage trees are not going to be transported to recipient sites by hand or by the equipment used to extract the tree (e.g., by truck or trailer), precautions must be taken to avoid damage to the tree and root ball. Root balls should be loosely wrapped in burlap and kept moist during transport. Salvage trees should be supported at all times and not dropped or thrown. Salvage trees should be securely transported upright or at a slight angle. Salvage trees may touch other salvage trees during transport, but they should not be stacked or otherwise fully supported by other salvage trees. Salvage trees should be positioned in transport vehicles in a way that minimizes branch entanglement.

Planting Methods

Bare root relocations - The width of each recipient site hole should be approximately 12 inches greater than the width of the root ball. Root balls should fit snugly within their recipient holes to avoid stabilization issues. The depth of recipient sites holes should be 2-4 inches less than the height of the root ball to account for settling. If recipient site holes are dug too deep, they should be backfilled and compacted by foot or using hand tools. Salvage trees should be placed as close to their original orientation as the terrain will allow. Salvage trees should be supported when lowered into holes. Holes should be simultaneously backfilled with soil and water to eliminate air pockets and voids. Soil should be lightly compacted by foot or using hand tools.

Tree spade relocations - The salvage trees should be placed as close to their original orientation as the terrain will allow. If needed, soil should be backfilled and lightly compacted by foot or using hand tools to meet the grade of the surrounding soil surface.

Storage

If salvage trees need to be stored for later replanting, in-ground storage is preferred over containerizing. In-ground storage procedures should follow the pre-relocation water berm, planting, post-relocation water berm, and stabilization methods described herein. Salvage trees stored in-ground should be flagged for avoidance and/or fenced off.

If in-ground storage is not possible, each salvage tree should be placed in a container that is at least twice the size of the unrestricted root ball and includes drainage holes. The containers should be sanitized with a 10% bleach solution. The container should be filled using soil from the removal site if the salvage tree is being stored for less than 6 months or with a soil mix ratio of 100 parts organic potting soil to 160 parts coarse perlite to 200 parts washed concrete sand to 1 part "13-13-13" fertilizer (Goodwin 2024) if the salvage tree is being stored for longer than 6 months. The bottom one third of the container should be filled with soil mixture before placing the root ball into the container. Once the root ball is placed into the container, the remaining volume of the container should be filled with soil and water simultaneously to eliminate air pockets

and voids. Salvage trees should not be stored in containers for longer than 2 years unless approved by CDFW. Containerized salvage trees should be stored either upright or at a slight angle to improve drainage and prevent root rot. If weather forecasts predict wind gusts over 60 mph, containerized trees should be closely grouped and tied together 24 hours in advance for added stability. If containerized salvage trees are pushed over, they should be promptly righted and stabilized using the methods described below for the duration of the storage period. Containerized salvage trees should be maintained and monitored following the methods described below. If trees show signs of drought stress, watering frequency may need to be increased. Containerized soil should always be allowed to thoroughly dry out before rewatering. Containerizing a salvage tree that has been removed from the ground using the tree spade method in a container would eliminate the benefits from this relocation method; therefore, salvage trees removed from the ground using the tree spade method should always be stored in the ground.

Post-Relocation

Water Basins

An earthen berm at least 4 inches in height should be created around each salvage tree following relocation. The top of the berm should be level. For bare root relocations, the perimeter of the berm should be no less than 24 inches from the base of the trunk. For tree spade relocations, the perimeter of the berm should be the width of the tree spade.

Stabilization

Stabilization material should be installed for salvage trees that are greater than 3 meters in height and for trees that are less than 3 meters in height with a tree height to canopy width ratio that exceeds 2:1. For example, a 2-meter-tall tree with a canopy width greater than 1 meter should have stabilization material installed. Non-abrasive guying materials, such as Arbor Ties, should be attached to three equidistant lateral ground-point anchors outside of the water basin. Guys should be taut but allow for some movement so they do not cause friction in light to moderate wind conditions.

Identification

Each salvage tree should be clearly flagged with tape ribbon or a metal tree tag, and labeled with a unique identifier (e.g., #1, #2, #3) and the relocation date (or the date when first removed from the ground for containerized salvage trees) in the following format: MM/DD/YYYY. Each tree tag should be loosely secured to the main trunk of the tree, rather than nailed directly into hard growth, and should be visible from the south. Each western Joshua tree stem or trunk arising from the ground shall be considered an individual tree requiring flagging, regardless of its proximity to any other western Joshua tree stem or trunk.

Recordation

A GPS unit should be used to record the location of each salvage tree's recipient site. The relocation method (bare root – hand, bare root – excavator, or tree spade) should also be recorded, along with a color photo of each tree taken from the south of the tree facing north. The picture should include the entire tree.

Maintenance and Monitoring

Where relocation is required under a WJTCA ITP, it is the permittee's responsibility to ensure the maintenance and monitoring measures set forth below are implemented and as required in the permittee's WJTCA ITP.

Site Visits

Site visits should be conducted by desert native plant specialists to determine maintenance needs for relocated trees according to the following schedule:

Year 1

- Months 0-3, once every two weeks.
- Months 4-12, once per month.

Year 2

- Months 13-24, every other month.

Year 3

- Months 25-36, every other month only for trees showing signs of declining health. At the end of the 3-year maintenance period, all trees should receive a final site visit and be assessed according to the Completion Report section below.

During site visits, desert native plant specialists should assess and record maintenance needs for each salvage tree. They should also have a site map showing the locations of all salvage trees, a GPS device to confirm salvage tree locations, and notes and photos from previous visits, and they should be prepared to address maintenance needs during site visit or shortly thereafter.

Watering

During the months of May to September, salvage trees should only be watered during site visits if the total rainfall (or snowfall equivalent) for the region within which the recipient site is located is less than 0.4 inches within the previous 7 days. During the months of October to April, salvage trees should only be watered during site visits if the total rainfall (or snowfall equivalent) for the region within which the recipient site is located is less than 0.3 inches within the previous 7 days. Regional precipitation models may be used in determining rainfall amounts; however, rain gauges within, or adjacent to, relocation areas provide the best indicator of precipitation totals. Water basins should be filled to the top of the berm, but not allowed to overtop the berm.

Tree Health

Tree health should be assessed by a desert native plant specialist and recorded for each salvage tree during site visits. Tree health should consider signs of new leaf growth, branch loss, signs of flowering/fruiting, signs of pest/human-caused damage, leaf discoloration, restricted hard growth, overall vigor, and other indicators worth noting. If salvage trees are showing signs of increasing health after two years of maintenance, they do not need to be visited during the third year (see reporting requirements below), except for the final site visit.

Invasive Plant Removal

Invasive plants should be controlled and removed within the water basin. Removal should occur before invasive plant seeds reach maturity. Invasive plants should be removed through mechanical methods and hand pulling or with hand tools, rather than by chemical means, and appropriately disposed of. In removing invasive plants, care should be taken to not damage salvage tree roots. A list of common invasive plant species can be found on the California Invasive Plant Council Invasive Plant Inventory (Cal IPC Inventory) website at: <https://www.cal-ipc.org/plants/inventory/>. Native plants should be retained where possible.

Maintenance of Berms, Stabilization Supports, and Identification Markers

During site visits, berms should be checked for height and any breaks that would allow water to escape from the water basin. Stabilization supports should be checked for damage and tightness. If relocated trees are showing signs of leaning, stabilization supports should be added or adjusted. Identification markers should also be checked for intactness, legibility, and maintenance needs.

Completion Activities

During the final site visit at the end of the 3-year maintenance period, berms, stabilization supports, and identification markers must be removed from the relocation area.

Reporting

Where relocation is required under a WJTCA ITP, it is the permittee's responsibility to ensure the reporting measures set forth below are implemented. Where relocation is voluntary, CDFW requests that the permittee provide the same reporting information to CDFW to better inform updates to these guidelines and relocation protocols.

Post-Relocation Reporting

When a WJTCA ITP requires relocation of western Joshua trees, the permittee must submit a post-relocation report to CDFW no more than 30 days after relocations are completed. The post-relocation report should include the following:

- The date range when relocation operations occurred.
- For each salvage tree:

- The unique identifier and recipient site coordinates;
- The final recipient site, including GPS coordinates (latitude/longitude in decimal degrees);
- The relocation method used;
- The height and diameter of the post-relocation water basin constructed;
- Any stabilization supports installed;
- Any major damage, including any necessary limb trimming, that occurred during relocation;
- Any deviation from the tree's original orientation;
- Any root stimulant additives used in pre- or post-relocation irrigations; and
- A photo of the tree facing north, with the unique identifier in each file name.

Maintenance Reports

When a WJTCA ITP requires relocation of western Joshua trees, the permittee must submit annual reports detailing the 1-year and 2-year maintenance periods, as appropriate, to CDFW. Maintenance reports should include the following information:

- The date(s) when site visit(s) occurred;
- The contact information and qualifications of the desert native plant specialist(s) performing tree assessments;
- Information for each salvage tree regarding the following:
 - The unique identifier and recipient site coordinates;
 - Whether the tree is alive or dead;
 - Dates of supplemental waterings;
 - Identity and estimated number of invasive plants observed/controlled and the methods used;
 - Any signs of pest/human damage;
 - Any signs of declining tree health;
 - Any maintenance conducted to repair, replace, add, or adjust berm, stabilization supports, and/or identification markers;
 - A photo of the tree facing north, with the unique identifier in each file name; and
 - At the end of the 2-year period, the reasons for discontinuing maintenance on trees showing stable or increasing health, such as new leaf growth, flowering/fruitletting, good leaf color, no signs of pest/human damage, and/or unrestricted hard growth.

Completion Report

A completion report must be submitted to CDFW no more than 30 days after the end of the 3-year maintenance period. The completion report must contain the following:

- The date when the final site visit occurred;

- The date when berm/stabilization materials/identification markers were removed;
- The contact information and qualifications of the desert native plant specialist(s) performing the final assessment;
- Information for each salvage tree regarding the following:
 - Whether the tree is alive or dead;
 - Any damage that occurred during or after relocation;
 - Any signs of declining health;
 - Any signs of pest damage; and
 - A photo of the tree facing north, after berm, stabilization materials, and identification markers are removed, with the tree's unique identifier in each file name; and
- Any recommendations that may help to improve tree relocation methods.

Literature

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REED FAMILY COMPANIES

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July 10, 2025

Erika Zavaleta, President
California Fish and Game Commission
715 P Street, 16th Floor
Sacramento, CA 95814

RE: Request Meeting to Discuss Western Joshua Tree Permit Fee Impacts to Community Development.

Dear President Zavaleta and Members of the Commission:

I am writing to you on behalf of Reed Family Companies, LLC., (RFC) a group of family-owned and operated companies that have been trusted leaders in the asphalt and concrete paving industry, equipment manufacturing, and more since 1944. Our company consists of six family-owned and operated entities: Basic Resources, George Reed, VSS International, VSS Macropaver, 7/11 Materials, and VSS Emultech, operating throughout Eastern and Northern California.

Reed Family Companies is reaching out to address an issue of great importance to our Canebrake Aggregates Quarry and the northern Kern County community—the potential listing of the Western Joshua Tree as an endangered species. As a community member, I am deeply concerned about the significant negative impacts this listing may have on our local economy, environment, and way of life. The Western Joshua Tree is an iconic symbol of our region, and while its conservation is essential, we must also consider the implications for our community members who depend on the land for their livelihoods.

Reed Family Companies has two main concerns:

1. **Existing Projects and Homes:** Pre-existing homes and infrastructure should be considered as having met prior avoidance and minimization requirements under earlier laws. Mitigation and reclamation should remain the primary requirements for these operations. Our Canebrake quarry has an established mining permit and reclamation plan. Listing the Western Joshua Tree will have the potential to make large portions of the mineral reserves uneconomic to mine, thus removing locally sourced construction materials from the region. This removal will mean trucking construction materials from outside the region which will dramatically increase all construction costs and have negative impacts on climate change. Since the greatest threat to the Western Joshua Tree is climate change, ensuring locally source construction materials are available is the best way to protect the species.
2. **Unfair Take Fees Depending on Region of Operation:** We would like to address the disparity in fees assessed between the unbounded region where our Canebrake quarry is located and the fees assessed south of us in the

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bounded region. We see no scientific justification or principle that would require us to pay such exorbitantly higher fees than our southern counterparts. It is unfair to assess these higher fees.

AB 1008 Requirements:

Tree Size	Bounded Lower Fee Area (per tree)	Unbounded Higher Fee Areas
>5 Meters	\$1000	\$2500
<5 Meters	\$300	\$500

The financial impacts of this listing are already having devastating effects on 7/11 Materials Canebrake mine's economic reserves and operating life. Because of the presence of the Western Joshua Tree, most of our future expansion areas, which are fully permitted, will become uneconomic to mine. This will dramatically reduce the available construction materials in the Lake Isabella and Ridgecrest areas, leading to significantly increased prices for road maintenance and construction in general.

The proposed listing could lead to restrictive regulations that may affect local businesses, land use, and development plans. It is crucial that we find a balanced approach that ensures the protection of the Western Joshua Tree while also safeguarding the economic stability and future growth of our community.

While we understand that the initial plan cannot address all concerns, these two items should be considered and implemented in the initial draft. We welcome the opportunity to further discuss our recommendations with the Commission or Fish and Wildlife staff.

Warm regards,

Tom Ferrell
Environmental Manager
Reed Family Companies

From: Rose Winn <rwinn@cal4nrc.com>

Sent: Thursday, July 10, 2025 4:44:42 PM

To: FGC <FGC@fgc.ca.gov>

Subject: C4WDA Public Comment Submission: Western Joshua Tree Conservation Plan

You don't often get email from rwinn@cal4nrc.com. [Learn why this is important](#)

WARNING: This message is from an external source. Verify the sender and exercise caution when clicking links or opening attachments.

Good afternoon,

California Four Wheel Drive Association (Cal4Wheel) is writing to provide the attached comment letter for the California Department of Fish and Wildlife proposed Western Joshua Tree Conservation Plan (WJTCP).

Cal4Wheel would like to be considered an interested public for the WJTCP. Information can be sent to the following address and email address:

Rose Winn
California Four Wheel Drive Association
8120 36th Avenue
Sacramento, CA 95824
rwinn@cal4nrc.com

Thank you,

Rose Winn | Natural Resources Consultant

California Four Wheel Drive Association
559.862.6382 | rwinn@cal4nrc.com
cal4wheel.com





July 10, 2025

Public Comments Processing
California Fish and Game Commission
P. O. Box 944209
Sacramento, CA 94244-2090

This comment is submitted via the designated CA Fish & Game Commission email: fgc@fgc.ca.gov

Re: Western Joshua Tree Conservation Plan

To Whom It May Concern:

California Four Wheel Drive Association (Cal4Wheel) is writing to provide feedback for the California Department of Fish and Wildlife (CDFW) proposed [Western Joshua Tree Conservation Plan](#)¹ (WJTCP). The entirety of our members and supporters live and/or recreate in areas that have been directly impacted by implementation of the [Western Joshua Tree Conservation Act](#)² (WJTCA), and implementation of the pending review of Western Joshua Tree as a candidate for listing under the California Endangered Species Act. This letter of comment shall not supplant the rights of other Cal4Wheel agents, representatives, clubs, or individual members from submitting their own comments; CDFW should consider and appropriately respond to all comments received for the WJTCP.

Cal4Wheel is a non-profit organization that champions responsible off-highway vehicle (OHV) recreation and encourages a strong conservation ethic and individual stewardship of public lands for the benefit of all recreationists. We accomplish this by educating and empowering our members to secure, protect, and expand shared outdoor recreation access and use by working collaboratively with natural resource managers and other recreationists. As active conservationists and vested stewards of public lands, Cal4Wheel members care deeply about the preservation and protection of all flora and fauna that reside in California's public lands. Cal4Wheel members are actively involved in efforts to maintain and improve the quality of habitat for wildlife across the state, including leading volunteer cleanup crews to remove trash and foreign debris from wildlands, conducting road and trail maintenance to prevent degradation of habitat, creating and repairing signage to ensure recreationists remain on designated routes, planting trees, removing weeds and invasive plant species, and rehabilitating natural habitat for wildlife. Cal4Wheel members continually contribute to the conservation and health of California's public lands to ensure that everyone may enjoy the state's beautiful wildlands now and for all generations to come.

Our members use OHVs and other motorized and unmotorized methods to enjoy federally and state managed public lands throughout California and the United States. Our members and supporters live in gateway communities near public lands or travel across the country to visit public lands to access outdoor recreation destinations. Cal4Wheel members visit innumerable areas of public lands that have been impacted by closures and restrictions to public access as a result of species and habitat protections for the Western Joshua Tree (WJT). Cal4Wheel members and supporters have concrete, definite, and immediate plans to continue such activities within WJT inhabited public lands throughout the future.



GENERAL COMMENTS

We support any additional comments that encourage CDFW to objectively weigh all points of impact from the proposed WJTCP – not only impact on the WJT, but also, impact on:

- Other species of flora and fauna that reside in the same habitat as the WJT
- The general health and resilience of public lands where WJTs reside
- The real and impending increased risk of catastrophic wildfire if additional restrictions on human activity are imposed on listed WJT habitat
- The social and economic welfare of humans who reside, conduct commerce, and recreate within the range of habitat occupied by the WJT
- The accurate, factual impact of various human activities on the health of current and potential habitat and conservation of the WJT, including, but not excluded to, OHV recreation
- The imperative for CDFW to use the most current, accurate, and best available science to clearly demonstrate the need and justification for approving and implementing the WJTCP

We encourage CDFW to exercise caution in advancing a decision to approve and implement the proposed WJTCP. We strongly advocate against any decision to advance the WJTCP toward approval without first analyzing the full scope of impact for each bulleted item noted above, as well as the additional details noted within the following contents of this letter. While the health and welfare of the WJT is indeed important, the health and welfare of all life that shares habitat with the WJT is equally important. The stated mission of the FWS is:

"To manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public."

With emphasis on ensuring "use and enjoyment by the public," we strongly urge CDFW to scrutinize and revise the proposed WJTCP in full alignment with the CDFW mission.

Cal4Wheel has reviewed the proposed WJTCP and asserts that the CDFW is legally and procedurally compelled to revise the Plan as a consequence of:

1. Arbitrary and capricious negative impacts to public land access and recreation
2. OHV use and outdoor recreation are already compatible with WJT conservation
3. Cascading and compounding negative impacts from restrictions to OHV access
4. Social and economic impacts
5. Implications resulting from overturn of the Chevron Doctrine

ARBITRARY AND CAPRICIOUS NEGATIVE IMPACTS TO PUBLIC LAND ACCESS AND RECREATION

The WJTCP proposes overly broad avoidance buffers, including minimum 56.7 m (186 ft) around individual mature trees, and 5-mile landscape buffers around occupied habitat (Vol I, p. 1 2; App. D 7). These excessive zones will:

- Eliminate OHV access along designated routes and impede access to open riding areas, as entire corridors fall within buffer zones.



- Close informal staging and dispersed camping sites, forcing users into narrower zones, increasing environmental degradation at those sites.
- Fragment shared-use trail networks used by hikers, equestrians, and mountain bikers.
- Disproportionately burden elderly and physically disabled users, by removing accessible parking areas and graded loops without equally maintained alternative sites. The extensive 186 ft clear zones will likely encompass improved accessible facilities, violating ADA Title II and Cal. Gov. Code §11135, which guarantee reasonable public access to natural areas.
- Buffer zones requiring up to 186 ft of avoidance around mature Joshua trees, and closures within mapped tree populations, threaten to eliminate many traditional routes and staging areas.
- The NOIA recognizes potential for “significant disruption to OHV route networks” and increased user conflicts, as constrained areas funnel riders into a shrinking permitted footprint.

Other negative impacts to public land access and outdoor recreation are vast. Recreational staging, dispersed camping, and trailheads near trees may be closed, thereby forcing users deeper into backcountry areas and fracturing cohesive trail systems. Within federally- and state-managed public lands, visitor experience could be negatively impacted by a patchwork of no-go zones across landscapes. Fragmented access may trigger de facto decommissioning of legal rights-of-way (including OHV, hiking, and equestrian corridors) if routes pass through designated conservation buffers. Of critical note: road closures enacted without clear evidence may invite legal challenges from users or municipalities on constitutional and administrative grounds.

Buffer Zones Lack Scientific Justification

The CDFW's own status review concluded Western Joshua trees are *“relatively widespread and abundant with no immediate risk of extinction”* (CDFW Status Review 2022³). Yet the WJTCP imposes blanket 186-ft and 5-mile buffers around broad landscape zones. This is an excessive footprint of impact that will cause a myriad of restricted and banned recreational and economic uses across the many hundreds of thousands of acres of public lands that host WJT habitat. Such gross overreach mirrors procedural failures seen in *Sierra Club v. Babbitt* (1995), where courts invalidated habitat protections lacking robust scientific underpinning. The CDFW should heed best available science and legal precedent and subsequently refrain from adopting measures that exceed science-based necessity.

Legal Risk / Protections from Overreach through Existing Statutes & Public Resource Code

Under the [Federal Land Policy and Management Act](#)⁴ (FLPMA) and the [National Forest Management Act](#)⁵ (NFMA), recreation and multiple-use mandates require agencies to justify closures with compelling resource threats; unsupported closures may be struck under the [Administrative Procedures Act](#)⁶ (APA) “arbitrary and capricious” standard. California’s [PRC §5003.1](#)⁷ and [Americans with Disabilities Act Title II](#)⁸ require maintaining recreational access and accessibility. ADA Title II mandates that state and local governments ensure recreational facilities and programs are accessible to people with disabilities. This includes providing equal opportunities to participate in all recreational activities, which may necessitate modifications to policies, practices, or the environment to remove barriers. Blanket buffer rules forcing closure of ADA-accessible staging sites, or legally and scientifically unjustified restrictions and closures to motorized access to public lands, exposes the CDFW to ADA litigation.



Federal case law makes clear that conservation actions lacking credible science are vulnerable to litigation. In [*Sierra Club v. Babbitt* \(1998\)](#)⁹, the court ruled that the U.S. Fish & Wildlife Service failed to ensure its habitat protections were backed by sufficient evidence and NEPA analysis, remanding the rulemaking. Similarly, *Center for Biological Diversity v. BLM* (Mojave OHV expansion, Judge Illston, 2009) struck down restrictive closures because the BLM's habitat claims were unsupported and impacts insufficiently analyzed. Agencies implementing overly restrictive conservation buffers risk such lawsuits - especially when public access and recreation are curtailed without solid empirical support.

That solid empirical support is wholly lacking in the WJTCP proposition for excessive buffer zones, consisting of minimum 56.7 m (186 ft) around individual mature trees, and 5-mile landscape buffers around occupied habitat. "It is rudimentary administrative law that discretion as to the substance of the ultimate decision does not confer discretion to ignore the required procedures of decision making." *Bennett*, [520 U.S. 154](#), 117 S. Ct. at 1166; See *SEC v. Chenery Corp.*, [318 U.S. 80](#), 94-95, 63 S. Ct. 454, 462, 463, 87 L. Ed. 626 (1943).

When an administrative agency fails to provide an adequate basis in the Administrative Record for its action, such action is arbitrary and capricious. See e.g. *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, [463 U.S. 29](#), 43, 103 S. Ct. 2856, 2866, 77 L. Ed. 2d 443 (1983); *Nat'l Nutritional Foods Ass'n v. Weinberger*, 512 F.2d 688, 701 (2nd Cir.) cert. den., 423 U.S. 827, 96 S. Ct. 44, 46 L. Ed. 2d 44 (1975) (stating that, "even under the 'arbitrary and capricious' standard agency action will not be upheld where inadequacy of explanation frustrates review"); and *AT & T v. FCC*, 974 F.2d 1351 (D.C.D.C.1992) (agency action will not be upheld where agency has failed to offer a reasoned explanation of the record). Thus, although under the "arbitrary and capricious" standard, a reviewing court may not set aside an agency action that is rational, based on consideration of the relevant factors and within the scope of the authority delegated to the agency by the statute, "the agency must examine the relevant data and articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made.'" *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. at 43, 103 S. Ct. at 2866.

The evidence of scientific and policy inconsistencies between the CDFW 2022 Status Review of the WJT, and the CDFW 2025 WJTCP, is glaring. The CDFW status review concluded that the WJT is not currently threatened or endangered in California. That review noted stable - and even robust - populations across most of the Mojave, with any habitat loss limited in magnitude. Public comments on the proposed conservation plan similarly underscore the tree's abundance. If species conservation measures (closed buffers, staging restrictions) outpace scientific justification, they risk regulatory overreach and may be deemed "arbitrary and capricious" under the APA. Under National Environmental Policy Act (NEPA) requirements, agencies must demonstrate rational nexus between evidence and restrictions; vague or precautionary closures often fail that standard.

In order to prevent implementation of arbitrary and capricious measures within the WJTCP, it is essential for CDFW to revise the WJTCP to remove or reduce the 186-ft and 5-mile buffers to scientifically documented, minimal root zones.

Generally, mitigation of impacts from recreational uses are missing from the WJTCP. The Plan cites a variety of justifications for reduction and closure of OHV access and general recreational uses of public



lands that host WJT habitat, while omitting proposed actions that would mitigate impacts while also advancing WJT conservation. As remedy, we assert the exigence that the CDFW must revise the draft plan by:

1. **Removing or reducing the 186-ft and 5-mile buffers to scientifically documented, minimal root zones.**
2. **Implementing fine-scale GIS mapping, protecting only documented key individuals rather than sweeping buffers.**
3. **Applying seasonal closures during seed-set or bloom periods rather than permanent spatial exclusion.**
4. **Retrofitting staging areas, developed and dispersed camp sites, designated routes and open riding areas with root-zone fencing and signage per ADA standards in order to preserve access while enforcing habitat protection.**
5. **Using adaptive monitoring tied to monitoring; open or close areas based on empirical data (tree health, soil compaction)**
6. **Explicitly defining damage thresholds to WJT root zones, maintain all routes and open riding areas as open when damage thresholds are not exceeded thereby tying conservation action to measurable ecological data.**
7. **Incorporating public monitoring results with pathways to re-open routes when no significant impact exists.**
8. **Utilizing education and signage to support public land stewardship, not blanket restrictions or closures to public access.**

These targeted strategies preserve multi-use recreation and public access to public lands without compromising WJT conservation. The WJTCP can still effectively protect WJTs if refined to reflect true conservation needs while honoring California's strong public access and recreation laws. We stand ready to assist with technical AMGIS routing or staging design to safeguard both desert ecology and open-country recreation.

OHV USE & OUTDOOR RECREATION ARE ALREADY COMPATIBLE WITH WJT CONSERVATION

There is a need to align the WJTCP with the best available scientific data as set forth in the 2022 Western Joshua Tree Status Review³ prepared by CDFW, particularly with respect to off-highway recreation, camping, and public land access. The Summary of Findings in the 2022 Status Review clearly demonstrated that there is no substantial threat to WJTs from managed recreation. The 2022 CDFW Status Review provides a comprehensive assessment of threats to the WJT. The Review identifies primary threats to the species as:

- Habitat loss from urban development,
- Altered fire regimes,
- Climate change impacts,
- Invasive species competition (notably *Bromus* spp.).

Crucially, managed OHV use, designated camping, and general public recreation are not identified as significant threats to the species' persistence. As cited on p. 77 of the Status Review:



“There is currently no evidence that recreational activities, including legal OHV use and camping on designated routes and within permitted areas, result in substantial population-level effects on Western Joshua Tree distribution, recruitment, or survivability.”

Furthermore, Appendix 1 of the WJTCP itself (Agency Comments Summary, p. 11) clarifies:

“OHV use is more impactful in open riding areas than on designated trails... the Plan should clarify that negative impacts from OHV use refer to unrestricted off-trail use.”

This reflects the consensus among land managers, including California State Parks and the BLM, that on-trail or designated area OHV use is compatible with WJT conservation goals, especially when paired with responsible management practices.

However, there are multiple areas of inconsistency between the WJTCP and the Status Review. Despite this data, the WJTCP proposes:

- A 56.7-meter (186-foot) avoidance buffer around all individual WJT specimens (Vol. I, p. 1-2; App. D-7),
- 5-mile “landscape-level” buffer zones in areas of tree concentration,
- Restrictions or closures of access routes, dispersed camping areas, and trailheads.

These expansive and inflexible buffers are not supported by empirical evidence in the Status Review or public agency field data. In fact, many of California’s most robust WJT populations thrive within existing OHV and multi-use recreation areas. The Status Review (p. 70) notes viable populations in:

- Onyx Ranch SVRA (Kern County)
- Hungry Valley SVRA (Los Angeles County)
- Johnson Valley OHV Area (BLM, San Bernardino County)

These areas contain active OHV and dispersed recreation activity, yet still support natural regeneration and stable populations of Western Joshua Trees.

As previously discussed in this comment letter, there is both a legal and policy requirement to base conservation measures on best available science. Under the California Endangered Species Act (CESA), public agencies must use “best available scientific and other information that is reasonably available at the time” to inform listing decisions and conservation actions (Fish & Game Code §2074.6, §2075.5). Imposing restrictions—such as blanket access closures or excessive buffer zones—that are not supported by evidence of threat may violate the law’s intent and open the state to legal challenges under:

- The California Administrative Procedure Act (arbitrary and capricious standard),
- The California Environmental Quality Act (CEQA), if impacts to public access and equity are not properly disclosed and mitigated.

It is critical for CDFW to implement revisions to the WJTCP in order to achieve alignment with both scientific evidence and policy. To harmonize the WJTCP with the Status Review and applicable law, we recommend the following:



1. **Reduce default buffer zones around individual trees from 186 feet to a science-based radius representing actual root and seed dispersal zones (generally < 30 feet for adult trees).**
2. **Eliminate 5-mile landscape buffers in favor of site-specific conservation assessments based on density, soil condition, and evidence of actual stressors.**
3. **Retain existing designated OHV routes and recreation areas, consistent with their continued use in habitat occupied by healthy and reproducing WJT populations.**
4. **Use adaptive management and monitoring to detect and mitigate specific problem areas rather than applying preemptive, broad-scale access restrictions.**
5. **Incorporate exceptions and access protections for individuals with disabilities, seniors, and underserved populations, in compliance with ADA Title II and California Government Code §11135.**

The WJTCP presents an important opportunity to protect a cherished native species. However, its current form diverges from the State's own scientific review and fails to distinguish between unregulated recreation and managed recreation, which has coexisted with healthy WJT populations for decades. Cal4Wheel urges the CDFW to revise the Plan to better reflect science-based conservation and inclusive, equitable access to public lands. We would be pleased to provide field-level data, route inventories, and collaboration on monitoring methods to support this alignment.

CASCADING AND COMPOUNDING NEGATIVE IMPACTS FROM RESTRICTIONS TO OHV ACCESS

The area of public lands contained within the boundaries of WJT habitat are popular areas for off-highway vehicle (OHV) use. Multiple communities that are economically dependent upon the health of public lands and public access to outdoor recreation lie inside or within close proximity to WJT habitat. The proposed WJTCP states that OHV recreation activities present a threat to the WJT, however, research demonstrates that there is insufficient data to back up the claim that managed OHV recreation, nor any other form of outdoor recreation, has born negative impact on the WJT whatsoever. We thus emphasize in this comment that the mere fact that recreation areas overlap with WJT habitat does not substantiate any claim that recreation activities are detrimental to the WJT.

It is important to note that a significant volume of OHV roads have been closed and decommissioned in California over the course of the last several decades. While these historical closures occurred for a variety of reasons, one major contributing factor for road closures has been for habitat protection of species that are listed under the ESA as threatened or endangered. With reference to one of the primary known threats currently facing the WJT – catastrophic wildfire – it is pertinent for CDFW to thoroughly evaluate the impact of those closures in relationship to the scale of destruction inflicted by catastrophic wildfire in WJT habitat. OHV roads do not only serve to provide humans with opportunities to access and enjoy outdoor recreation, they also function as vital infrastructure for prevention of catastrophic wildfire and support of wildfire fighting efforts. OHV roads form natural fuel breaks across the landscape. They also provide routes for firefighters to access wilderness terrain that is otherwise difficult, if not impossible, to address during a catastrophic wildfire event.



Before advancing the WJTCP towards approval and implementation, we assert the need for CDFW to create an itemized inventory of OHV routes that fall within WJT habitat, then conduct an analysis of each route to determine the actual correlation of threat from OHV use in WJT habitat versus the real and immediate benefit that OHV roads provide as fuel breaks and firefighter access in wildland areas.

To support efforts to develop a full inventory of OHV roads that fall within WJT habitat, Cal4Wheel offers volunteers through membership to survey and itemize the terrain across the designated habitat of this species. Additionally, to support habitat restoration and maintenance efforts for the WJT, Cal4Wheel offers support through membership volunteers. Cal4Wheel takes pride in a deep history of contribution to conservation and stewardship of public lands through club "adoption" for care of specific sites as long-term commitments. We ask CDFW to consider this tangible offer of support as part of the resources available to ensure the success and health of the WJT through active conservation. We believe that through active conservation, effective protections may be afforded to the WJT and other wildlife that serve to create balance between the welfare and interests of both wildlife and humans. We believe that this framework serves to fulfill the CDFW mission: *"To manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public."*

Finally, given the lack of data to demonstrate that OHV recreation bears any negative impact on the viability of the WJT as a species, and the quality and availability of WJT habitat, **we ask that CDFW state explicitly within the WJTCP a clause to specify that OHV recreation is a protected activity that will not be negatively impacted by designation.** Given the positive correlation between OHV recreation and maintenance of fuel breaks and access for firefighting efforts, **we urge CDFW to not only preserve, but also support the expansion of OHV recreational activity across our public lands in California as it is a highly effective means of preventing catastrophic wildfire, managing the landscape, and creating vital access for operations that maintain a healthy density of WJT individuals and forests, grasses, brush, and habitat diversity.**

SOCIAL AND ECONOMIC IMPACTS

The WJTCP is subject to requirements to analyze economic and social impacts under multiple California laws and regulatory frameworks. These requirements stem from the California Environmental Quality Act (CEQA), specific sections of the California Fish and Game Code, and Public Resources Code (PRC).

CEQA requires analysis of economic and social effects when they are related to physical environmental changes.

- PRC §21001(g) – Declares the intent of the state to:
"Require governmental agencies at all levels to consider environmental factors, including economic and social factors, associated with any proposed project."
- PRC §21002 and §21002.1(b) – State that a project with significant effects on the environment may not be approved unless alternatives or mitigation measures are adopted, and agencies must consider economic, legal, social, technological, and other benefits of a project.



- CEQA Guidelines §15131 – While economic and social effects are not treated as environmental impacts per se, CEQA requires that such effects be analyzed if they cause physical environmental impacts (e.g., recreation closures leading to displacement, increased use of sensitive areas, or economic harm to gateway communities).

If the WJTCP causes restrictions on recreation, camping, or OHV use, which in turn causes displacement or economic harm to surrounding communities, or increased use elsewhere leading to environmental degradation, these secondary effects must be evaluated under CEQA.

Additional requirements for analysis of social and economic impacts are present within CA Fish and Game Code. Conservation plans under the California Endangered Species Act (CESA) must be informed by best available scientific and commercial data, and are subject to public interest and feasibility considerations.

- Fish and Game Code §2075.5 – Requires that status reviews include a description of:
"Efforts to protect the species, including those of other state and federal agencies, and private individuals and organizations."
- Fish and Game Code §2074.6 – the Commission must consider "the degree and immediacy of the threat", and the extent of existing or alternative conservation efforts.

While this section does not explicitly mention economic analysis, it does imply a need to consider feasibility, alternatives, and balancing of uses, all of which have economic and social dimensions.

CA Public Resources Code and Recreational Access Mandates also support balanced land management and requires agencies to protect both environmental and recreational uses.

- PRC §5090.01 et seq. (OHMVR Act) – Establishes the State's policy to ensure environmentally sustainable OHV recreation and mandates consideration of recreational needs in conservation actions.
- PRC §5003.1 – Declares recreation a "beneficial use" of public land, and any restriction to that use must be subject to review and public process.
- PRC §21083.05 – Mandates that environmental justice, access equity, and disproportionate social burdens on communities be considered in environmental reviews, when applicable.

Finally, California Government Code §11135 ensures equity and access by prohibiting any program receiving state funds from discriminating or disproportionately burdening individuals based on disability, age, or income status. If WJTCP results in closures that reduce access for elderly, low-income, or disabled individuals, it could trigger legal or procedural review.

Existing laws, statutes, and PRC require that the WJTCP include comprehensive analysis of economic and social impacts, particularly when those impacts are tied to changes in land use, access, or recreation opportunity. If the WJTCP proceeds without a comprehensive CEQA review that includes socio-economic impacts of land closures or access restrictions, it would likely be vulnerable to litigation or administrative appeal under CEQA and related access laws.

The WJTCP proposed closures threaten:

- Local economies relying on OHV tourism - fuel, gear, lodging, and guiding services in desert gateway towns.



- Affordable access to nature for seniors, disabled individuals, and families - as dispersed camping and graded routes are removed without replacement.
- Overcrowding in unbuffered zones leading to environmental damage - eroding the very habitat the plan seeks to protect.

However, the WJTCP does not provide any analysis or discussion of possible economic impacts related to motorized recreation, or outdoor recreation generally. CDFW must revise the WJTCP to include a legally-compliant economic assessment for public comment.

The WJTCP acknowledges there is recreation within each of the WJT habitat units yet says nothing about the economic impacts resulting from possible loss of recreation. Since recreation currently and historically co-exists with WJTs across its full range of habitat, we urge CDFW to adjust the language of the WJTCP to state that all existing recreation will continue without restrictions.

Recreation, especially [recreation off of paved or gravel roads, is the leading cause of growth in visitors to public lands](#)¹⁰. This is a longstanding trend, and it is critical to note, California has led the nation as the state with the highest percent of population and number of participants in OHV recreation since 2008. The US OHV market is worth more than \$10 billion, and California represents over 10% of that market share. It is clear that public interest in OHV recreation is a dominant value and preferred mode of outdoor recreation for residents of California. The restrictions and closures to public access to OHV recreation that are contemplated in the WJTCP bear the potential to eliminate user access to vast areas of public land. Such restrictions or closures of access will detrimentally impact local economies that depend on outdoor recreation and recreation tourism, as well as the OHV industry broadly. The negative economic impact of the WJTCP will directly affect millions of Californians who reside in the areas within and surrounding WJT habitat. This is a vast region that would encompass over 9.3 million acres in Southeastern California, as well as all of the communities that host and surround that acreage.

There will clearly be massive economic impacts from implementation of the WJTCP as it is currently written in draft; impacts which CDFW has neglected to consider and analyze, including:

- Loss of recreation caused by WJT related restrictions, or lawsuits resulting in loss to the local economy as well as loss of access to public lands
- Reduction or elimination of active management to the detriment of landscape health and loss of jobs

We call on CDFW to do their due diligence and uphold their responsibilities as decision makers in this proposed WJTCP by conducting a comprehensive economic analysis that includes evaluation of impacts on OHV recreation specifically, outdoor recreation generally, tourism within local communities that rely on the recreation economy, and active management of the landscape across all impacted public lands. We assert the imperative that CDFW must refrain from issuing a final decision on whether or not to approve the proposed WJTCP until after a comprehensive economic analysis has been completed, and, the public has had an opportunity to review said analysis and submit comments on it.



IMPLICATIONS RESULTING FROM OVERTURN OF THE CHEVRON DOCTRINE

While the WJTCP is a state-level plan developed under California law (specifically CESA), the recent reversal of the Chevron doctrine by the U.S. Supreme Court in *Loper Bright Enterprises v. Raimondo* (2024) has important implications, especially in contexts where the plan overlaps with federal land, federal permits, or federally protected rights (such as NEPA/FLPMA compliance, ADA access, or public land coordination). Below is a breakdown of the legal relevance, implications, and specific authorities that tie the WJTCP to the Chevron reversal.

Under the Chevron doctrine (established in *Chevron U.S.A., Inc. v. NRDC*, 467 U.S. 837 (1984)), courts were required to defer to reasonable interpretations of ambiguous statutes by federal agencies. In *Loper Bright Enterprises v. Raimondo* (decided June 2024), the Supreme Court overturned this deference standard, ruling that:

Courts must exercise their independent judgment in interpreting statutes and may no longer defer automatically to federal agencies' interpretations of ambiguous laws.

Although WJTCP is a California Department of Fish and Wildlife (CDFW) action, the plan:

- Affects federal lands, including BLM- and Forest Service-managed OHV routes and campgrounds.
- Proposes management prescriptions in areas covered by federal land use plans like the Desert Renewable Energy Conservation Plan (DRECP).
- May trigger federal Endangered Species Act (ESA) coordination if the WJT becomes federally listed in the future.
- May indirectly affect NEPA and FLPMA-managed public lands, raising issues of coordination under FLPMA §202(c)(9).

With Chevron overturned, federal courts are no longer required to defer to the Bureau of Land Management (BLM), U.S. Fish and Wildlife Service (USFWS), or other federal agencies in disputes involving interpretations of federal statutes, thus opening the door to more legal scrutiny of state-federal coordination plans like the WJTCP.

There are multiple legal implications of Chevron Reversal on WJTCP including federal–state coordination and land use conflicts. Under FLPMA §202(c)(9), the BLM must coordinate with state and local governments, and consider state conservation plans, but is not bound by them. Post-*Chevron*, if a state plan like WJTCP creates conflicting prescriptions (e.g., buffer zones that effectively close BLM OHV routes), federal courts reviewing such conflict will no longer automatically defer to BLM's interpretation of its coordination duties. This gives affected land users or local governments stronger legal footing to argue that BLM must enforce its recreation commitments under DRECP or other planning documents, even if California demands more restrictive conservation measures.

This swings open wide the door of opportunity for increased legal challenges to interagency deference. Suppose the WJTCP is used as justification by BLM to close roads or limit access (e.g., under NEPA or FLPMA plan revisions). Post-*Chevron*, courts would evaluate statutory interpretations independently, not simply accept BLM's or CDFW's position. This could apply in legal challenges under:



- Federal Lands Recreation Enhancement Act (FLREA)
- National Environmental Policy Act (NEPA)
- Americans with Disabilities Act (ADA) Title II
- Rehabilitation Act §504

If the western Joshua tree becomes federally listed under the U.S. Endangered Species Act (ESA), any resulting federal critical habitat designations or Section 7 consultations must be evaluated without agency deference. Courts may now scrutinize whether such listings or habitat restrictions are scientifically and statutorily justified, creating risk for future listing decisions modeled on state plans like the WJTCP.

The reversal of the Chevron doctrine does not directly strike down the WJTCP, but it changes the legal environment in which the Plan could be challenged, implemented, or coordinated with federal agencies. The practical effects are such that:

- Federal courts are more likely to independently assess whether state-driven conservation restrictions on federal land are legally permissible.
- Affected user groups (e.g., OHV advocates, rural communities, disability access stakeholders) have a stronger legal foundation to challenge federal agency actions that adopt or enforce state plans like the WJTCP without clear statutory backing.
- Future ESA listings, NEPA decisions, or BLM travel management revisions informed by the WJTCP will face heightened judicial scrutiny.

Subsequently, we urge the CDFW to revise all components of the WJTCP that are inconsistent with existing Congressional directives, federal and state legal statutes, and public resource code. The need for consistency underscores our emphasis that all proposed actions in the WJTCP must be centered wholly in clear justification from current best available science, and in full alignment with the scope of current species status and conservation recommendations set forth in the 2022 CDFW WJT Status Review.



CLOSING

We appreciate the opportunity to comment on the proposed WJTCP. We would like to emphasize that the proposed Plan presents the CDFW with an important opportunity to positively impact not only the current and future health of WJTs, but also, the health of all wildlife that share habitat with the WJT, and the health and vitality of public lands to serve the benefit of the American people. We urge the CDFW to revise the WJTCP to ensure that accurate decisions are based on best available science, in alignment with necessary actions to prevent future catastrophic wildfire and increase the opportunity for all flora and fauna to thrive in a healthy ecosystem, and to provide vested stakeholders such as members of Cal4Wheel with an opportunity to actively contribute to the conservation and stewardship of the WJT and all wildlife that inhabit our treasured public lands.

In summary, we urge the CDFW to revise the WJTCP to include the following:

- Remove or reduce the 186-ft and 5-mile buffers to scientifically documented, minimal root zones.
- Implement fine-scale GIS mapping, protecting only documented key individuals rather than sweeping buffers.
- Apply seasonal closures during seed-set or bloom periods rather than permanent spatial exclusion.
- Retrofit staging areas, developed and dispersed camp sites, designated routes and open riding areas with root-zone fencing and signage per ADA standards in order to preserve access while enforcing habitat protection.
- Use adaptive monitoring tied to monitoring; open or close areas based on empirical data (tree health, soil compaction)
- Explicitly define damage thresholds to WJT root zones, maintain all routes and open riding areas as open when damage thresholds are not exceeded thereby tying conservation action to measurable ecological data.
- Incorporate public monitoring results with pathways to re-open routes when no significant impact exists.
- Utilize education and signage to support public land stewardship rather than blanket restrictions or closures to public access.
- Reduce default buffer zones around individual trees from 186 feet to a science-based radius representing actual root and seed dispersal zones (generally < 30 feet for adult trees).
- Eliminate 5-mile landscape buffers in favor of site-specific conservation assessments based on density, soil condition, and evidence of actual stressors.
- Retain existing designated OHV routes and recreation areas, consistent with their continued use in habitat occupied by healthy and reproducing WJT populations.
- Use adaptive management and monitoring to detect and mitigate specific problem areas rather than applying preemptive, broad-scale access restrictions.
- Incorporate exceptions and access protections for individuals with disabilities, seniors, and underserved populations, in compliance with ADA Title II and California Government Code §11135.
- Create an itemized inventory of OHV routes that fall within WJT habitat, then conduct an analysis of each route to determine the actual correlation of threat from OHV use in WJT habitat versus



the real and immediate benefit that OHV roads provide as fuel breaks and firefighter access in wildland areas.

- State explicitly within the WJTCP that OHV recreation is a protected activity that will not be negatively impacted by designation
- Conduct a comprehensive economic analysis that includes evaluation of impacts on OHV recreation specifically, outdoor recreation generally, tourism within local communities that rely on the recreation economy, and active management of the landscape across all impacted public lands, and refrain from issuing a final decision on whether or not to approve the proposed WJTCP until after a comprehensive economic analysis has been completed, and, the public has had an opportunity to review said analysis and submit comments on it.

California Four Wheel Drive Association would like to be considered an interested public for the WJTCP. Information can be sent to the following address and email address:

Rose Winn
California Four Wheel Drive Association
8120 36th Avenue
Sacramento, CA 95824
rwinn@cal4nrc.com

Sincerely,

Rose Winn
Natural Resource Consultant
California Four Wheel Drive Association

References

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July 11, 2025

President Zavaleta and Commissioners
California Fish and Game Commission
715 P Street
Sacramento, CA 95814

Director Charlton Bonham
California Department of Fish and Wildlife
715 P Street
Sacramento, CA 95814

Sent electronically to fgc@fgc.ca.gov

Sent electronically to Chuck.Bonham@wildlife.ca.gov

Dear Commissioners and Director Bonham:

Thank you for extending the time to provide comments on the final draft of the first Western Joshua Tree Conservation Plan ("Plan"). As you all know and some have expressed, the Plan in which you are engaged is experimental, untried, and in numerous respects very confusing. Judging from the remarks during consideration of this item on June 12, we do not expect that any changes will be made before approval of the Plan next month. However, we do appreciate the courtesy and respect you showed in continuing the matter to allow more time for the public to review the Plan and "digest" what it could mean for the people who live and work within the affected region, as well as the public agencies that must undertake needed projects in that area.

Comments on Context

As stated in prior letters, the people and organizations represented in this coalition letter have lived and worked among the Joshua trees as homeowners, farmers, builders and real estate brokers, water district employees, local government officials, environmental consultants, for decades. Our overarching position supports practical and effective conservation conducive to safe, affordable coexistence with the Joshua trees, without punitive or unreasonable regulations overly complicating the enjoyment of life and livelihoods in the area or resulting in increased compliance

costs that impact affordability of life's basic necessities, particularly in economically disadvantaged communities. Some of our members literally have a lifetime of experience and observations with the trees and have a great love for them. Our members also know the economic struggles that define the everyday experience of many residents in the high desert region, most of which are considered disadvantaged or severely disadvantaged communities. It is extremely important for the Plan to avoid putting such a burden on the residents that life and business become unaffordable.

The Commission and the Department (or CDFW) must continue working to reverse strong distrust created by the way the Western Joshua Tree Conservation Act ("Act") originated and what it contains. The Act and the Plan originate from the Commission's continued designation of the species as a candidate for listing as threatened under the Endangered Species Act, based solely on climate change projections. This candidate status remains in effect because the Commission has delayed its vote on the listing, which forces continued treatment of the species as potentially threatened—despite clear evidence that it does not meet the criteria for listing under the California Endangered Species Act. Then came Assembly Bill 1008, apparently drafted by the Department, carried by a legislator from the Bay Area, which had no idea or stake in the matter, that proceeded without local input through the regular legislative process. But midway through the legislative process, the bill was abandoned and its text suddenly put into a budget trailer bill – eliminating any real opportunity for input from regular people who will live with its consequences or additional meaningful comment and feedback. Since its enactment, it has become clear the Act has flaws that should be corrected, and some of our concerns with the Plan stem from defects in the Act.

In similar fashion, the experimental nature of this novel approach, with its case-by-case permitting, works against trusting that permitting decisions and fees will be fair and consistent. Commissioners express great confidence and trust in Director Bonham and Department staff, but until a track record of fair and reasonable Plan implementation is established, that same confidence will have to be earned at the ground level.

Given that we do not anticipate any substantive revisions to the Plan, we respectfully request that the Commission direct the California Department of Fish and Wildlife to amend its administrative procedures for implementing the Plan. Doing so would help reduce the disproportionate and harmful impacts on affected communities and public agencies during this experimental effort to conserve a species based solely on climate change projections.

What We Support

We gratefully acknowledge the work that regional CDFW employees are putting in to meet with project proponents and residents. We are thankful for sincere efforts to understand effects the Act and the Plan will have on people's lives and the necessary actions to provide infrastructure, housing, and a safe, enjoyable environment. We appreciate and support the proposed exclusion of single-family residential projects from any requirement to relocate Joshua trees. This is the kind of

practical approach we want to see. We also support the concept of the Department providing programmatic CEQA coverage for residential projects. These concepts should become adopted policy and extended to other public necessities to hold down negative impacts to the cost of living, such as for existing multi-family residential projects, or routine and emergency public utility work. We would like to collaborate with the Department on legislative improvements to ensure that these, and other specific fixes to the Act are made.

Concerns the Plan Does Not Address

We understand the Commission feels an urgency to approve the Plan due to the statutory deadline in the Act. Stakeholders within the region feel the same urgency, as they have their own plans on hold while the Plan is being finalized and permitting decisions are made. Thus, we anticipate the Commission will approve the Plan in August, and do not wish to delay that decision further. There are, however, outstanding issues of concern to members of our ad hoc coalition that need to be addressed in a future iteration of the Plan, and/or in legislation as appropriate.

1. Establish reduced or waived fees for key projects. Comments made by Director Bonham and Department staff indicate that permitting discussions for some public infrastructure projects are on track for a satisfactory outcome, and we hope to acknowledge that important outcome very soon. Similarly, we believe that other infrastructure and housing projects will also serve crucial community needs, yet we need better assurance that future projects will be afforded comparable accommodations. When permit requirements are determined case-by-case, that uncertainty leaves great room for concern, and general verbal assurances are unsatisfactory for project planning, for real estate disclosures, and so forth.
2. Prevent double charging. The Plan should explicitly bar multiple fees for “taking” the same trees. If a project strives to avoid or minimize harm to Joshua trees, only to be faced with additional fees later for the same trees, that does not lead the project proponent to care about the trees’ survival. The implementation plan should clarify that the term “take” would apply only to lethality but not “minimization of harm.” Application of the term “take” to both lethal and nonlethal effects is a fundamental problem in the Act, and if the Plan cannot address this issue, we would like to work with the Department on fixing the Act to more specifically address “take” as it applies to a tree species.
3. Minimize buffers. The maximum buffer for necessary public works, housing developments, and single-family residential projects should be no more than 5 feet. Relocation of trees using mechanical equipment such as a tree spade will cut roots at or less than 5 feet from the main trunk. Despite some skepticism about the success of relocation efforts, plenty of optimism was expressed in the June 12 Commission discussion. Therefore, if relocation with the complete disturbance of roots at a 5-foot length can be successful, the buffer zones in the revised Plan are excessive, especially for necessary projects to meet the needs of disadvantaged

communities. Further, buffers should not extend beyond the property line or the edge of the “project site,” another term which needs to be defined. That is, the Plan should not require a project to be responsible for Joshua trees within a buffer zone on neighboring private property (which raises a legal and liability issue related to the project proponent’s ability to enter onto another person’s property). It is easily conceivable that a public agency could be misusing public funds if required to perform care and maintenance of a Joshua tree on private property.

4. Provide exemptions and/or expedited permitting. Certain routine activities for public health and safety, such as water distribution system repairs and maintenance, wildfire mitigation and emergency response activities, need to be categorically excluded from permitting delays and fees.
5. Promote delegation of authority. We know that some local jurisdictions (cities and counties) will be reluctant to accept the added responsibility for project review and permitting. Even with the statutory ability to charge fees to cover the cost of service, the fees required to fully account for indirect costs such as record keeping, annual census, etc. would be too high and viewed very negatively by permit applicants. We suggest that the Plan would have to include significant incentives for many local jurisdictions to embrace this thankless administrative responsibility.
6. Timeline for improvement of scientific knowledge. The statement has often been repeated that the Western Joshua Tree Conservation Act and the accompanying Plan are “entrepreneurial” and even experimental. Publicly available, accepted scientific reports on matters like reproduction, relocation, and assisted migration – especially in the unknown context of future climate change – appear to be scant at best. This helps to explain the extensive list of fundamental questions in Section 5.2.4, Continue Research and Information Development. Experimentation on such a grand scale that places a considerable burden on local communities, should at least be sure to produce scientific advancements. We believe the Plan needs to include better (i.e., clear and scientifically based) milestones and deadlines for research results vital to successful conservation of the western Joshua tree. It would be tragic for this experiment in ecological engineering, with its significant financial and regulatory impacts on local communities, to reach the decision point in 2033 and still confront major knowledge gaps such as we have today.
7. Transparency of funds and analysis of economic costs. Potentially significant funds will be collected from fees and other sources under the Act. Pre- and post-implementation analysis of potential and actual costs, and associated social and economic impacts of the WJT Conservation Act must be conducted to demonstrate the proper use of those funds.
8. Caring for urban Joshua trees. Guidelines and financial incentives are needed for encouraging residents and businesses to take care of western Joshua trees in urban and residential areas

where the tree thrives today. Positive incentives have been recognized as a critical component for successful conservation of endangered species,¹ but the Plan is short on incentives to encourage support from private landowners for the western Joshua trees. Action E&A 1.8 is vague and amounts to a token gesture, and nothing in the effectiveness criteria refers to the non-tribal public who live and work in the western Joshua tree region. Unfortunately, this reinforces the sense that residents and businesses in the area are more of a hindrance than a help to conservation.

In closing, we want to again acknowledge efforts that have been made to meet with concerned residents, local governments, and businesses. We appreciate the modifications made to the original draft Plan that reduce economic impacts, although we strongly urge the Department and Commission to go farther to enhance the practical application of the Plan.

Respectfully,

Morongo Basin Residents for Reasonable
Joshua Tree Regulations

Adnan Anabtawi
Mojave Water Agency

Timothy Worley
Community Water Systems Alliance

Jody Rich-Ramirez
Joshua Tree Gateway Assn. of REALTORS

Sarah Johnson
Joshua Basin Water District

Marina West
Bighorn-Desert View Water Agency

Lance Eckhart
San Geronio Pass Water Agency

Richard Filgas
California Farm Bureau Federation

cc: Governor Gavin Newsom
Wade Crowfoot, Secretary for Natural Resources
State Senator Rosilicie Ochoa Bogh
State Senator Suzette Martinez Valladares
Assemblymember Juan Carrillo
Assemblymember Greg Wallis
Assemblymember Tom Lackey
Los Angeles County Supervisor Kathryn Barger
San Bernardino County Supervisor/Board Chair Dawn Rowe

¹ Camacho, A.E., Kelly, M.L., and Li, Y-W. "The Six Priority Recommendations for Improving Conservation under the Federal Endangered Species Act," [UCI Law](#), Center for Land, Environment and Natural Resources and Environmental Policy Innovation Center. September 2021. See especially pp. 22-25. Accessed 7/9/25.



VIA E-MAIL: fgc@fgc.ca.gov

July 21, 2025

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-209

Re: Large-scale Solar Association's Comments on August 13-14 Meeting Agenda – Western Joshua Tree Conservation Plan

Dear President, Vice President, and Members of the Commission:

The Large-scale Solar Association (LSA), the Solar Energy Industries Association (SEIA), and the American Clean Power Association (ACP) write to provide comments on the Western Joshua Tree Conservation Plan (Plan). As developers of utility-scale solar projects, our members are deeply committed to advancing California's clean energy goals while minimizing impacts to species and habitats, including the western Joshua tree. Collectively, we appreciate the substantial effort by the California Department of Fish and Wildlife (Department) and the California Fish and Game Commission (Commission) to develop the Plan.

This letter outlines the following comments regarding the final Western Joshua Tree Conservation Plan and its implementation:

- **Plan Positives:** We support Director Bonham's emphasis that this a non-regulatory effort that will follow a "get it right, not rushed"¹ approach, allowing for real-time learning as the program evolves and focused regulatory actions within permit-specific processes. Additionally, the innovative in-lieu fee structure, a pooled-funding model, coupled with the Department's authority to acquire and manage conservation lands, represents a more efficient and scalable conservation strategy than traditional parcel-based mitigation.
- **Need for Continued Engagement:** We request the Department continue to work on two aspects of the Plan involving its implementation of the Act: 1) eliminating "double mitigation," and 2) eliminating the serial census. Both are appearing as permit requirements and will burden the development of utility-scale clean energy and defeat the dual purposes of the Plan – to streamline permitting and conserve western Joshua trees. We've provided an appendix with specific text amendment proposals that address these two impediments.

¹ Director Bonham at the California Fish and Game Commission Meeting, June 12, 2025.

Plan Positives

“Get it right, not rushed” Approach

We support the comments made by Director Bonham during the June Commission meeting. His framing of this effort as one where the goal is to “get it right, not rushed” is precisely the right approach for a first-of-its-kind conservation effort. This is an unprecedented process that will benefit most from an iterative, field-based approach that evolves as we learn from on-the-ground experience while remaining mindful of balancing species conservation with California’s broader climate and energy goals. Implementing a novel and complex conservation strategy will benefit from a commitment to adaptive, real-time management as the program evolves.

The Plan is not a Regulatory Document

We particularly appreciate the Department’s ongoing and consistent acknowledgment that the Plan is not a regulatory document. This clarification helps maintain the necessary distinction between long-term planning guidance and project-level permitting requirements. That distinction matters, and it helps avoid confusion about how and where project-level decisions are made. Specifically, permitting decisions should continue to be made on a project-specific basis with appropriate flexibility and discretion. The Department’s efforts to emphasize the Plan’s non-regulatory nature and to focus regulatory actions within permit-specific processes are critical to maintaining a workable framework.

In-Lieu Fee Structure

The in-lieu fee option for mitigation is both innovative and essential, providing needed conservation funding without jeopardizing clean energy development. It provides a clear, lawful, and efficient pathway for applicants to comply with the Act while allowing the Department to strategically direct funds toward high-value conservation. For a species as widespread and abundant as the western Joshua tree, this pooled-funding model, coupled with the Department’s authority to acquire and manage conservation lands, represents a more efficient and scalable conservation strategy than traditional parcel-based mitigation. We support the Department’s implementation of this fee structure and urge its continued use and refinement as the Plan is implemented.

Need for Continued Engagement

Eliminate Double Mitigation

The Department continues to require “double mitigation,” which we believe is unlawful and should be changed. For example, the Department recently issued a western Joshua tree Incidental Take Permit (ITP) for a project by an LSA member company that requires the permittee to protect western Joshua tree relocation receiver sites in perpetuity. As LSA explained in its June 10 comment letter, both the Act and the Plan make clear that the Department cannot lawfully require permittees to acquire fee title to, and/or conservation easements over, receiver site lands in addition to paying the statutory in-lieu mitigation fees.

Fish and Game Code section 1927.3, subdivision (a)(3) provides that a permittee “may elect” to satisfy its mitigation obligation by paying fees “[i]n lieu of completing the mitigation obligation on its own[.]” The Legislature did not intend that a permittee pay mitigation fees *in addition to* satisfying its mitigation obligation. The Plan contemplates that permittees that elect to pay in-lieu fees will pay into the Conservation Fund and, in so doing, fund the *Department’s* efforts to protect western Joshua tree habitat in perpetuity (See WJTCP, updated June 2025, at 6-16.). In requiring mitigation twice over, the Department also violates the Legislature’s command that the measures required to meet a permittee’s mitigation obligation be “*roughly proportional in extent to the impact of the authorized taking of the species.*” (Fish & Game Code § 1927.3, subd. (a)(3).)

The Department’s insistence on such double mitigation threatens the viability of the Act as an alternative permitting pathway. With federal incentives for renewable energy development recently pared back, now is not the time for the Department to erect yet further obstacles to renewables development. The purpose of the Act was to streamline, not further burden, the development of utility-scale clean energy. Unlawfulness of the Department’s practice aside, it is simply not good policy.

We respectfully renew our request for the Commission to direct the Department to include clarifying language in the Western Joshua Tree Conservation Plan and the Relocation Guidelines and Protocols to make clear that the Act prohibits the Department from requiring double mitigation. See Appendix A for specific proposed language.

Eliminate the Serial Census

The Act does not authorize the Department to mandate recurring censuses pursuant to an ITP. The only provision of the Act that mentions censusing (Section 1927.3(a)(1)) provides that a permittee must submit “a census of all western Joshua trees on the project site” to receive an ITP in the first instance. The Act does not once mention additional censuses after an ITP is issued, yet the Department continues to require that permittees conduct recurring censuses (via permits requiring “Notification[s] of New Stem or Trunk” and “Recurring Assessment Report[s]”).

The gist of the Department’s position is that after a permittee conducts the mandatory initial census, receives its permit, pays the in-lieu mitigation fee, and moves forward with permitted activities, a permittee must submit more information about and pay mitigation fees to take any trees, their associated seeds, or their sprouts (whether germinated or clonal) for which mitigation fees were not initially paid. To secure such further take authorization in the short-term, the permittee must submit a “Notification of New Stem or Trunk” identifying the tree, its seeds, or its sprouts and pay mitigation fees. Over the medium- and long-term, the permittee must re-census the project area beginning six months from the completion of initial project construction, repeat each year for two consecutive years following the initial assessment year, and then repeat continuously every five years thereafter to determine “whether any new western Joshua tree individuals have emerged.” Those “new” trees must then be included in a “Recurring Assessment Report”

that identifies which will be taken, and the permittee must pay mitigation fees, as confirmed by the Department, before taking any of those trees. This interminably recurring process was not contemplated by the Act and it runs counter to its twin purposes – streamlining permitting and conserving western Joshua trees.

This census process stands in stark contrast to the Department’s practice of authorizing take of seeds in the area around a tree by providing take authorization for the tree itself (even if the tree itself will not be removed or encroached upon). This practice is consistent with the Act, which presumes that applicants would receive take authorization for take of trees (including their seeds) for which they paid the per tree mitigation fees. This underlying rationale for take authorization and mitigation for trees applies to their progeny: re-sprouts from roots of trees already removed, as well as new sprouts whether germinated or clonal. In other words, take of trees (including their seeds and progeny) on a project site is mitigated once and in full if the mitigation fee is paid for trees when the ITP is first issued to provide take authorization for those trees, their seeds, and their progeny.

The Department’s “serial census” requirements not only contravene the text, structure, and intent of the Act, they also disincentivize prospective permittees from making use of the Act in the first instance.² Additionally, they encourage developers to seek take authorization for and to remove as many trees as possible from the project site to avoid an endless roundelay of re-permitting.

To be consistent with the Act, the Department should cease requiring “Notification(s) of New Stem or Trunk” and “Recurring Assessment Report(s).” Instead, it should only require “New Take Assessment Reports” with the payment of mitigation fees limited to the take of trees, their seeds, or their progeny that existed at the time of the pre-permit census and for which the applicant did not pay in-lieu mitigation fees. This tailored requirement would apply where a permittee missed trees in its initial census and needed to subsequently “true up” by paying additional mitigation fees. It would also apply where the scope of a project changed such that a permittee that initially censused, but did not plan to take, trees could “true up” by paying mitigation fees for those new impacts.

See Appendix B for proposed language.

Conclusion

California is at a pivotal moment where climate leadership and conservation innovation must work hand-in-hand. The Western Joshua Tree Conservation Plan is an ambitious, necessary, and promising attempt to do just that.

² These “serial census” mandates contrast unfavorably with what the Department has traditionally required under the California Endangered Species Act. It has long been the Department’s practice under Section 2081 to provide prospective incidental take coverage for a geographic area, and not to require additional censuses and new mitigation after a permit is issued absent substantial changes to the project design or boundary resulting in take not previously anticipated.

While challenges remain, we are encouraged by the Commission's role in overseeing the Plan's development and the Department's commitment to refining guidance over time. As implementation proceeds, we respectfully urge the Commission to continue closely monitoring how mitigation and census provisions function in real-world settings, ensuring that updates to guidance are transparent and well-grounded. We also encourage the Commission to reinforce the importance of maintaining a public, transparent process as implementation evolves. This process matters, and with continued collaboration and responsiveness, we believe this Plan can succeed in protecting the western Joshua tree while advancing California's urgent climate and clean energy goals.

We appreciate the opportunity to submit these comments and look forward to continuing working with the Department, the Commission, and other stakeholders to make the Plan a success for both the western Joshua tree and California's clean energy future. Thank you for your continued leadership.

Sincerely,



Shannon Eddy
Executive Director
Large-scale Solar Association



Stephanie Doyle
Director, State Affairs, California
Solar Energy Industries Association



Quintana Hayden
Senior Director, Wildlife & Federal Lands
American Clean Power Association

Appendix A: Amendments Regarding Double Mitigation

We propose the following text amendments to both the Conservation Plan and the Relocation Guidelines and Protocols, with new text marked in **bold**:

Section 6.6.2 “In-Lieu Fees” (See Conservation Plan, updated June 2025, at 6-17.)

“Under WJTCA, a permittee may pay a fee to take each individual tree based on the size of tree in lieu of completing mitigation obligations on its own. As a result, the total fees assessed for a project increase with the number and size of trees taken. WJTCA also established a two-tier fee structure, where per-tree in-lieu fees are nominally larger within a specified geographic area. **Because the in-lieu fee satisfies a permittee’s mitigation obligation under WJTCA (Fish & G. Code, § 1927.3, subd. (a)(3)), a permittee that elects to pay in-lieu fees will not also be required to provide for the protection in perpetuity, by fee title acquisition, conservation easement, or other means, of receiver lands for relocated WJT.**”

Appendix E, Relocation Guidelines and Protocols, updated June 2025, at 1–2.

“The relocation measures shall include but are not limited to the following conditions:

1. Salvage trees are placed in locations and with proper orientation to improve their chances of survival.
2. Salvage trees are relocated at a time that maximizes their chances of survival, when feasible.
3. A desert native plant specialist be onsite to oversee relocation.

In addition, section 1927.3, subdivision (a)(4)(B) states that CDFW may limit relocation requirements to certain classes of trees. **However, pursuant to section 1927.3, subdivision (a)(3), CDFW may not require, as a relocation measure, that a permittee provide for the protection in perpetuity, by fee title acquisition, conservation easement, or other means, of receiver lands for relocated WJT if the permittee has elected to pay in-lieu fees.**”

Appendix B: Amendments Regarding the Western Joshua Tree Census

We propose the following corrective amendments to the Conservation Plan, with new text marked in **bold**:

Section 6.5.1 “WJTCA Permitting” (See Conservation Plan, updated June 2025, at 6-11 – 6-12)

“Take of western Joshua tree may be authorized pursuant to WJTCA (Fish & G. Code, § 1927.3, subd. (a)). A WJTCA incidental take permit (ITP) may be issued when an applicant wishes to remove, trim, relocate, or work within the applicable avoidance buffer of one or more western Joshua trees for the purpose of completing a project. **However, a WJTCA ITP is not required if the applicant wishes to remove, trim, relocate, or otherwise take one or more western Joshua trees, sprouts from trees, or sprouts germinated from seeds of trees, for which it has paid in-lieu mitigation fees.**”

...

“Project-specific permit conditions are included in a WJTCA ITP and could include avoidance and minimization measures, such as relocation of western Joshua tree, avoidance buffers, seed collection, limits on pesticide use, and use of desert native plant specialists, as defined in Section 5.2.1, “Impact Avoidance and Minimization,” as well as monitoring and reporting. **Permit conditions may require a permittee to submit a “Notification of New Stem or Trunk” to identify and pay in-lieu mitigation fees for take of individual western Joshua trees that existed at the time of the census but for which the permittee did not pay in-lieu mitigation fees, as well as their sprouts and sprouts germinated from their seeds. However, permit conditions may not require a permittee to identify, or pay in-lieu mitigation fees for take of trees, sprouts from trees, or sprouts germinated from seeds of trees, for which in-lieu mitigation fees were paid.**”



County Administrative Office
Governmental & Legislative Affairs

Leia Fletes
Director

July 31, 2025

Erika Zavaleta, President
California Fish and Game Commission
715 P Street, 16th Floor
Sacramento, CA 95814

Re: Draft Western Joshua Tree Conservation Plan – Public Comments

Dear President Zavaleta and Members of the Commission,

On behalf of San Bernardino County, I would like to thank the California Fish and Game Commission (Commission) and the staff of the California Department of Fish and Wildlife (CDFW) for your continued engagement and responsiveness throughout the development of the Western Joshua Tree Conservation Plan (Plan). Your efforts to consider public input and work collaboratively with stakeholders, including our County, are appreciated.

We are encouraged by the progress made to date, particularly the consideration of our recommendations to revise buffer zone guidance and support defensible space measures that align with wildfire safety standards. These developments reflect a meaningful step toward a more practical and balanced implementation framework.

As the Commission approaches adoption of the current Plan, we look forward to continued collaboration on incorporating pragmatic solutions in future iterations that support both the protection of the Western Joshua Tree and the ongoing operational needs of our desert communities. As part of that ongoing effort, we urge a clear exemption for urgent and emergency infrastructure repairs, an essential step to ensure local agencies can respond swiftly to public safety threats, particularly in areas at risk of flooding or wildfire. We are committed to working together in the months ahead, including through potential legislative solutions, to ensure these priorities are meaningfully addressed.

Thank you again for your partnership. We value the opportunity to work with the Commission and CDFW as implementation of the Plan continues and stand ready to support ongoing efforts to ensure it reflects both ecological and community resilience. If you have any questions or require additional information, please contact Leia Fletes, Director of Government Relations, at (909) 387-4280 or Leia.Fletes@cao.sbcounty.gov.

Sincerely,

A handwritten signature in blue ink that reads "Dawn Rowe".

Dawn Rowe
Third District Supervisor
Chair, San Bernardino County Board of Supervisors

CC: Inland Empire Legislative Delegation

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Luther Snoke
Chief Executive Officer

From: LISA LACLAIR <[REDACTED]>
Sent: Monday, July 7, 2025 07:25 PM
To: FGC <FGC@fgc.ca.gov>
Subject: western joshua tree conservation plan

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Western Joshua Tree (WJT) Conservation Plan

This plan should not be approved as written in the current draft.

There are many items that the CDFW identifies that “will be defined, that may be done, that may include, that should be done”; for example, the CDFW will define criteria for lands. Until these items are clearly defined, this plan is incomplete and should not be adopted.

No studies have been conducted on the success rate of moving WJTs and there is no requirement that the relocated WJTs receive continued care after relocation to ensure their survival, their survival being the primary objective of the plan. There is no land management plan in place. There is no plan for tracking the progress of protecting priority lands.

No studies on the cost of relocation lands have been provided. The plan states that the Conservation Fund will pay for these lands, but no exact or even ballpark cost estimate has been provided. No studies have been completed on how much land will be needed, nor has a timeline for acquiring these lands been identified.

What is the availability of Desert Native Plant Specialist required to be used to assess the offset distance? This requirement is burdensome. Reasonable standards need to be set that will both protect the WJT and avoid unduly burdening property owners. Despite recent home appreciation, Yucca Valley remains a relatively low-income community with a large community of retirees and many younger Families of Color. The 50 foot radius outlined in the plan is excessive; the previous distance was 5 feet. The practice of tree spade location supports the 5 foot radius because a WJT that is up to 14 feet high only requires a 90 inch tree spade. Shorter trees require even smaller tree spades. It should be noted that Yucca Valley homeowners who connected to the sewer system several years ago state that WJTs only a few feet from the sewer trench were unharmed and are thriving.

There need to be exemptions incorporated into the plan for disturbance fees associated with State of California-mandated actions. Homeowners should be exempted from disturbance fees incurred due to their compliance with State-ordered actions; specifically, the requirement to connect to the sewer system. Since the state mandates sewer connections, the disturbance/take fee should be waived or funded by the state.

Additionally, the sewer system for Yucca Valley, CA was supposed to be completed by 2016. Nearly a decade later the installation is not complete. Homeowners who through no fault of their own cannot yet connect to the sewer system should be grandfathered in

accordance with the WJT protections in effect at the time the sewer plan was adopted. Homeowners cannot fairly be penalized because the project is behind schedule.

Ironically, the very homeowners who have taken steps to preserve and nurture the WJTs on their property will be the ones penalized under this plan. Builders and homeowners who clear cut the WJTs on their properties will bear none of this burden. WJTs are enjoyed by everyone in the state and nationwide. Any relocation/take fees should be funded by the state and not by individual homeowners who happen to have WJTs on their property

From: Candace Moulton <[REDACTED]>

Sent: Wednesday, July 9, 2025 9:46:34 PM

To: FGC <FGC@fgc.ca.gov>

Subject: Urgent Western JT questions Conservation act

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1. When will the Department issue guidance to allow fire hardening of homes and communities?
2. Why are there inconsistencies between the Act, the Plan, and the Department's actions?
3. Why are incidental take permitting fees so arbitrary?
4. Why were residents left out of developing permitting rules and the Conservation Plan?
5. When and how were Western Joshua Tree (WJT) incidental take permitting rules developed?

Why wasn't it a public process, and when will those rules be posted?

6. Why didn't the Department collaborate with local water agencies and public works departments?

When developing the ITP permitting rules and the Conservation Plan

7. Why has the Department not included planning for low and fixed income Morongo Basin residents?

As part of the Conservation Plan, or when developing permitting rules.

.

8. Can our local arborists and biologists be authorized to develop Joshua Tree protection zones?

They've been developing them for years and can help property owners minimize impact, reduce take, protect the trees, and avoid take fees.

9. The rules are impacting property values and limiting development options on buildable urban lots.

What guidance can the Department provide so that real estate professionals can accurately disclose Western Joshua Tree-related permitting costs to prospective buyers?

10. Who was involved in writing the Western Joshua Tree Conservation Act?

The Western Joshua Tree is under severe threat, and we can all work together to protect them

Wildfires, green energy development, large scale housing development, and bigger swings from wet to dry weather conditions are all endangering Joshua trees. We believe people are

well positioned to take care of the trees on their private property with the right education, incentives, and rules.

We Love Our Local Joshua Trees

Candace Moulton

[REDACTED]

[REDACTED]

[REDACTED]

[Yahoo Mail: Search, Organize, Conquer](#)

From: Lisa Edwards <[REDACTED]>
Sent: Thursday, July 10, 2025 4:06:53 PM
To: Bonham, Chuck@Wildlife <[REDACTED]>; FGC <FGC@fgc.ca.gov>
Subject: The Western Joshua Tree Conservation Act-My questions and comments

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WARNING: This message is from an external source. Verify the sender and exercise caution when clicking links or opening attachments.

Hi,

Note: I have attached a more formal letter to this email:

I am a local that has lived in the Yucca Valley area since 1968. My father was a builder here for 50+ years and built 600+ homes plus some commercial projects. We did a lot of construction 10' from Western Joshua Trees, and they are still thriving today as I drive around town and look at some of his projects. I feel that there needs to be a reduction of the buffer zones.

At the last public meeting online, some mention was made of reducing it to 10' along with single family residents being exempt from some of the regulations. **Please clarify and explain how you are going to make the implementation make sense to the average homeowner. The rules and regulations of what is involved with overseeing any work to be done, is ridiculous. Some of the arborists are charging exorbitant prices to do a census etc. Single Family Homes should be exempt and allowed to do improvements as long as there is a 10' buffer. The proposed 50' radius including trees on a neighbor's property is extreme and doesn't make any sense whatsoever. Relocation hasn't proven to be that successful either.**

My personal property has over 30 WJTs if you count all the sprouts...probably more since they grow in clumps. I'm afraid to even add up the costs for doing ANYTHING on my own property.

Exactly HOW do you expect the average person to pay for the insane take permit and "take" fees??? Sell their house because they can't afford to hook up to the sewer or can't afford to repair a water line, or do an emergency septic tank replacement?

At the last online meeting you "somewhat" acknowledged the public comments by emails etc, but we do not feel you are really listening to our concerns. I am in numerous online forums and groups in the area and there is confusion, stress, fear, and concern. For every person that actually takes the time to email or comment, there are probably 100+ that have the same concerns. Corporations say one email represents at least 1000 people—because most just don't actually contact them.

Any "dirt disturbance" seems extreme and costly. It is taking away homeowner rights and ability to improve or enjoy their own property. Big commercial projects make more sense of falling under these regulations and have the funds to absorb the costs. How are solar projects getting around this?? There have been acres of WJTs hacked down for these projects. We are a low income/retirement community with struggling families due to the lack of work in the area. Those that are fortunate to own homes are still struggling---especially if you add in the crazy increase of fire insurance in California, property taxes, mandated sewer hookups, food prices and gasoline skyrocketing, cost of living in general etc...etc...

The Center of Biological Diversity is a team of attorneys and scientists that are doing this same thing to communities all over the country and creating out of control restrictions and regulations that are having negative impacts on communities everywhere. I love nature and want to respect it, but some of this goes too far. We need better protections for the average citizens.

Here are some of the local questions and concerns;

1. When will the Department issue guidance to allow fire hardening of homes and communities?
2. Why are there inconsistencies between the Act, the Plan, and the Department's actions?
3. Why are incidental take permitting fees so arbitrary?
4. Why were residents left out of developing permitting rules and the Conservation Plan?
There hasn't been enough done on a local level where you actually plan WITH the people and communities that will be severely impacted.
5. When and how were Western Joshua Tree (WJT) incidental take permitting rules developed?
Why wasn't it a public process, and when will those rules be posted? **2-3 minutes commenting at meetings isn't enough.**
6. Why didn't the Department collaborate with local water agencies and public works departments?
When developing the ITP permitting rules and the Conservation Plan? **We are mandated by the State to connect to the sewer system. You are making it near impossible for people to pay for this if Joshua Trees are involved. And why in the heck would there need to be take permits for installing sewer lines in the middle of existing streets?**

7. Why has the Department not included planning for low- and fixed-income Morongo Basin residents as part of the Conservation Plan, or when developing permitting rules? Besides that, the average middle class couldn't even afford estimates of \$20-40,000 for permits if they had a higher number of WJTs on their property.

8. Can our local arborists and biologists be authorized to develop Joshua Tree protection zones?

They've been developing them for years and can help property owners minimize impact, reduce take, protect the trees, and avoid take fees.

9. The rules are impacting property values and limiting development options on buildable urban lots.

What guidance can the Department provide so that real estate professionals can accurately disclose Western Joshua Tree-related permitting costs to prospective buyers?

There has to be a better compromise so we can all work together to protect them. Locals love the Joshua Trees, but now are beginning to wish they had ZERO on their own property because the costs are prohibitive.

Thank you for reading and listening. We appreciate all your hours and efforts to remedy a challenging situation.

**Sincerely,
Lisa Edwards**

[REDACTED]

July 9, 2025
Lisa Edwards
Morongo Basin Resident since 1968
Yucca Valley
[REDACTED]

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

Email: fgc@fgc.ca.gov

Subject: Urgent Need for Transparency, Fair Implementation, and Community Protection Under the Western Joshua Tree Conservation Act and Draft Plan

Dear Commissioners,

As a resident of the Morongo Basin—where the Western Joshua tree is both a defining feature of our landscape and part of our everyday environment—I'm writing to express urgent concerns about how the Western Joshua Tree Conservation Act (WJTCA) and the Draft Conservation Plan are being implemented.

A Historic Step Undermined by a Problematic Rollout

The WJTCA is a landmark policy in California's approach to plant conservation, marking the first time a native plant species has triggered such extensive permitting processes, mitigation costs, and land-use restrictions. This has major implications for private property rights, community development, and infrastructure planning across our region.

Unfortunately, the path to adopting the Act was anything but inclusive:

- It was passed as part of the state budget, without open debate, without meaningful opportunity for public comment, and without engagement with local governments or the communities most directly impacted.
- The resulting policies are inconsistent, difficult to understand, and burdensome—not only for individual residents, but also for local agencies tasked with enforcement.
- The Department now expects local jurisdictions to issue permits under this complex new system—despite those jurisdictions having been left out of the development process and, in many cases, lacking the resources or desire to manage these requirements.

Damaging Effects on Housing, Infrastructure, and Public Safety

The Act and its Draft Plan are already producing widespread negative effects:

- Homeowners and housing developers are facing costly delays or denials of permits in areas long identified for future growth to meet California's housing needs.
- Infill development, which should be encouraged in already urbanized areas, is being stalled by unclear or excessive restrictions.
- Critical infrastructure projects—for water delivery, energy, and public safety—are being delayed and made significantly more expensive due to high mitigation fees.
- Wildfire prevention and safety efforts are also being impeded. Vital vegetation management and fire-hardening work is slowed by complex and unclear permitting rules.

Additionally, the Plan places an excessive burden on projects by requiring both:

1. Implementation of on-site minimization or mitigation efforts, and
2. Payment of in-lieu fees under the Act.

This “double penalty” is unreasonable. The Act permits the use of in-lieu fees as an alternative—not an add-on—and projects that meaningfully minimize harm should not face additional financial penalties. It must be one or the other.

Definition of “Take” Must Be Plant-Appropriate

The application of the term “take” is also deeply problematic. California law defines “take” in relation to wildlife—species that move and can be captured or hunted. The original Fish and Game Code Section 86 describes “take” as “hunt, pursue, catch, capture, or kill.”

Applying that same definition to a plant like the Western Joshua tree—stationary and often unaffected by small-scale disturbances—makes little ecological or legal sense. The Act itself recognizes that certain impacts are permissible and not all projects require a fee, indicating that a zero-impact standard was never the intention.

The Plan should:

- Provide a scientifically sound definition of “take” that reflects the biological nature of a plant species.
- Spell out clearly what actions do and do not constitute “take.”
- Acknowledge that many projects reduce harm through design and location, and that such efforts should result in reduced permitting burdens and lower or no fees.

Don’t List the Western Joshua Tree—Fix the Act Instead

In light of how the Act and Plan were developed—without transparency or adequate input from those most affected—I strongly urge the Commission to:

- Reject any proposal to list the Western Joshua tree as threatened or endangered under the California Endangered Species Act at this time.
- Instead, work to reform and improve the Act through a more inclusive, public process that balances ecological protection with real-world community needs for housing, infrastructure, fire safety, and sustainable growth.

This is about more than one species—it sets the tone for how California balances environmental protection with human needs. The current Plan risks doing more harm than good, and the communities that have lived with and valued the Western Joshua tree for generations were largely left out of its creation.

A Call for Inclusive, Transparent Policy

I respectfully request that the Commission and the Department reopen this process to the

public, involve local stakeholders meaningfully, and create solutions that are practical, fair, and ecologically sound.

Thank you for considering these concerns.

Sincerely,
Lisa Edwards
Morongo Basin Resident

From: pamela@pamelagarcia.realtor <pamela@pamelagarcia.realtor>

Sent: Thursday, July 10, 2025 09:26 AM

To: Bonham, Chuck@Wildlife [REDACTED]

Cc: FGC <FGC@fgc.ca.gov>

Subject: Urgent Recommendations Regarding the Western Joshua Tree and the Current Regulatory Landscape

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Date: July 10, 2025

To:

California Fish and Game Commission

P.O. Box 944209

Sacramento, CA 94244-2090

Dear Members of the California Fish and Game Commission,

I am writing to you as a resident of the Morongo Basin, a licensed real estate professional, and someone deeply invested in the preservation and prosperity of our desert communities. I urge you to carefully reconsider the current course of action regarding the Western Joshua Tree (*Yucca brevifolia*) and its placement under the California Endangered Species Act (CESA).

The Current Regulatory Environment – A Well-Intentioned Mess

Since the emergency listing of the Western Joshua Tree as a candidate species in 2020 and its formal designation as threatened in 2023, the regulatory framework has created confusion, delays, and economic hardship for landowners, developers, small businesses, and even public agencies. The permitting process through the California Department of Fish and Wildlife (CDFW) has been inconsistent and overwhelmed. The distinction between “legacy trees” and “nursery trees,” vague thresholds for mitigation, and a lack of

clarity on habitat management guidelines have made it nearly impossible for local stakeholders to plan, invest, or build confidently.

While the intent to preserve this iconic species is universally respected, the tools currently being used are blunt, bureaucratic, and, in many cases, counterproductive.

How We Got Here

The push for emergency protection of the Western Joshua Tree came in response to valid concerns about climate change, habitat fragmentation, and rapid development in parts of the Mojave. However, the blanket application of CESA regulations—without sufficient scientific consensus on species viability, without stakeholder engagement at the community level, and without a pragmatic implementation framework—has resulted in a broken system.

Ironically, some of the most effective conservation efforts have been led by the very communities being hurt the most—those who live and work in the desert.

Examples of Successful Compromise

There have been small but powerful victories demonstrating that conservation and development can coexist:

- Local conservation easements and open space dedications tied to housing developments have resulted in contiguous habitat preservation while still allowing housing growth.
- Landowners have voluntarily relocated or replanted Joshua Trees in collaboration with local biologists, showing a willingness to adapt without rigid enforcement.
- Partnerships between cities and tribal governments have led to more culturally and environmentally sensitive land use plans.

These examples prove that when local voices are included, and flexibility is granted, solutions can emerge that protect both the land and the people.

Urgent Recommendations

I respectfully submit the following recommendations:

1. **Reform the Permit Process Immediately**
Simplify and standardize the Western Joshua Tree permitting process. A clearly defined, tiered system based on project scale and tree impact would reduce confusion and restore confidence.

2. **Recognize Local Control and Planning**
Empower counties and municipalities to create their own Joshua Tree Conservation Plans, with oversight and approval by the state. These plans should allow for planned growth while ensuring habitat corridors and protected zones.
3. **Support Incentives, Not Just Penalties**
Shift the focus from punitive regulation to positive reinforcement. Provide financial and technical support for landowners who choose to preserve Joshua Trees, relocate them appropriately, or set aside habitat.
4. **Re-evaluate the Threatened Status Every 3 Years Based on Updated Science**
Require the Commission to reassess the species' status regularly using peer-reviewed climate and population data. Decisions must reflect real-world ecological changes—not outdated models or political pressure.
5. **Invest in Education and Stewardship**
Fund education campaigns in desert communities to promote appreciation, protection, and stewardship of the Joshua Tree—especially among youth and new residents. Long-term survival depends on culture as much as law.

Closing Thoughts

The Western Joshua Tree is a symbol of the California desert. But it is also a symbol of resilience—something our communities know intimately. Please help us restore balance by fixing what is broken. Let's protect the tree without strangling the communities that have always been its most faithful stewards.

Thank you for your service and urgent attention to this matter. I am available to speak further or provide insight from our region at any time.

With sincerity and respect,

Pamela Garcia

Realtor | Desert Community Advocate

Coldwell Banker Roadrunner Realty

Yucca Valley, California

From: Russell Gibbs <glenrealty@aol.com>

Sent: Thursday, July 10, 2025 4:35:29 PM

To: FGC <FGC@fgc.ca.gov>

Cc: Bonham, Chuck@Wildlife <Chuck.Bonham@wildlife.ca.gov>

Subject: Western Joshua tree

You don't often get email from glenrealty@aol.com. [Learn why this is important](#)

WARNING: This message is from an external source. Verify the sender and exercise caution when clicking links or opening attachments.

Dear Commissioners and Director Bonham,

Thank you for extending the comment period on the Western Joshua Tree Conservation Plan.

We've lived and worked around Joshua trees for decades. Nearly every home in the area was built next to them without harm — just drive through and see. Local residents have always respected and coexisted with these trees.

The current plan feels overly complicated and unfair, especially for disadvantaged communities. It was pushed through with no local input and now places unnecessary burdens on homeowners and small projects.

We support conservation that makes sense — like the exemption for single-family homes. That approach should be expanded to include essential services and small multifamily projects.

We urge the Commission to support changes to the Act or reconsider the species' listing, so the plan can be implemented in a way that's workable for the people who live here.

Thanks,

Russell

Russell Gibbs
The Glen Realty
760-668-6913 Cell
760-365-8341 Fax
License #01127608

Email: fgc@fgc.ca.gov

July 10, 2025

Jerome Manne

[REDACTED]

Morongo Basin Resident

California Fish and Game Commission
P.O. Box 944209
Sacramento, CA 94244-2090

Subject: Urgent Need for Reform, Transparency, and Community Protections when implementing the Western Joshua Conservation Act and Plan

Dear Commissioners,

As a resident of the Morongo Basin and part of a community that lives alongside the Western Joshua tree every day, I am compelled to submit this letter to raise urgent concerns regarding the Western Joshua Tree Conservation Act and the Draft Conservation Plan.

Groundbreaking Precedent But a Flawed Process with Harmful Impacts

The Western Joshua Tree Conservation Act represents a **groundbreaking precedent in California**: It is the first time a plant species has been subject to such complex and restrictive land use permitting processes, coupled with high fees and mitigation costs. The Act is setting the stage for unprecedented regulation of private property, community growth, and infrastructure development.

However, this precedent has been created through a **deeply flawed process**:

- The Act was passed as part of the state budget, **behind closed doors**, without meaningful public review, input from local governments, or the communities most affected.
- The resulting regulations are **confusing, inconsistent, and burdensome** for residents and agencies.
- The Department is attempting to **delegate permit authority** to local governments—yet these agencies were not consulted in developing the Act or the permitting rules and many have **no interest in administering complex, unworkable rules**.

Harming Housing, Infrastructure, and Public Needs

The Act and Plan are already creating significant harm to:

- **Homeowners and housing developers**, by halting or delaying home construction in an area that has long been expected to grow to meet California's housing needs.
- **Infill housing projects**, where existing urban and suburban areas are being blocked from reasonable development.
- **Critical infrastructure projects** for water, energy, and public safety—many of which now face **extremely high mitigation fees** and delays.
- **Wildfire safety projects**, where necessary fire hardening and vegetation management efforts are mired in permitting confusion.

The Plan also creates a **double penalty** for projects by requiring both:

- Costly **on-site mitigation or minimization measures**, and
- Payment of an **in-lieu fee** under the Act.
- It must be **one or the other**, not both. The Act itself allows for in-lieu fees as an alternative, and projects that effectively minimize impacts should not also be subjected to additional fees.

Definition of “Take” Must Reflect Plant Status — Not Animal Standards

The term "take" has always been defined in California law based on animals - wildlife species that **move**. The original **California Fish and Game Code Section 86** defines “take” as “hunt, pursue, catch, capture, or kill, or attempt to do so.”

Applying this same framework to a **stationary plant species** like the Western Joshua tree makes no sense, particularly when its physical relocation or minor impacts do not threaten its viability.

The Act itself acknowledges that **impacts are allowed** and that not every project must pay a fee—demonstrating that a rigid, zero-impact approach was never the legislative intent.

The Plan must:

- Provide a **reasonable definition of “take”** that accounts for the ecological realities of Joshua trees.
- Clearly define what activities constitute a "take."
- Respect the fact that **minimization and detrimental impacts are allowed** under the Act, and projects that minimize impacts should be supported with reduced permitting burdens and fees.

Commission Should NOT List the Species — Focus on Reforming the Act Instead

Given the **chaotic and opaque process** that produced the current Act and Plan, the Commission must:

- **Decline to list the Western Joshua tree as a threatened or endangered species** under the California Endangered Species Act.
- Instead, focus on advancing **meaningful, publicly vetted legislation** that protects the species while ensuring housing, infrastructure, and community needs are met.

The Commission must recognize that this is not simply about protecting a species—it is about setting a precedent for how California will balance **conservation, housing, infrastructure, wildfire safety, and community needs** in the future.

The current plan creates more harm than good. It threatens the very communities that live alongside the Western Joshua tree, and it was developed in a way that **excluded** those most affected.

I urge the Commission and the Department to engage in an open, transparent public process to develop workable solutions.

Thank you for your consideration of these serious concerns.

Sincerely,

Jerome Manne
Morongo Basin Resident

July 8, 2025

To: California Fish and Game Commission

From: James R. Foote
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Re: Comments on the June 2025 Draft of the Western Joshua Tree Conservation Plan

Thank you for this opportunity to comment on the June 2025 draft of the Western Joshua Tree Conservation Plan (WJTCP) prepared pursuant to Section 1927.6 of the Western Joshua Tree Conservation Act (WJTCA). My comments are organized into five sections: (1) lack of clarity regarding mitigation obligations; (2) unsupportable avoidance buffer determinations; (3) ten-tree limit upon delegation of take authorization to cities and counties; (4) incorrect assertion that adoption of the WJTCP is voluntary; and (5) lack of clarity how the WJTCP applies during the candidacy period for the western Joshua tree. Suggested remedies following each section are provided for consideration.

Comment No. 1: Lack of Clarity Regarding Mitigation Obligations

It is clear based on the Agency and Public Input Summary Memo, Appendix B of the WJTCP, that one of the primary concerns of the public when undertaking a project, particularly when located on single-family residential properties, pertains to the payment of mitigation fees as described in Sections 1927.3(d) and 1927.3(e) of the WJTCA. Yet the payment of such fees is not absolute, that is, payment is required only when any person or public agency receiving a take authorization elects to pay these fees in lieu of satisfying the mitigation obligation provided for in Section 1927.3(a)(3).

1927.3(a)(3) The permittee mitigates all impacts to, and taking of, the western Joshua tree. The measures required to meet this obligation shall be roughly proportional in extent to the impact of the authorized taking of the species. When various measures are available to meet this obligation, the measures required shall maintain the permittee's objectives to the greatest extent possible. All required measures shall be capable of successful implementation. The permittee shall ensure adequate funding to implement the mitigation measures. In lieu of completing the mitigation obligation on its own, the permittee may elect to satisfy this mitigation obligation by paying fees, pursuant to the fee schedule in subdivision (d) or (e), for deposit into the fund.

The option to pay mitigation fees in lieu of completing the mitigation obligation by the permittee is reiterated in Sections 6.5 and 6.6.2 of the WJTCP.

Section 6.5 WJTCA provides a framework for authorizing take of western Joshua tree through the issuance of permits (Fish & G. Code, § 1927.3, subd. (a)). Pursuant to this framework, permittees may elect to pay fees in lieu of completing mitigation obligations. (page 6-11)

Section 6.6.2 Under WJTCA, a permittee may pay a fee to take each individual tree based on the size of tree in lieu of completing mitigation obligations on its own. (page 6-17)

However, the WJTCP does little to nothing to clarify the type or extent of the mitigation measures that could be prescribed to achieve the mitigation obligation addressed in Section 1927.3(a)(3) of the WJTCA, thereby relieving the permittee of paying mitigation fees. In particular, this lack of clarity leaves the single-family residential property owner in the Town of Yucca Valley in fear of potential financial devastation when connecting to the State-mandated sewer system, a nondiscretionary action. Such sewer connection is defined as an “accessory structure” in accordance with Section 1927.1(a) of the WJTCA, for which, in accordance with Section 1927.2(f), an authorization of take is required pursuant to Chapter 10 (commencing with Section 2800) of Division of the Fish and Game Code (which is the Natural Community Conservation Planning Act) upon approval of a natural community conservation plan, i.e., the WJTCP.

Further, it is not clear with respect to sewer connections in the Town of Yucca Valley how the measures required to meet the mitigation obligation pursuant to Section 1927.3(a)(3) of the WJTCA would differ from the avoidance and minimization requirement pursuant to Section 1927.3(a)(2).

1927.3(2) The permittee avoids and minimizes impact to, and the taking of, the western Joshua tree to the maximum extent practicable. Minimization may include trimming, encroachment on root systems, relocation, or other actions that result in detrimental but nonlethal impacts to a western Joshua tree.

Given that residential sewer connections are relatively straightforward with limited variables, one can argue that an alignment of the sewer connection that avoids and minimizes impacts to the western Joshua tree to the maximum extent practicable, consistent with Section 1927.3(a)(2), also mitigates all impacts to the western Joshua tree (upon employing all reasonable measures) consistent with Section 1927.3(a)(3). (Note that to “mitigate” impacts means to moderate or alleviate impacts, not completely avoid or eliminate them.) Therefore, it is reasonable to argue that upon compliance with Section 1927.3(a)(2), the permittee also has met the mitigation obligation as required by Section 1927.3(a)(3) and, as a result, is not required to pay in-lieu mitigation fees.

Finally, a lack of clarity regarding what may constitute measures to meet the mitigation obligation pursuant to Section 1927.3(a)(3) of the WJTCA, particularly with respect to sewer connections in the Town of Yucca Valley, could result in arbitrary determinations of such measures on a case-by-case basis. One must question how individuals tasked with project-specific determinations about mitigation measures required to meet the mitigation obligation make such determinations absent applicable guidance. For example, if a sewer connection is located to best avoid western Joshua trees located on a permittee’s residential property by ensuring the trench is equidistant from each of the affected trees, pursuant to the avoidance and minimization requirements of Section 1927.3(a)(2), what additional measures would be required to meet the mitigation obligation pursuant to Section 1927.3(a)(3)? Clearly, Appendix D, Avoidance and Minimization Best Management Practices and Guidelines, of the WJTCP does not offer guidance for such projects as this.

REMEDY

The WJTCP should clarify, for both landowners and individuals delegated with making determinations about mitigation measures to meet the obligation required by Section 1927.3(a)(3) of the WJTCA, the considerations to be employed when evaluating project sites that would differentiate between avoidance and minimization determinations pursuant to Section 1927.3(a)(2) and the mitigation obligation of Section 1927.3(a)(3). The WJTCP should also provide examples of measures that would satisfy the mitigation obligation, differentiating between such measures and avoidance-minimization measures. Absent such clarification, the landowner may be the subject of a potentially arbitrary determination that

could result in financial devastation when a different outcome might occur had a different individual made these determinations. Not only should clarity in this regard result in two individuals making the same determinations about measures to achieve the mitigation obligation for the same property, the same individuals would need to substantiate their determinations, thereby providing the landowner with rationale why the avoidance and minimization measures undertaken pursuant to Section 1927.3(a)(2) of the WJTCA do or do not satisfy the mitigation obligation required by Section 1927.3(a)(3).

Comment No. 2: Unsupportable Avoidance Buffer Determinations

I am pleased that the recommended minimum buffers for ground disturbance identified in Section 5.2.1, Action A&M 1.2 (Implement Avoidance Buffers) contained in the previous draft of the WJTCP have been removed. Since an explanation for this revision was not provided, it leaves me to conclude there is a lack of scientific evidence to support programmatically-applied avoidance buffers of 25, 50, and 186 feet, instead deferring determinations of buffers to delegated individuals on a case-by-case basis upon considering the information described in the WJTCP on page 5-11.

However, if there are insufficient data or evidence to support specific distance buffers to be utilized on a programmatic basis, how can the consideration of the information provided in the WJTCP to determine avoidance buffers on a case-by-case basis yield a different result? How would buffers determined on a case-by-case basis be any more supportable than those of a programmatic nature? The information identified for consideration had already been presented in the December 2024 draft of the WJTCP, but only to be utilized for potential adjustments to the specific-distance buffers. Now they themselves provide the basis for buffer determinations, not simply information to be considered for adjustments. For example, if a 50-foot avoidance buffer for a western Joshua tree one meter or greater in height but less than five meters in height can no longer be substantiated, how can a specific distance buffer determined on a case-by-case basis for the same tree be substantiated regardless of which factor cited in the WJTCP is considered? The end result is the same, that is, it lacks the scientific foundation for establishing an avoidance buffer at a specific distance from the tree whether 10, 25, or 50 feet, or some intermediate distance. Without such foundation, any buffer determination would be arbitrary and based on unsupported supposition.

Further, while the WJTCP describes information to be considered when determining avoidance buffers, it fails to elaborate how such information might inform the individual delegated to make a buffer determination. For example, does a greater versus lesser density of western Joshua trees suggest broader or narrower buffers? Does the location of a tree relative to existing structures suggest broader or narrower buffers? Do the intensity and depth of proposed ground-disturbing activities suggest broader or narrower buffers? Without clarification provided in the WJTCP, the public cannot ascertain or even make an educated guess as to the size of buffers to be determined for any particular project and, in turn, cannot estimate mitigation fees statutorily established in Sections 1927.3(d) and 1927.3(e) of the WJTCA should a permittee elect to pay these fees in lieu of completing the mitigation obligation on its own pursuant to Section 1927.3(a)(3).

Specific discussion regarding information provided on page 5-11 of the WJTCP under Action A&M 1.2 (Implement Avoidance Buffers) is provided as follows:

- “Density of trees within each project site as provided by the project census or other biological survey information.”

How would density of western Joshua trees on the project site inform the determination of avoidance buffers? Does a greater density suggest that buffers should be smaller in scope given

the potential for overlap of buffers, or does a greater density suggest broader buffers to ensure preservation of overlapping root networks? Does a greater density of trees suggest a greater potential for survival in response to project impacts, or does it suggest that a greater number of trees would be harmed from any one project? If the former, then a smaller avoidance might be warranted, but if the latter, then a broader buffer could be established. What knowledge is brought to the field determination by an individual charged with making buffer determinations? Is there sufficient clarity when considering the density of trees such that two different individuals would make the same determination?

- “Location of a tree in relation to existing structures, such as fences, driveways, or other permanent structures.”

Does close proximity to permanent structures suggest that western Joshua trees have been hampered in their growth and vitality, which might suggest that avoidance buffers should be broad to enable unencumbered root growth to occur where the permanent structure does not restrict growth, or might it suggest that thriving trees in such circumstances have not been unduly impacted so that avoidance buffers should be limited in extent? If western Joshua trees appear to thrive whether proximal to a fence, which creates little impact from the small areas disturbed for fence posts, or adjacent to driveways or block walls which restrict root extensions to the depth of the installation, how is this information to be considered when determining buffers? Does proximity to permanent structures suggest broader avoidance buffers to enhance protection on the side which is not encumbered by such structures? As with the item discussed above, is there sufficient clarity when considering the proximity of trees to existing structures such that two different individuals would make the same determination?

- “Intensity and depth of proposed ground-disturbing activities (e.g., trenching and excavation impacts may be different than installing fencing).”

Again, questions arise as to how consideration of such information will inform the determination of avoidance buffers. It can logically be inferred from the statement that projects requiring trenching and excavations would result in broader buffers than projects more limited in ground disturbance such as a fencing. Perhaps the less-intense trenching for sewer connections would yield smaller buffers than clearing an area to construct the foundation for a new house. But when it comes to setting an actual radial distance for the buffer, how is the buffer to be calculated? As with the two bullet points discussed above, anecdotal evidence suggests that reality and biological supposition do not equate. As an example (pertinent to my house in Yucca Valley), large western Joshua trees (greater than five meters in height) within five feet of a house built in 1978 are thriving. Given the growth rate of Joshua trees, they must have been in place when the ground for the foundation was cleared and accessory structures (underground power lines, cable and telephone lines, and water lines) were installed. Given such circumstances, how will an individual charged with determining buffers apply the “intensity and depth” consideration when it comes to trenching for sewer connections? Further concern regards the determination of avoidance buffers relative to existing septic tanks, particularly should it be mandated they be removed. Such action would likely result in greater ground disturbance than the trenching for the sewer connection itself, but how does this translate to buffer determinations? And consider the anticipated survival of western Joshua trees that are relocated whereby all roots within a short distance of the root ball are completely severed. Given this severity of impact, how is it reasonable that trenching for sewer connections and removal of septic tanks at a greater distance from a western Joshua tree than the width of the spade cut to remove the tree warrants an avoidance buffer that is greater in extent than the width of the spade cut? It does not pass the straight face test.

- “Duration of proposed impacts (temporary or permanent).”

For western Joshua trees left in place and not relocated, consideration of this factor suggests that Joshua trees are incapable of responding to ground-disturbing impacts. A couple of scenarios are worth considering in this regard. While a sewer connection is permanent, only the width of the pipe itself is permanent while vegetative growth above, below, and to the sides of the pipe would only be temporarily constrained. If a permanent block wall is constructed proximal to a western Joshua tree, is the tree incapable of sufficiently accessing water and nutrients from the roots growing parallel to or away from the block wall? Probably not as anecdotal evidence shows.

- “Additional minimization measures to reduce impacts of buffer encroachment (e.g., supplemental watering, protecting roots and trees from access, or avoiding equipment damage, etc.).”

Consideration of such measures directly affects the practicability of project design and completion. Of primary concern with respect to sewer connections for single-family residences to the State-mandated sewer system in the Town of Yucca Valley is how the application of potential minimization measures described above would affect the determination of avoidance buffers, and whether individual homeowners have the financial capacity to implement these measures. How could potential equipment damage from trenching be avoided? It may or may not be practicable to dig these trenches by hand depending on the length of the trench and the nature of the soil (clay-like hard-packed material versus loose alluvium). Would avoiding equipment damage result in smaller avoidance buffers? An appropriate minimization measure would be proper alignment of the sewer connection to avoid, to the greatest degree practicable, western Joshua trees. If mechanized equipment is necessary to dig the trench, would this result in a broader avoidance buffer thereby ensuring that the trenching activity occurs within the buffer zone and mitigation fees are paid? Further, as a minimization measure, what is meant by “protecting roots and trees from access”? While it may be inferred that it means “motorized” access, it is not clear. Does it also mean pedestrian access? Once again, is there sufficient clarity when considering the potential application of mitigation measures such that two different individuals would make the same determination regarding avoidance buffers?

- “Geographic location (e.g., is the project located in an urban, developed, or undeveloped area? Is the project within priority climate refugia?).”

One might infer that projects located in developed urban areas would result in smaller avoidance buffers given that western Joshua trees have already been impacted in such areas and broad buffers might achieve limited results regarding protections for the species, and that broader buffers in undeveloped areas and within priority climate refugia would be warranted as survival of the species would be more likely therein. Or, because it is not clear, would broader buffers be preferred in urban and developed areas because it is here that threats are greatest thereby requiring more protection from ground-disturbing activities? Is Yucca Valley considered a developed urban area with respect to the determination of avoidance buffers, or something in between an urban developed area and an undeveloped area?

- Life stage of tree, including reproductive stage. Branched trees are more likely to have produced seed and may have more extensive root structures.”

While the specific distance parameters for avoidance buffers have been removed from the June draft of the WJTCP, this consideration suggests broader buffers could be established for shorter branched trees (those less than five meters in height) than would have previously been set. In fact,

this consideration could result in greater mitigation fees since many branched trees between one and five meters in height might have previously fallen outside the applicable 50-foot buffer. It is unclear whether branched trees less than five meters in height could be considered in a reproductive stage that would warrant a broader avoidance buffer. Therefore, it is worth asking whether all western Joshua trees less than five meters in height would be definitively considered as not being in a reproductive phase and therefore would have less extensive root structures, thereby warranting a reduced avoidance buffer despite branching. Or will we see Joshua trees between one and five meters in height be assigned broader buffers if they are branched, possibly indicating they may have produced seed and may have more extensive root structures consistent with mature trees?

REMEDY

This unfortunate circumstance could be remedied in one of two ways, though the first would fall victim to the same shortcomings as those described above:

(1) Elaborate on the manner in which the information to be considered when determining an avoidance buffer is intended to inform individuals delegated with making buffer determinations. The public deserves to know how this process is to work, particularly since it has a direct bearing on determining the financial burden each project proponent would incur upon payment of in-lieu mitigation fees. The buffer determination process and in-lieu mitigation fee payments cannot be separated. However, as described above, the determination of buffers that vary in width based on the information to be considered when making such determinations is inherently arbitrary absent scientific evidence that justifies any particular distance. For example, if it is determined that a 20-foot buffer would be warranted, there must be rationale as to why a 10-foot buffer is insufficient to achieve sufficient protection of root structure, as well as why a 30-foot buffer is unnecessarily broad to achieve the same purpose.

As expressed in Section 1927.3(a)(2) of the WJTCA, avoidance and minimization of impacts to, and the taking of, the western Joshua tree to the maximum extent practicable does not mean that impacts cannot occur, instead describing that encroachment on root systems resulting in detrimental but nonlethal impacts is allowable. This begs the question of how one determines the size of a buffer zone in which detrimental but nonlethal impacts are allowable within the context of avoidance and minimization measures. Further, given the inclusion of root encroachment that results in detrimental but nonlethal impacts to a western Joshua tree as an allowable avoidance and minimization condition, what is the purpose of establishing avoidance buffers of any size beyond those necessary to protect the root ball (significant damage to which could be lethal) other than as a means to determine mitigation fees?

When considering single-family residential properties, it would appear that conservation of western Joshua trees is secondary, at best, and the collection of funds for land acquisition in priority climate refugia is primary. Is it fair and just to burden the residents of the Town of Yucca Valley with bankrolling a land acquisition program when they are simply conforming with the nondiscretionary requirement to connect to the State-mandated sewer system?

(2) Considerable effort by the Department of Fish and Wildlife has resulted in guidelines being established for successful relocation of western Joshua trees. While relocation is generally considered a last resort when leaving trees in place is not practicable for undertaking certain projects, the underlying assumption is that despite severing the roots surrounding the root ball from the outer root network, the tree is likely to survive when relocated if various prescriptive measures are implemented. The key concept to reiterate is that western Joshua trees can thrive even when the root network is completely severed as long as the root ball and attached roots within the diameter of the spade cut remain intact.

This concept should be applied when determining avoidance buffers, particularly since such buffers relate to western Joshua trees that will not be relocated, instead remaining in place. It would be reasonable to programmatically establish buffers that do not exceed the width of typical spade cuts which occur when relocating trees and severing the root network. It would be logical to assume that impacts occurring a greater distance from a western Joshua tree than inflicted by a spade cut would not significantly impact a tree's health. If a western Joshua tree can sustain the complete severing of its root system and regrow that system upon replanting, how could trenching for a sewer connection in the Town of Yucca Valley which would avoid the root ball and, in fact, avoid much of the root system, result in significant impacts that exceed the statutory avoidance and minimization requirement that allows for "encroachment of root systems ... or other actions that result in detrimental but nonlethal impacts to a western Joshua tree"?

Therefore, the recommendation is to establish avoidance buffers at a width no greater than the typical spade cut that would occur upon relocation of a western Joshua tree. Such a buffer would be established for trees of any size. This approach would avoid the arbitrary determination of buffer size, as well as avoid unreasonable financial burdens placed on project proponents. While the Conservation Fund would realize less in fee payments, the receipts could be defended as derived through a fair implementation of the WJTCA. It is important to acknowledge that the mitigation fees described in Sections 1927.3(d) and 1927.3(e) of the WJTCA apply upon the authorization of take and in lieu of satisfying the mitigation obligation by the project proponent on its own as provided for in Section 1927.3(a)(3). If no take authorizations are required, as would occur where western Joshua trees occur outside avoidance buffers as determined in compliance with WJTCP guidelines, no mitigation fees are required.

Comment No. 3: Ten-Tree Limit Upon Delegation of Take Authorizations

Section 1927.3(c) of the WJTCA provides that the California Department of Fish and Wildlife may enter into an agreement with any county or city to delegate to the county or city the ability to authorize the taking of western Joshua trees associated with a variety of projects, including sewer connections (which are defined as "accessory structures"), but only if certain conditions are met. Among these conditions described in Section 1927.3(c)(3) is that the project will take no more than 10 individual western Joshua trees on the project site, including for constructing an accessory structure such as a sewer connection.

If the Town of Yucca Valley, for example, is delegated such authority, it could find itself unable to authorize take of western Joshua trees for connections to the State-mandated sewer system if more than 10 western Joshua trees occur within the yet-undetermined buffer zones. Whether the Town could authorize such take is largely dependent on buffer zone determinations. Under the previous draft of the WJTCP in which the extent of avoidance buffers was precisely described, more than 10 western Joshua trees would be subject to take on many residential properties, including my own, hence the Town could not authorize the taking and the sewer connection could not be made. But connections to the sewer system are nondiscretionary. It is not acceptable that take authorizations be denied, thereby subjecting residents to potential penalties of up to \$5,000 per day for failure to connect to the sewer system within the allotted timeframe. The potential for such circumstance must be averted.

REMEDY

The WJTCP should describe the potential for non-issuance of incidental take permits as described above and suggest how non-issuance for this reason may be overcome. Strict compliance with the WJTCA in this regard may force authorizations for take to be issued by the California Department of Fish and Wildlife. Should this occur, the concern of landowners in the Town of Yucca Valley who must connect to the State-mandated sewer system within 180 days of the main line being completed is that the Department may be unable to process a large number of permits in sufficient time to meet the connection deadline.

Whether the local jurisdiction could acquire an exemption to the 180-day deadline issued by the Water Quality Control Board is unknown.

Comment No. 4: Incorrect Assertion that Adoption of the WJTCP is Voluntary

It is asserted in the Introduction to the WJTCP that management actions identified in the Plan “can be voluntarily adopted and implemented by project proponents ... to help conserve and protect the species from harm” and that the Plan “does not create new statutory or regulatory mandates” (pages 1-1 and 1-2). Likewise, preparation of a conservation plan to conserve western Joshua trees, as mandated by Section 1927.6 of the WJTCA, is accomplished in accordance with the Natural Community Conservation Planning Act (Sections 2800 – 2835 of the Fish and Game Code) which also asserts that natural community conservation planning is a “voluntary and effective planning process ... to protect ... landowners and other private parties” (Section 2801(f)).

In reality, however, management actions identified in the WJTCP are not voluntary. While it is asserted that management actions identified in the Plan can be voluntarily adopted and implemented, Section 1927.2(f) of the WJTCA indicates otherwise: “Upon the approval of a natural community conservation plan that provides for the conservation of the western Joshua tree as a covered species, the authorization of take of a western Joshua tree for any project or activity covered by the plan [such as residential sewer connections or “accessory structures”] shall only be pursuant to Chapter 10 (commencing with Section 2800) of Division 3 [of the Fish and Game Code].” It is important to note that Chapter 10 constitutes the Natural Community Conservation Planning Act, so when it is mandated that take authorization must be pursuant to Chapter 10, it indicates that such authorization must conform to management actions identified in the WJTCP. Hence, while adoption and implementation of a conservation plan standing on its own would be voluntary consistent with the Natural Community Conservation Planning Act, the WJTCA directs otherwise. In accordance with the WJTCA, adoption and implementation of the WJTCP is not voluntary since any take authorization related to projects covered by the Plan “shall only be pursuant” to the Plan (Section 1927.2(f)).

REMEDY

It is recommended that the WJTCP reiterate the WJTCA’s requirement relative to take authorizations, thereby clarifying that adoption and implementation of management actions identified in the Plan are not, in fact, voluntary. While this raises issues related to application of the California Environmental Quality Act in that the WJTCP may, in fact, create regulatory mandates given language in the WJTCA, this conundrum should not deter the Commission from concluding the obvious and taking an appropriate action. Clearly, the WJTCA has created a snag in what otherwise would have been a planning process not constrained by specific statutory requirements for conservation of an individual species despite the lack of a decision to date by the Commission to list the western Joshua tree as threatened or endangered under the California Endangered Species Act, instead declaring it to be a candidate species.

Comment No. 5: Lack of Clarity How the WJTCP Applies During the Candidacy Period

There appears to be an inconsistency in the WJTCA with regards to obtaining a take authorization while the western Joshua tree remains a candidate species for listing under the California Endangered Species Act.

1927.2(b) During any period in which the western Joshua tree has been designated by the commission as a candidate for listing under the California Endangered Species Act,

any person or public agency seeking a take authorization for the western Joshua tree may obtain a take authorization as provided by the California Endangered Species Act or by electing to pay the fees set forth in Section 1927.3.

Currently, the western Joshua tree is a candidate for listing. Hence, there are two options for obtaining a take authorization as provided by the WJTCA: (1) in accordance with the California Endangered Species Act, or (2) paying the mitigation fee described in the WJTCA. First, the option of simply electing to pay a mitigation fee to obtain take authorization improperly suggests that such fee payment negates the requirement to obtain an incidental take permit, though the reference to Section 1927.3 in its entirety creates confusion as to the permit requirement. Second, the payment of mitigation fees is predicated on the permittee's decision to not undertake the mitigation obligation on its own pursuant to Section 1927.3(a)(3), so suggesting that the permittee simply pay a fee to obtain a take authorization is misleading at best.

Notwithstanding these issues, Section 1927.2(f) seems contradictory to the options for obtaining take authorization pursuant to Section 1927.2(b).

1927.2(f) Upon the approval of a natural community conservation plan that provides for the conservation of the western Joshua tree as a covered species, the authorization of take of a western Joshua tree for any project or activity covered by the plan shall only be pursuant to Chapter 10 (commencing with Section 2800) of Division 3.

If the Commission approves the WJTCP at its August meeting, thereby establishing the WJTCP as the only vehicle for obtaining a take authorization pursuant to Section 1927.2(f), a conflict occurs in this regard as long as the western Joshua tree remains a candidate species. Clearly, upon a determination by the Commission that the western Joshua tree warrants endangered or threatened status pursuant to the California Endangered Species Act, or such listing is not warranted, the provisions at Section 1927.2(b) would no longer apply. But Section 1927.2(b) remains in force absent such determination by the Commission. Hence, one must question how take authorization is to be obtained when two different scenarios are prescribed given the western Joshua tree's current status.

REMEDY

The remedy is as follows: (1) the WJTCP clarifies how both Sections 1927.2(b) and 1927.2(f) are applied while the western Joshua tree remains a candidate species, or (2) the Commission moves quickly to make a determination regarding listing so that Section 1927.2(b) becomes inoperative and either Section 1927.2(d) or Section 1927.2(e) become operative. It is noteworthy that whether Section 1927.2(d) or Section 1927.2(e) become operative, approval of the WJTCP establishes it as the vehicle for obtaining incidental take permits pursuant to Section 1927.2(f).

Again, thank you for this opportunity to comment on the draft WJTCP.

From: Dewayne Dante [REDACTED]

Sent: Tuesday, July 22, 2025 07:58 AM

To: [REDACTED]; FGC <FGC@fgc.ca.gov>

Subject: Western Joshua Tree Conservation Act - Informational Webinar for California Native American Tribes

WARNING: This message is from an external source. Verify the sender and exercise caution when clicking links or opening attachments.

Dear Mr. Bonham and ALL The California Department of Fish and Wildlife employees,

I am writing to bring your awareness to 9 parcels of dense Joshua Tree woodlands in Yucca Valley - a total of 23 acres. These 23 acres are a portion of a much larger, continuously dense Joshua Tree Forest. These incredibly healthy Joshua Tree woodlands are the home to several hundreds of healthy, thriving Joshua Trees with all ecosystems alive and intact. Numerous species inhabit this forest. These 9 parcels were recently purchased in September 2024 by a 25-member Native American tribe located in Coachella, CA., the Twenty-Nine Palms Band of Mission Indians. Their official reservation is approx. 600 acres between the cities of 29 Palms and Coachella, CA. The tribe is currently petitioning these 23 acres of Joshua Tree woodlands to become sovereign.

As you may recall in 2011, the Twenty-Nine Palms Band of Mission Indians were interested in building a casino in Joshua Tree. Public comment and community involvement were allowed. With the opposition of Senator Dianne Feinstein and residents allowed to speak, voicing their opposition, the casino project was shut down.

In Yucca Valley 2020-2025, approx. 13 miles from Joshua Tree National Park, the tribe purchased 7 acres of Joshua Tree Woodlands in Yucca Valley and petitioned the BIA for off-site reservation. The opportunity was not made available for comment; local and state wildlife organizations or residents have had no voice. These 7 acres have now become sovereign.

On the sovereign 7 acres, there is now a cannabis dispensary, and the tribe will soon be constructing a gas station and travel center with underground gas tank storage. The EPA has approved this 7-acre development in Yucca Valley and approved 2 other tribe development sites - one in 29 Palms and one in Joshua Tree.

According to a letter that The Morongo Basin Action Committee received from an attorney representing the tribe, while clearing the land for the cannabis dispensary, the tribe and their developers did not kill Joshua Trees but transplanted a few Joshua Trees.

It seems the developers are slowly clearing the 7 acres now to build the gas station and travel center; they are leaving the cactus and Joshua Trees standing for now.

The 23 acres next to the 7 acres of sovereign land in Yucca Valley are currently being petitioned by the tribe to become sovereign.

If these 23 acres become sovereign, I do believe the impact on wildlife and the ecosystems will cause severe, irreversible damage. I cannot imagine pulling out several hundred Joshua Trees and replanting them.

It seems the California Department of Fish and Wildlife has created a new policy between Native American tribes and the California Department of Fish and Wildlife. There needs to be more involvement and scrutiny from the California Department of Fish and Wildlife in the application process for tribes when they are purchasing fee-to-trust lands. Including proof of historical connection to lands the tribes wish to obtain into trust. Hunting and gathering and walking through an area in my opinion does not meet strong historical connection.

These BIA fee-to-trust applications - specifically in Yucca Valley for these 7 acres that have been approved for sovereignty - seem to be way too easy regarding wildlife preservation.

Communication between tribes, their developers, local government, and the people that actually live in the area must be more focused on community involvement, with more serious inquiry to the actual location and its significance to wild flora, fauna, and animals. The proximity to corridors for bighorn sheep, bobcats and the desert tortoise are in question with these specific land acquisitions in Yucca Valley.

It seems there is a golden opportunity for the Twenty-Nine Palms Band of Mission Indians, specifically in this region of the Morongo Basin, to increase their corporate holdings. Currently, it seems the 25-member tribe has 607 acres, 2 casinos, 3 cannabis dispensaries, and a 59-pump truck stop. With no opposition allowed in Yucca Valley and the Morongo Basin, and the ability to bypass state wildlife protection laws, it would be possible for tribes on sovereign lands acquired to have the power to decimate nature.

I would be more than happy to show you the 23 acres of Joshua Tree woodlands in Yucca Valley that the tribe is currently petitioning the BIA and federal government to become reservation lands. You will be astonished at the vibrancy of the life and health of this land.

The Twenty-Nine Palms Band of Mission Indians could not have chosen a worse location to build on. If they are approved for the additional 23 acres, so many species will decline. The location is less than 2 miles from important protected lands. It is unfortunate the tribe did not reach out to the community and wildlife conservancies to find a better-suited land for development.

It seems to me that awareness needs to become extremely clear to tribes that once ecosystems disappear, that's it.

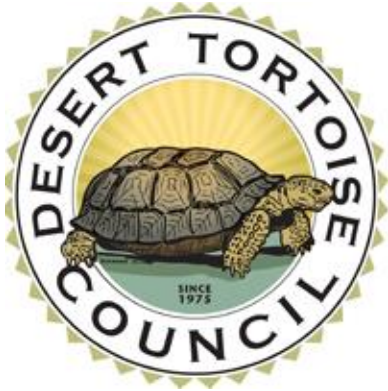
We would appreciate any effort you can put forth to prevent these 23 acres of Joshua Tree woodlands in Yucca Valley from becoming sovereign.

Please let me know if I can provide any additional information.

Sincerely,

Dewayne Ethan Dante

[REDACTED]



DESERT TORTOISE COUNCIL

3807 Sierra Highway #6-4514

Acton, CA 93510

www.deserttortoise.org

eac@deserttortoise.org

Via email and Certified Mail Return Receipt

March 18, 2025

Amy Dutschke
Pacific Regional Director
Bureau of Indian Affairs
2800 Cottage Way, Suite W-2820
Sacramento, CA 95825
amy.dutschke@bia.gov

RE: Development of Land Held in Trust for the Twentynine Palms Band of Mission Indians

Dear Ms. Dutschke,

The Desert Tortoise Council (Council) is a non-profit organization comprised of hundreds of professionals and laypersons who share a common concern for wild desert tortoises and a commitment to advancing the public's understanding of desert tortoise species. Established in 1975 to promote conservation of tortoises in the deserts of the southwestern United States and northern Mexico, the Council routinely provides information and other forms of assistance to individuals, organizations, and regulatory agencies on matters potentially affecting desert tortoises within their geographic ranges.

Both our physical and email addresses are provided above in our letterhead for your use when providing future correspondence to us. When given a choice, we prefer to receive emails for future correspondence, as mail delivered via the U.S. Postal Service may take several days to be delivered. Email is an "environmentally friendlier way" of receiving correspondence and documents rather than "snail mail."

The Mojave desert tortoise is among the top 50 species on the list of the world's most endangered tortoises and freshwater turtles. The International Union for Conservation of Nature's (IUCN) Species Survival Commission, Tortoise and Freshwater Turtle Specialist Group, now considers the Mojave desert tortoise to be Critically Endangered (Berry et al. 2021), "... based on population

reduction (decreasing density), habitat loss of over 80% over three generations (90 years), including past reductions and predicted future declines, as well as the effects of disease (upper respiratory tract disease/mycoplasmosis). *Gopherus agassizii* (sensu stricto) comprises tortoises in the most well-studied 30% of the larger range; this portion of the original range has seen the most human impacts and is where the largest past population losses have been documented. A recent rigorous rangewide population reassessment of *G. agassizii* (sensu stricto) has demonstrated continued adult population and density declines of about 90% over three generations (two in the past and one ongoing) in four of the five *G. agassizii* recovery units and inadequate recruitment with decreasing percentages of juveniles in all five recovery units.”

This status, in part, prompted the DTC to join Defenders of Wildlife and DTPC (Defenders of Wildlife et al. 2020) to petition the California Fish and Game Commission in March 2020 to elevate the listing of the Mojave desert tortoise from Threatened to Endangered in California. In its status review, California Department of Fish and Wildlife (CDFW) (2024a) stated: “At its public meeting on October 14, 2020, the Commission considered the petition, and based in part on the Department’s [CDFW] petition evaluation and recommendation, found sufficient information exists to indicate the petitioned action may be warranted and accepted the petition for consideration. The Commission’s decision initiated this status review to inform the Commission’s decision on whether the change in status is warranted.”

Importantly, in their April 2024 meeting (CDFW 2024b), the California Fish and Game Commission voted unanimously to accept the CDFW’s petition evaluation and recommendation to uplist the tortoise from threatened to endangered under the California Endangered Species Act based on the scientific data provided on the species’ status, declining trend, numerous threats, and lack of effective recovery implementation and land management. The Commission is expected to vote on uplisting the tortoise to endangered in the next few months.

Recently the Council became aware of a development project underway on land held in trust by the Bureau of Indian Affairs (BIA) for the Twentynine Palms Band of Mission Indians (Tribe). The project is located on the west side of Yucca Valley and south of State Highway 62 in San Bernardino County, California. It is referred to as the Cielo property and consists of six parcels – APN 0586-042-01, APN 0586-042-02, APN 0586-042-03, APN 0586-042-04, APN 0586-042-05, and 0586-042-06. We understand that a business was constructed on the property, a marijuana dispensary, and another project is planned – to construct, operate, and maintain a travel center that includes a gas station with numerous fuel pumps and a store. The marijuana dispensary included a request to the Town of Yucca Valley (Town) for authorization to install one or more structures and/or infrastructure (e.g., utilities) on the property.

The Council is concerned that the completed project (marijuana dispensary) and proposed project (travel center) have not undergone appropriate National Environmental Policy Act (NEPA) compliance and Federal Endangered Species Act (ESA) compliance. Our concerns are based on the following information:

On December 13, 2022, the BIA issued a Notice of Decision (Case Number 23517) for the six parcels (Cielo property) to be held in trust by the BIA for the Twenty-nine Palms Band of Mission Indians (Tribe). In that decision document BIA relied on the following information regarding the future management of that property:

1. Under “25 C.F.R. §151.10(c) Purpose for which the property will be used” BIA stated, “The Cielo property is currently undeveloped open space. The Tribe has no plans to change the use of the Property.”
2. Under “25 C.F.R. §151.10(f) – Jurisdictional problems and potential conflicts of land use” BIA stated, “The acceptance of the Cielo property into federal trust status for the benefit of the Tribe will remove the property from State and local laws concerning real property taxation and other land use regulations. Tribal law will govern these activities after the property is accepted into trust, to much the same extent that it does now on existing trust land.” “It is our determination that there are no jurisdictional or potential land use conflicts regarding land use.”
3. Under “25 C.F.R. §151.10(h) – Environmental Compliance: The extent to which the applicant has provided information that allows the Secretary to comply with 516 DM 1-7 National Environmental Policy Act Revised Implementing Procedures, and 602 DM 2, Land Acquisitions: Hazardous Substances Determinations.”

For “National Environmental Policy Act Compliance . . . the proposed action herein has been determined not to require the preparation of either an environmental assessment (EA) of environmental impact statement (EIS). A categorical exclusion for the acquisition of the Cielo property was approved . . . Compliance with NEPA has been completed.”

4. For “Endangered Species Act (ESA) Compliance,” “The Endangered Species Act (ESA) requires federal agencies to determine if its action may affect a threatened or endangered species. The BIA review concludes no effects to endangered or threatened species would result from the Cielo acquisition.”
5. “25 CFR §151.11(c) – Where land is being acquired for business purposes, the Tribe shall provide a plan which specifies the anticipated economic benefits associated with the proposed use: The subject property is not being obtained for business purposes but will continue to be utilized as open space. A business plan is not required.”

This information provided in BIA’s Notice of Decision appears to be deeply flawed because it was based on inaccurate information and incomplete analysis of connected actions.

Regarding 1., some of the land has been developed. Please see Figures 1 through 3 – photographs of recent activity on the Cielo property are attached to this letter. The Tribe initiated communication with the Town regarding the development of the Cielo property in January 2023 a little more than 30 days after the BIA’s Notice of Decision was issued and shortly after the 30-day

appeal period ended. These communications continued until late 2024. If the Cielo property were to remain as open space, there would be no need to engage in conversations with the Town regarding the Cielo property for more than a year. This activity and timeline with the Town gives the impression that the Tribe had plans to develop the property prior to BIA's issuance of the Notice of Decision. The Cielo property now has a marijuana dispensary located on it. The Council concludes that the information and conclusion that the BIA provided for this factor was incorrect. Part of the Cielo property has been developed. The Tribe had plans to change the use of the Property.

Regarding 2., the determination of no potential conflicts with land use appears to not be supported by the information provided in the Notice of Decision. We assume this determination was based on BIA's assumption from information provided by the Tribe that the land would not be developed.

The additional statement that Tribal law will govern these activities after the property is accepted into trust, to much the same extent that it does now on existing trust land" is unclear in its meaning. The marijuana dispensary is located near existing residences. The Tribe recently developed a large travel center on its property in Coachella (<https://www.mobilityplaza.org/news/38981>). According to "Gary Fletcher, executive director of travel centers for the tribe, the 12,000-square-foot facility marks the debut of a new era for the tribe's retail ventures. Apart from its Kupa Coffee Shop, the brand expects to expand the site with a truck wash, truck repair facility, and a trucker lounge by early 2025." "This Coachella location boasts 59 fueling positions, with 36 under the auto canopy and 15 under the truck canopy, designed to accommodate a wide range of vehicles. The tribe plans to open three more sites on Twenty-Nine Palms Band of Mission Indian Reservation land across California."

The Council is concerned that the Tribe is planning to develop a similar travel center on the Cielo property. If the property were under the jurisdiction of the Town of Yucca Valley, there would be a public hearing for the proposed development, the need for a conditional use permit, and the preparation of, as a minimum, a mitigated negative declaration under the California Environmental Policy Act (CEQA) because of the numerous new impacts this development would impose on the human environment in the vicinity of the development. A similar process would have occurred for the development of the marijuana dispensary. The Council concludes that the typical land use process to disclose a proposed development project on private property, notify nearby land owners, analyze the impacts of the proposed development project, provide for public input, and mitigate the impacts to minimize or avoid impacts to the human environment has been circumvented by transferring the lands to Tribal control where these land use processes are no longer required. The Council concludes that the information and conclusion that the BIA provided for this factor was unsupported and incorrect.

Regarding 3., BIA states that a categorical exclusion for the acquisition of the Cielo property was approved and compliance with NEPA has been completed. However, NEPA requires that connected actions be evaluated together. Before the development of the travel center or other development project could occur under tribal law (and bypassing state and local requirements for environmental compliance and development including development that include hazardous

materials), the subject land needed to be transferred to the reservation. Thus, it appears that BIA segmented its NEPA compliance by isolating the acquisition of the property as one NEPA action while not addressing the Tribe's plans to develop the property. This is a violation of NEPA. The Council concludes that the information and conclusion that the BIA provided for this factor was incorrect.

BIA should require the Tribe to halt all development activities on the Cielo property that BIA holds in trust, and BIA should complete NEPA compliance for the existing and proposed development. The appropriate NEPA compliance document for a marijuana dispensary or a travel center would be an environmental assessment that is circulated for public comment or an environmental impact statement if the Tribe has other related development projects (which the quote from Gary Fletcher above indicates).

Regarding 4., BIA concludes "no effects to endangered or threatened species would result from the Cielo acquisition." In Section 4.4 "Endangered Species and Historic Property Consultation," of the BIA's NEPA Guidebook (2012), BIA states that:

"Under Section 7 consultation under the ESA [Endangered Species Act] (50 CFR 402) is not required when the BIA determines that a project will have "no effect" to an endangered species or critical habitat because none are located in the project area. Any determination beyond a "no effect" will require informal and possibly formal consultation with the U.S. Fish and Wildlife Service (USFWS). The BIA offices should maintain close coordination with local USFWS offices to ensure proper consultation occurs."

With regard to the Notice of Decision, we found no information in the Notice that documented that the NEPA Guidebook's requirements had been followed, that is, that "the BIA determined that a project will have "no effect" to an endangered species or critical habitat because none are located in the project area."

The Council requests that BIA provide supporting documentation of the process and information that it used to determine that no Mojave desert tortoises were or are located in the project area in its Notice of Decision.

We are puzzled as to how the BIA determined that there are no threatened or endangered species located in the project area. The Cielo property is within the range of the federally threatened Mojave desert tortoise (USFWS 2011, page 46), contains suitable habitat for the tortoise (Nussear et al. 2009, page 13; USFWS 2011, page 52), and is connected/adjacent to larger areas of suitable habitat for the tortoise (USFWS 2011, page 52; Averill-Murray et al. 2021). A query of IPaC (Information for Planning and Consultation; <https://ipac.ecosphere.fws.gov/location/index>), a planning tool provided by the USFWS on-line, shows the Mojave desert tortoise as occurring in the project area. These documents and the IPaC website are available on-line to the public.

We are unaware that surveys were conducted by BIA to document that no tortoises were occupying the project area. For the tortoise, the USFWS has issued pre-project survey level protocols for the tortoise to be conducted by biologists deemed qualified by the USFWS throughout the “action area” of the development on the Cielo property. The “action area” is defined in 50 Code of Federal Regulations 402.2 and the USFWS Desert Tortoise Field Manual (USFWS 2009) as “all areas to be affected directly or indirectly by proposed development and not merely the immediate area involved in the action.” Thus, the action area that is surveyed for tortoises/tortoise sign is larger than the project footprint/project site. Absent these surveys and coordination with the USFWS, the BIA has provided no information to support its conclusion of “no effect” as described in the BIA NEPA Guidebook (BIA 2012).

Regarding the current development of the Cielo property, because several sources listed above indicate that the tortoise/tortoise habitat occur in the project area, the Council is concerned that the construction, operation, use, and maintenance of this project is likely to adversely affect the tortoise and may result in the take of the tortoise. Take includes harming or harassing a listed species that may occur from direct or indirect impacts from the project.

For example, because tortoises spend most of their time underground, it is extremely difficult to determine when conducting surface disturbance activities whether a hatchling to adult desert tortoise is in a burrow or tucked under a shrub from the vantage point of the operator of a grader, other heavy equipment, or a vehicle. This is an example of direct mortality. An example of an indirect impact that contributes to tortoise mortality includes providing subsidies of food, water, and sites for perching and nesting by common ravens (e.g., fences, walls, and other vertical structures; uncovered containers of trash, litter, etc.) and other tortoise predators. These and other impacts to the tortoise would be caused by the construction, operation, and use of the marijuana dispensary and the construction, operation, and use of the travel center.

As BIA is aware, compliance with the Federal Endangered Species Act (ESA) applies to any action that is authorized, funded or carried out by a federal agency, or any action by a state, tribal, or local agency or private entity that is likely to result in take of a federally listed species. Consequently, the Council is requesting that the BIA provide documentation to the Council of its consultation with the U.S. Fish and Wildlife Service (USFWS) regarding the construction, operation, use, and maintenance of the projects on the Cielo property and their direct and indirect effects/impacts to the tortoise. We presume that BIA would be the responsible entity for ensuring compliance with the Federal ESA because BIA is holding the Cielo property in trust for the Tribe.

Because BIA did not provide documentation to support the requirement that for a “no effect” determination the listed species is not present in the project area, several publicly available sources indicate that tortoises and tortoise habitat are in the project area, and the Cielo property has recently been developed, the Council concludes that the information and conclusion that the BIA provided for this factor in the Notice of Decision were unsupported and incorrect.

Regarding 5., apparently BIA was incorrect in its Notice of Decision that the “subject property is not being obtained for business purposes but will continue to be utilized as open space. A business

plan is not required.” Apparently, a marijuana dispensary is located on the Cielo property (see photos attached). Under the Controlled Substances Act (CSA), marijuana is a Schedule I controlled substance. This federal law currently prohibits the manufacture, distribution, dispensation, and possession of marijuana except in federal government-approved research studies. Selling marijuana is a felony with a federal felony with penalties of up to five years in jail and up to \$250,000 in fines.

Our understanding is that the Cielo property where the marijuana dispensary is located is held in trust by the BIA. The land held in trust by a federal agency that has a business on it that sells marijuana and its products, which is a felony under federal law, provides an interesting public perception.

BIA should halt the development and require the Tribe to prepare and submit a factual business plan including plans for other travel centers, a marijuana dispensary, and other businesses that may be related to this property/the use of this property.

Because the Notice of Decision was based on information that was incorrect and unsupported for several of the factors that must be addressed before making the Decision, the Council believes that BIA should ensure that compliance with environmental laws is carried out correctly for past actions implemented on the Cielo property.

Although these concerns focus on compliance with federal environmental statutes, regulations, and BIA policies, we are also concerned about the Tribe’s discretionary request to the Town of Yucca Valley for authorization to install one or more structures/infrastructure on the property (please see attached figures). The conversation between the Tribe and the Town started in January 2023 and continued until late 2024. The permitting and/or construction of the structure(s) and/or infrastructure may be considered discretionary under the California Environmental Quality Act (CEQA), which triggers compliance with other California environmental laws and codes by the Town of Yucca Valley. Consequently, we are sending a copy of this letter to the California Department of Fish and Wildlife, California Public Utilities Commission, and others who may have jurisdiction.

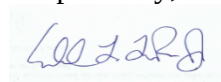
In previous letters to the BIA (e.g., September 21, 2020; 17 April 17, 2022; October 23, 2022) to the BIA’s Western Regional Office, the Council stated that the “Desert Tortoise Council wants to be identified as an Affected Interest for this and all other projects funded, authorized, or carried out by the BIA that may affect species of desert tortoises and that any subsequent environmental documentation . . . is provided to us at the contact information listed above.” The Council reiterates this request and identifies that the BIA did not notify the Council when it issued its December 13, 2022, Notice of Decision (Case Number 23517) for the Cielo property that is now the location of a marijuana dispensary.

To clarify, we ask that you notify the Council at eac@deserttortoise.org of any proposed projects that the BIA may be proposing to authorize, fund, or carry out in the range of any species of desert tortoise in the southwestern United States (i.e., *Gopherus agassizii*, *G. morafkai*, *G. berlandieri*,

G. flavomarginatus) so we may comment on it to ensure that the BIA fully considers and implements actions to conserve these tortoises as part of its directive to conserve biodiversity on lands it holds in trust.

Please respond in an email that you have received this comment letter so we can be sure our concerns have been registered with the appropriate personnel and office for this project.

Respectfully,



Edward L. LaRue, Jr., M.S.

Desert Tortoise Council, Ecosystems Advisory Committee, Chairperson

Attachments (3figur): Photos of the Cielo property with an existing business (marijuana dispensary), recent surface disturbance, and installation of infrastructure

Cc: Ann McPherson, Environmental Review, U.S. Environmental Protection Agency, mcperson.ann@epa.gov

Brian Croft, Assistant Field Supervisor, Palm Springs Fish and Wildlife Office, U.S. Fish and Wildlife Office, brian_croft@fws.gov

Peter Sanzenbacher, U.S. Fish and Wildlife Service, Palm Springs Fish and Wildlife Office, U.S. Fish and Wildlife Office, peter_sanzenbacher@fws.gov

Heidi Calvert, Regional Manager, Region 6 – Inland and Desert Region, California Department of Fish and Wildlife, Heidi.Calvert@wildlife.ca.gov

Colorado River Basin Regional Water Quality Control Board, info7@waterboards.ca.gov

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Figure 1. Red Falcon marijuana dispensary on Cielo property held in trust by the Bureau of Indian Affairs for the Twentynine Palms Band of Mission Indians.



Figure 2. Recent installation of infrastructure and Joshua tree uprooted on the Cielo property held in trust by the Bureau of Indian Affairs for the Twentynine Palms Band of Mission Indians.



Figure 3. Recent installation of infrastructure and surface disturbance of the Cielo property held in trust by the Bureau of Indian Affairs for the Twentynine Palms Band of Mission Indians.

