

California Department of Fish and Wildlife's
Evaluation of 2023 Decadal Management Review Marine
Protected Area Petition:

**Designate a New Chitqawi SMCA Near Morro Bay With a
Tribal Take Exemption for Santa Ynez Band of Chumash
Indians (2023-19MPA_AM1)**



I. PETITION SUMMARY

CFGF Tracking Number	2023-19MPA_AM1
Petition Contact/Affiliation	Sam Cohen, Santa Ynez Band of Chumash Indians (SYBCI)
Number of Proposed Actions	1
Affected MPAs	Chitqawi State Marine Conservation Area (SMCA; proposed new MPA)
Petition Summary	Designate a new SMCA in Estero Bay named Chitqawi SMCA with no take other than a tribal take exemption for the Santa Ynez Band of Chumash Indians.
Link to StoryMap page	2023-19MPA_AM1



July 2026

II. CDFW RECOMMENDATIONS AND BRIEF JUSTIFICATION

Note: If a change to the marine protected area (MPA) regulations is not needed to address the proposed change, California Department of Fish and Wildlife (CDFW) did not evaluate the proposed change using the framework. However, CDFW may recommend an alternative pathway to achieving the desired outcome of the proposed change.

Petition Action ID and Proposed Action	Petitioner's Stated Rationale and Brief Justification for Proposed Actions
2023-19MPA_1_AMI Designate a new (a) tribal co-management SMCA in Estero Bay named Chitqawi State Marine Conservation Area (SMCA) with (b) no take other than a tribal take exemption for the Santa Ynez Band of Chumash Indians.	The stated intent for the proposed creation of a new SMCA is to: (1) Strengthen MPA protections MPA Network-wide by providing an 'insurance factor' against the synergistic effects of anthropogenic disturbance while helping to reach the goal of 30% of California waters protected by 2030, and (2) Strengthen the role of tribes in MPA management, monitoring efforts, and marine education activities in the Central Coast region, as tribal MPAs were not considered during the MLPA Initiative planning process in the Central Coast.

CDFW Recommendation and Brief Justification

(a) CDFW supports with an Alternative Pathway the non-regulatory request to advance co-management with Santa Ynez Band of Chumash Indians (SYBCI).

At the April 2026 California Fish and Game Commission (CFGF) Tribal Committee meeting, SYBCI confirmed the tribe's intent to pursue co-management with CDFW in the MPA Network through non-regulatory means. CDFW may enter into tribal co-management agreements with tribes at any time and these do not require action from CFGF or consideration through CFGF's petition process or rulemaking.

Recognizing the deep cultural and historical ties of California Native American tribes to their ancestral lands and waters, CDFW is committed to exploring opportunities for co-management and co-stewardship of California's MPAs and/or areas outside the MPA Network with SYBCI and any other interested tribes.

The non-regulatory request to advance co-management is aligned with the state's commitments to strengthening and sustaining effective government to government relationships between the state and tribes (Governor Brown's Executive Order B-10-11, Governor Newsom's Executive Order N-15-19, the 2020 Ancestral Lands Policy, and the California Natural Resources Agency Tribal Stewardship Policy) and would advance the following DMR Recommendations: (1) Improve state agencies' tribal engagement and relationship building efforts, (2) Create a clear pathway to tribal MPA management, and (24) Work with CFGC and partners to better incorporate marine cultural heritage into the design of the MPA Network, which may lead to advancements in (3) Building tribal capacity to participate in MPA management activities (CDFW 2022). CDFW is committed to working with SYBCI on co-management within the four existing MPAs where SYBCI has a tribal exemption, and/or in areas outside the MPA Network, including the proposed Chitqawi area, without establishing a new MPA. These opportunities may be initiated and developed through non-regulatory frameworks and agreements outside of CFGC's petition process and could likely occur on a faster timeline than through the adoption of new MPAs through CFGC's regulatory process.

(b) Regarding the regulatory request in 2023-19MPA_AMI to establish a new SMCA in Estero Bay named Chitqawi with no take other than a tribal take exemption for SYBCI, CDFW recommends, CFGC Support with an Alternative Pathway and request CDFW engage with the SYCBI, other interested tribes, and California State Parks to explore designating the area as a State Marine Cultural Preservation Area (SMCPA) to acknowledge the cultural significance of the area, rather than CFGC establishing a new SMCA.

One of the stated purposes of establishing a new MPA called Chitqawi SMCA, with a tribal exemption for the SYBCI, is to strengthen the role of tribes in MPA management. The new proposed MPA would be in the waters directly adjacent to modern day Morro Rock. Morro Rock is recognized as a powerful and deeply important, culturally significant place to many tribal peoples, including SYBCI.

As an alternative to designating a new MPA, CFGC could request CDFW work with the California Native American tribes that have cultural ties to the area and California State Parks to explore designating a SMCPA to acknowledge the cultural significance of the area without limiting access to other tribes that have a historical connection to the area. This is consistent with DMR Prioritized Recommendation (24) Work with CFGC and partners to better incorporate marine cultural heritage into the design of the MPA Network. The justification for the recommendation to explore an alternative designation is based on the following important considerations and determinations:

The proposed change may advance the DMR Recommendations focused on tribal stewardship and co-management for SYBCI; however, the proposed new MPA would

exclude cultural and subsistence uses by other federally and non-federally recognized tribes that also consider the proposed area a sacred place. Other federally recognized tribes with cultural ties to the area that want to maintain existing access would need to submit a petition to request a future tribal take exemption in the proposed new Chitqawi SMCA, if adopted by CFGC. Current legislative and regulatory frameworks provide pathways for tribal take exemptions for federally recognized tribes (25 C.F.R. § 83, Cal. Code Regs. Tit. 14 § 632(a)(11)). There is currently no legislative or regulatory pathway for non-federally recognized tribes to receive such an exemption. An SMCPA is one option that would retain current access enjoyed by non-federally recognized and federally recognized alike, while still formally designating the area to recognize the cultural significance of Morro Rock and the surrounding area.

The petition lists several ecological goals that focus on protection of nearshore species and enhancing connectivity and ecosystem function. In terms of meeting the MLPA Science Advisory Team (SAT) Guidelines for size and spacing, the proposed MPA size (8.45 square miles) does not meet the minimum size criteria (at least 9 square miles), and thus, would need to be increased to meet the stated connectivity and habitat replication goals.

Nearly 27% of all state waters between and including the Piedras Blancas and Point Buchon clusters are protected within MPAs (e.g., between the Piedras Blancas and Point Buchon MPA clusters to the north and south). The proposed new Chitqawi SMCA would be within 27.02 miles of eight existing MPAs carefully designed during the Central Coast MLPA Initiative planning process. There are two “backbone” MPA clusters that bookend the proposed location, Point Buchon SMCA/State Marine Reserve (SMR) and Piedras Blancas SMCA/SMR, 7.37 miles to the south and 27.02 miles to the north, respectively. There are additional MPAs nearby, including Morro Bay SMR and State Marine Recreational Management Area (SMRMA), and White Rock and Cambria SMCAs. Adding a new MPA in this region of the MPA Network would not fill a connectivity or habitat representation gap or provide ecosystem or connectivity benefits when assessed per the SAT Science Guidelines.

Consistent with directives in the Fish & G. Code and 2016 Master Plan for MPAs (§§2853 and 2855, CDFW 2016), decisions regarding the siting of new MPAs and major modifications of existing MPAs must consider relevant information including, but not limited to, the socioeconomic and environmental impacts of various alternatives. The proposed location of the new Chitqawi SMCA overlaps with important commercial and recreational fishing grounds for species such as nearshore groundfish, market squid, and salmon. The proposed new MPA would also overlap with the Atascadero Artificial Reef, which was constructed in 1985 to enhance sportfishing in the area by increasing fish production in the area and promoting kelp growth, although the status of the reef and

how much it is presently utilized for fishing is unknown. The area also provides many opportunities for human connection with the ocean through non-consumptive activities such as swimming, surfing, beach combing, and wildlife viewing. Understanding how people interact with and derive benefits from the ocean and how these benefits may be affected by MPAs is challenging (Hall-Arber et al. 2021, CDFW 2022, Travis et al. 2026). Social science research within the MPA Monitoring Program is a rapidly expanding field of MPA research, as well as a priority DMR Recommendation to invest in improving understanding of the human dimensions of MPAs and develop a human dimensions working group and research agenda (DMR Recommendation 12).

Finally, the proposed location of the new SMCA has the potential to affect existing regulations, permits, leases, or management activities of a number of agencies. These interagency considerations are in alignment with the Marine Managed Areas Improvement Act (Pub. Resources Code §§ 36601, 36800). There are several water management facilities that are permitted to discharge in the waters in and around the proposed MPA. Although these facilities are required to meet water quality standards, there are potential water quality concerns with siting a new MPA at the proposed location. The establishment of the new MPA at this location would likely affect future Regional Water Board's permitting and management activities.

The proposed new MPA is adjacent to Morro Strand State Beach, which is managed by California State Parks and is designated as a State Recreation Unit under Cal. Code Regs. Tit. 14 section 4753. State Beaches are those "consisting of areas with frontage on the ocean, or bays designed to provide swimming boating, fishing, and other beach-oriented recreational activities." (Pub. Resources Code § 5019.56). According to 'California State Parks Guidelines for Creating Marine Managed Areas' (CDPR 2010), "When an MPA is proposed offshore of an existing terrestrial California Park System unit, the terrestrial park's general plan and existing public use patterns should be a guiding element for the designation and shoreline boundaries of the MPA." The General Plan for Morro Strand State Beach¹, established in 1988, cites surf fishing as one of the primary recreation activities in the unit. Fishing remains an existing allowed activity at Morro Strand State Beach² and any new limitations on recreational fishing should be considered in consultation with California Department of Parks and Recreation (CDPR) to avoid conflicting activities or public confusion.

There is also jurisdictional overlap with sovereign tidelands and submerged lands that were granted to the City of Morro Bay. Additional coordination with State and Regional

¹ [General Plans and Management Plans](#)

² [Morro Strand State Beach](#)

Water Quality Control Boards, CDPR, and the City of Morro Bay would be needed as part of considering a new MPA at this location.

The proposal to create the new Chitqawi SMCA could help advance adaptive management Recommendations 1, 2 and 24 from the DMR with SYBCI, but it does not sufficiently address a demonstrated performance gap or current or emerging MPA management challenge when measured against SAT Science Guidelines. The Chitqawi SMCA as proposed could limit other tribes' ability to continue subsistence practices and cultural harvest. Designating the area as a SMCPA is an alternative pathway that could be explored to acknowledge the cultural significance of the area without limiting subsistence practices and cultural harvest.

III. BIN 2 PETITION GROUPING: IDENTIFY TRIBALLY-LED PETITIONS

The 2023 MPA Petition Companion Document (Attachment 1) includes a summary of the process for identifying Tribally-led petitions, CDFW's outreach to all California Native American tribes³ (tribes) throughout the petition process, and a summary of outreach and engagement with Tribally-led petitioners. Tribally-led petitions were evaluated with CDFW 2023 MPA Bin 2 Petition Evaluation Framework.

WAS THE PETITION SUBMITTED BY A CALIFORNIA NATIVE AMERICAN TRIBE, REPRESENTATIVE DESIGNATED BY A TRIBE OR TRIBAL ORGANIZATION, OR HAVE A TRIBAL CO-SPONSOR?

Yes, this petition was submitted by the Santa Ynez Band of Chumash Indians, hereafter referred to as SYBCI or the tribe.

IF YES, (a) DOES THE PROPOSED CHANGE EXPLICITLY AIM TO ADVANCE TRIBAL CO-MANAGEMENT, SUBSISTENCE HARVESTING, STEWARDSHIP, AND/OR PROVIDE A TRIBAL BENEFIT THROUGH RECOGNIZING THE CULTURAL SIGNIFICANCE OF AN AREA?

Yes. The SYBCI identifies Chitqawi as "the northern most coastal Chumash village site of the territory traditionally inhabited by the diverse Chumash peoples," (Milliken and Johnson 2017) although, according to their petition, the exact historical location of the village is unknown. SYBCI requests the creation of a new Tribal MPA to foster co-management and ensure that "Tribal nations are integrated and engaged in marine life protection and education efforts."

³ California Native American tribe is the preferred term to use per the Governor's Office of Tribal Affairs when generally mentioning tribes of California, both federally and non-federally recognized.

(b) IS THE PROPOSED REGULATORY CHANGE EXPLICITLY LINKED TO A TRIBE OR TRIBES? (I.E. TRIBAL EXEMPTION, TRIBAL TAKE ONLY MPA, OR NEW MPA FOR CO-MANAGEMENT)?

Yes. The proposed regulatory change is explicitly linked to the SYBCI, and the tribe is requesting a new MPA with no other take than a tribal take exemption for SYBCI. See response to (a) above.

IV. PETITION EVALUATION

EVALUATION NARRATIVE AND OVERVIEW FOR 2023-19MPA_AM1

SYBCI submitted a petition to establish a new co-managed SMCA named Chitqawi in Estero Bay (near Morro Bay), adjacent to Morro Rock in the Central Coast region. At the April 14, 2026 CFGC Tribal Committee meeting, SYBCI proposed an amendment to the petition. CFGC accepted the amendment at the April 15, 2026 meeting and referred the amended petition to CDFW for evaluation. This is an evaluation of the petition as amended in April 2026 (2023-19MPA_AM1), which proposes to establish a new co-managed SMCA named Chitqawi where no take would be allowed except for a tribal take exemption for SYBCI.

SYBCI requested that the proposed new MPA be added to the MPA Network to ensure 30% of California waters are fully protected by 2030. The petition includes several site-specific ecological objectives for the new MPA such as bolstering ecosystem level protections, enhancing connectivity, increasing protections for nearshore rockfish species, and replication of habitats to provide an “insurance factor” to protect against climate disturbances. The petition also cites co-management as an objective stating that the proposed change would:

“Strengthen the role of the Tribes in co-management and monitoring efforts and marine education activities throughout the marine region... Additional Tribal MPAs should be designed within the existing MPA networks to ensure that Tribal nations are integrated and engaged in marine life protection and education efforts. Additional designation of Tribal MPAs is also warranted given recent California and federal guidelines and initiatives that support Tribal co-management and collaborative natural resource management and planning.”

Based on the evaluation, CDFW finds the proposed new Chitqawi SMCA:

- As proposed, and when assessed against SAT Science Guidelines, would not improve the design and ecological function of the MPA Network as follows:

- The three habitats mentioned in the petition (beach, hard bottom 30-100 m depth, and soft bottom 0-30 m and 30-100 m) are well-represented in this region and spacing between existing replicates of these habitats is within the range recommended by the SAT, and
- Does not meet spacing criteria identified in SAT Science Guidelines. Nearly 27% of all state waters between and including the Piedras Blancas and Point Buchon clusters are protected within MPAs (e.g., between the Piedras Blancas and Point Buchon MPA clusters to the north and south). The proposed new Chitqawi SMCA would be within 27.02 miles of eight MPAs, including being:
 - Bookended by backbone MPAs where the Point Buchon MPA cluster would be 7.37 miles to the south and the Piedras Blancas MPA cluster would be 27.02 miles to the north, and
 - Within 11.77 miles of White Rock and Cambria SMCAs.
- Does not address a current or emerging MPA management challenge that has emerged since the DMR per the SAT Science Guidelines,
- Would be sited in an area that overlaps with a point source discharge of wastewater (Figure 1), including reverse osmosis brine,
- Could result in enforcement challenges and needs alignment with CDFW Feasibility Guidelines given regulatory complexity for the site, and
- Is in close proximity to an active fishing port and would have impacts to recreational and commercial fisheries (see Figures 2-4).

Consistent with directives in the Fish & G. Code and 2016 Master Plan for MPAs (§§2853 and 2855, CDFW 2016), decisions regarding the siting of new MPAs and major modifications of existing MPAs must consider relevant information including, but not limited to, the socioeconomic and environmental impacts of various alternatives. Given the scope and timeline of this analysis, and data availability, CDFW did not have the ability to conduct an analysis of the economic or fiscal impacts for the proposed new MPA (see Question 5 in Attachment 1 for significant information gaps). This information is still outstanding.

As mentioned above, the proposal to advance co-management with SYBCI would advance DMR Recommendations related to tribal coordination with SYBCI. However, consumptive activities within the proposed new MPA would be prohibited for all other federally recognized tribes and non-federally recognized tribes that currently harvest in this area. Other federally recognized tribes with cultural ties to the area that want to maintain access would need to submit a petition to request a future tribal take exemption in the proposed new Chitqawi SMCA, if adopted by CFGC. There is currently no pathway for non-federally recognized tribes to receive an exemption under existing

legislative and regulatory frameworks (current tribal take exemption regulations can be found in Cal. Code Regs. Tit. 14 § 632(a)(11)).

SYBCI has a tribal take exemption in four SMCAs within the MPA Network. These exemptions were initiated after the 2012 North Coast Region MPA rulemaking when CFGC directed staff to inform federally recognized tribes about the pathway for a tribal take exemption. CFGC staff sent a letter to all tribes, notifying them of the new pathway for a tribal take exemption, and inviting them to request tribal take exemptions for any SMCA where they could provide a Factual Record of historic and/or current uses (though SMRs would not be considered). SYBCI submitted a Factual Record and requested tribal take exemptions in four South Coast region SMCAs (Naples SMCA, Kashtayit SMCA, Point Dume SMCA, and Anacapa Island SMCA), which were granted and adopted by the CFGC. For all these reasons, CDFW recommends advancing tribal coordination and co-stewardship with SYBCI in the four existing MPAs where SYBCI has a tribal take exemption, and/or in the proposed Chitqawi area, without establishing a new MPA.

Tribal Co-Management with SYBCI

The petition includes the request to establish a new co-management MPA named Chitqawi where all take would be prohibited except a tribal take exemption for SYBCI. SYBCI's petition highlights the cultural significance of the area and recommends the establishment of:

"an additional California-Chumash co-management SMCA as "Chitqawi" – the northern most coastal Chumash village site of the territory traditionally inhabited by the diverse Chumash peoples...Chitqawi is a coastal village of the Chumash that exists on the northern boundary of the Morro Bay area (although the exact location is unknown). The proposed SMCA is named after the Chumash village."

The proposed location of the new Chitqawi SMCA is in Estero Bay on the Central Coast and in the waters adjacent to modern day Morro Rock. Known as *Lisamu'* by the Chumash⁴, Morro Rock is recognized as a powerful and deeply important, culturally significant place to many tribal peoples (Sage Walker and Cooney 2022). The petition also includes an attachment, *Co-Management of California-Chumash Marine Conservation Areas a White Paper Produced for The Santa Ynez Band of Chumash Indians* (hereafter Attachment 1 of 2023-19MPA_AMI), that identifies opportunities and recommendations to implement co-management of designated California-Chumash marine conservation areas located at Anacapa Island, Naples, Point Dume, and Kashtayit

⁴ <https://chumashsanctuary.org/sacred-sites/>

in Southern California, which are SMCAs where SYBCI currently has tribal take exemptions.

CFGF defines co-management as a collaborative effort established through an agreement in which two or more sovereigns mutually negotiate, define, and allocate amongst themselves the sharing of management functions and responsibilities for a given territory, area, or set of natural resources. Successful co-management typically comprises several components, such as clear governance authority and institutional structure, shared goals and long-term trust building, and integration of multiple worldviews and knowledge systems (Armitage et al. 2009, Berkes 2009, Ban et al. 2018, Warrior et al. 2022). In practice, this involves shared responsibility for management activities, such as monitoring, enforcement, and outreach, established through agreements developed collaboratively with tribes on a direct government-to-government basis (Berkes 2009, Ban et al. 2018, Artelle et al. 2019, Murray 2023).

Depending on the nature of the activities, co-management frameworks may be established through informal partnerships, formal agreements that do not require regulatory changes (e.g., Memorandum of Understanding), or regulatory or legislative changes. During the April 2026 CFGF Tribal Committee meeting, SYBCI clarified that the request for co-management in petition 2023-19MPA_AMI was not a request for a regulatory change and confirmed their desire to continue to work with the state towards co-management in the proposed new Chitqawi SMCA.

Since receiving the petition, CDFW has initiated conversations with SYBCI regarding co-management and values the opportunity to learn more about tribal interests in co-management directly from SYBCI through continued collaboration. As noted in Attachment 1 of 2023-19MPA_AMI, co-management agreements necessitate robust collaboration and partnership-building between the tribe and state and “establishing successful co-management is seldom immediate. Like most participatory processes it takes time and careful attention to partnership building and strategic planning.” Attachment 1 of 2023-19MPA_AMI focuses on how to, “strengthen the opportunities to implement co-management of designated California-Chumash marine conservation areas.” By prioritizing an initial focus on implementation of the recommendations to advance co-management within these existing MPAs, the state and SYBCI can work government-to-government to advance tribal stewardship more immediately.

The effort to advance co-management is aligned with the state’s commitments to strengthening and sustaining effective government-to-government relationships between the state and tribes (Governor Brown’s Executive Order B-10-11, Governor Newsom’s Executive Order N-15-19, the 2020 Ancestral Lands Policy, and the California Natural Resources Agency Tribal Stewardship Policy) and would advance the following

DMR Recommendations: (1) Improve state agencies' tribal engagement and relationship building efforts, (2) Create a clear pathway to tribal MPA management, and (24) Work with CFGC and partners to better incorporate marine cultural heritage into the design of the MPA Network, which may lead to advancements in (3) Building tribal capacity to participate in MPA management activities (CDFW 2022).

The establishment of a new MPA is not a prerequisite for, and does not by itself establish, the shared governance structure that underpins effective co-management. CDFW is committed to continuing to work with the SYBCI towards collaborative, sovereign-to-government co-management agreements within the existing MPA Network and elsewhere along the coast. This recommendation is intended to acknowledge and honor cultural needs by providing adequate time for tribal engagement, building partnerships, and incorporating Traditional Ecological Knowledge into the coordination and mutual understanding of the co-management over ancestral lands and waters.

Cultural Significance of the Area to Other Tribes and State Marine Cultural Preservation Areas

SYBCI is just one of the many tribes who have current and historical ties to the proposed location of the new Chitqawi SMCA. Modern day Morro Rock is recognized as a powerful and deeply important, culturally significant place for other tribes, including the Northern Chumash and Salinan tribes⁵.

The importance of incorporating marine cultural heritage into MPA Network design and management was highlighted in DMR Recommendation 24, reflecting the recognition that the cultural significance of the coast could be better represented in the MPA Network. Similarly, California State Parks seeks to preserve examples of the state's diverse cultural heritage, particularly along underrepresented themes such as settlement and subsistence patterns associated with coastal prehistoric villages and tribal maritime exploration⁶.

Given the petition's emphasis on cultural recognition and preservation of the waters around Morro Rock, an alternative designation that may warrant consideration is a State Marine Cultural Preservation Area (SMCPA). An SMCPA is one of the 6 marine managed areas defined and established in the Marine Managed Areas Improvement Act (MMAIA, Pub. Resources Code § 36600-36900). SMCPAs prohibit the damage, take, or possession of cultural resources, and these protections apply to the cultural resources of any tribe, regardless of federal recognition status. SMCPA designation does not restrict

⁵ <https://www.kqed.org/news/11940494/a-step-towards-healing-chumash-members-reunite-sacred-rock>

⁶ [Significant Cultural Resource Properties](#)

consumptive uses, so it could be a more inclusive approach to highlight the cultural importance of this area while maintaining existing fishing access and recreational opportunities.

SMCPAs are designated by the California State Parks and Recreation Commission and managed by California State Parks or jointly managed with CDFW if there is overlap with an MPA. This designation may provide an effective mechanism for recognizing and preserving the cultural significance of the area without prohibiting take by other tribes.

In contrast, establishing a new MPA to allow exclusive take allowances by SYBCI would restrict access to the area for cultural take practices for tribes other than the SYBCI s. While other federally recognized tribes with cultural ties to the area could request a future tribal take exemption in the proposed new Chitqawi SMCA if adopted by CFGC (current tribal take exemption regulations can be found in Cal. Code Regs. Tit. 14 § 632(a)(11)), non-federally recognized tribes are unable to receive a tribal take exemption under the existing legislative and regulatory frameworks. Consequently, designating a new MPA in the waters adjacent to Morro Rock could create differential access among tribal communities. Designation of an SMCPA, on the other hand, could recognize and protect the cultural significance of the area, support continued exploration of co-management opportunities, maintain fishing access for existing users, and contribute to MPA Network achievement of MLPA Goals 3-6. This recommendation is also due to the lack of anticipated benefits to the MPA Network design and other considerations in the evaluation framework described below.

Local Ecological Significance, Habitat Replication, and Climate Change

In addition to acknowledging the cultural significance of the area to the Chumash peoples, SYBCI stated several ecologically focused goals for the new Chitqawi SMCA that aim to:

- *“Protect natural trophic structure and food webs, including forage species such as juvenile rockfish, squid, and coastal pelagic finfish that serve as prey for other fish, marine birds, and marine mammals,*
- *Protect larval sources and enhance reproductive capacity of nearshore fish and invertebrate species,*
- *Provide protection to nearshore shelf rockfish species,*
- *Replicate within a state marine reserve the range of shallow habitats found at Cambria and White Rock SMCAs, and*
- *Include and replicate sandy beaches, shallow hard and soft bottom habitat.”*

The petition further states that the new MPA should be added to the MPA Network and designed in such a way with the above stated goals “to ensure the designed benefits [act as] an insurance factor is needed to protect marine life and habitat from the synergistic impacts of anthropogenic disturbance events,” and that the “[CFGF] should consider adding other MPAs to the existing network given evidence of climate disturbance on marine life.”

While there are promising results in the scientific literature that MPAs may act as climate refugia for certain species and ecosystems and/or promote recovery following a climate-driven disturbance (Micheli et al. 2012, Carr et al. 2017, Roberts et al. 2017, Bates et al. 2019, CDFW 2022, Jacquemont et al. 2022, Raimondi and Smith 2022, Ziegler et al. 2023, Benedetti-Cecchi et al. 2024, Kumagai et al. 2024, Olguín-Jacobson et al. 2025, Ortiz-Villa et al. 2025), the current state of knowledge indicates that MPAs do not consistently or predictably confer resilience to climate change (Coleman et al. 2017, Bruno et al. 2018, Freedman et al. 2020, Kyprioti et al. 2021, Smith et al. 2023, Filbee-Dexter et al. 2024, Ortiz-Villa et al. 2025). The DMR results showed that habitats and species both inside and outside MPAs experienced dramatic changes following the 2014-2016 marine heatwave. However, some habitats, such as rocky intertidal and kelp forests, were more stable and showed some resiliency to the effects of the heatwave, and that some of this stability could be attributed to higher connectivity (CDFW 2022, Carr et al. 2022, Raimondi and Smith 2022). Yet these results were variable across time and space, and highly dependent on bioregion and shifts in oceanographic conditions pre- and post-heatwave (CDFW 2022, Carr et al. 2022, Caselle et al. 2023, Hamilton et al. 2023). Positive species and community level responses following the heatwave were most pronounced on the Central Coast, where the proposed new MPA would be located, which suggests that the regional MPA Network in this area is likely already providing some level of resiliency to climate change disturbances. Although climate change was not explicitly considered during the MPA Initiative planning process, California’s MPA Network was designed with resilience-oriented principles in mind (Hofmann et al. 2021). Adding an additional MPA in this area is not likely to further promote climate resiliency beyond what the current MPA Network is already providing (see Companion Document, Attachment 1 for more information on Climate Resiliency and MPAs). Further exploration of climate change resiliency and the role of MPA design will be guided by the DMR Recommendations focused on MPA Network performance (CDFW 2022) and the recommendations put forth in the “Climate Resilience and California’s Marine Protected Area Network” report (Hofmann et al. 2021).

For an MPA to contribute to ecological goals related to habitat replication and representation, the SAT Science Guidelines require that an MPA meet certain criteria for protection (Level of Protection (LOP) of Moderate-high, High, or Very High) and size (minimum area of 9 square miles). The proposed new Chitqawi SMCA is 8.45 square

miles and would need to be increased to meet the minimum size criterion for connectivity and habitat replication goals. If it did meet the size threshold, it would add habitat replicates (beach and soft bottom 0–30 m and 30–100 m⁷) that are well-represented in this region. Additionally, all spacing between existing habitat replicates is within the range recommended by the SAT. Though identifying MPA Network design deficiencies was not a specific objective of the DMR, results of the assessment of MPA Network performance relative to MPA design attributes did not indicate the MPA Network was failing to meet ecological objectives (e.g., MPA placement and spacing appears to be promoting ecosystem connectivity). The DMR indicated that with continued long-term monitoring over the next 10-year period, we anticipate being able to conduct additional analyses related to performance and influencing factors, including MPA design attributes.

Approximately 27% of all state waters between and including the Piedras Blancas and Point Buchon clusters are protected within MPAs (e.g., between the Piedras Blancas and Point Buchon MPA clusters to the north and south). The proposed new Chitqawi SMCA would be within 27.02 miles of eight MPAs. This includes being sited directly adjacent to the Morro Bay SMRMA and the Morro Bay SMR and within 11.77 miles of White Rock and Cambria SMCAs. Additionally, the proposed new Chitqawi SMCA would be situated between two “backbone” MPA clusters in the MPA Network, which serve as connection points in the MPA Network. Backbone MPAs are those that meet LOP, size, and spacing thresholds sufficient to qualify as replicating key habitat at an ecologically meaningful scale, either as a single MPA or as a purposefully designed MPA cluster. The existing Point Buchon SMR and SMCA cluster is 7.37 miles to the south of the proposed new MPA, while the Piedras Blancas SMR and SMCA cluster is 27.02 miles to the north. These two backbone clusters are 32.97 miles from each other, well within the MPA spacing guidelines established by the SAT (maximum distance of 31–62 miles apart; see Question 9 of Attachment 1 for the SAT Science Guidelines and additional context).

SYBCI’s petition states that the addition of a new MPA in the Central Coast region should aim to protect important nearshore species at various life stages and ecological functions such as preserving the natural trophic structure and food webs. There is some evidence that MPAs can preserve or rebuild functioning food webs by protecting top predators that are often targeted by fisheries and/or enhance or sustain trophic species interactions (Micheli et al. 2005, Villamoor and Becerro 2012, Gilby and Stevens 2014, Soler et al. 2015, Eger and Baum 2020, Eisaguirre et al. 2020, Kumagai et al. 2024). The

⁷ Hard bottom 30–100 m depth meets minimum area used in other study regions but does not meet minimum percentage used in Central Coast Study Region.

abundance of juvenile rockfish (*Sebastes* spp.) and coastal pelagic species⁸ that may support foraging marine birds and mammals can be highly dynamic depending on oceanographic conditions that function on much larger scales than the proposed size of the MPA (Field and Ralston 2005, Laidig et al. 2007, Wilson et al. 2008, Ruzicka et al. 2012, Markel et al. 2017).

Another stated goal of the proposed new Chitqawi SMCA is to provide protections for nearshore rockfish and benthic invertebrates, in turn enhancing their reproductive capacity. The proposed new Chitqawi SMCA would need to increase in size to meet the minimum size criteria, but it could provide some local protection for nearshore rockfish species that have smaller home ranges, as well as sessile invertebrates such as mussels (*Mytilus* spp.) that are fixed to the substrate. Tag and recapture studies of several species of nearshore rockfish that occur in the waters of the proposed MPA exhibit high site fidelity, with some animals moving just meters annually (Hannah and Rankin 2011, Hanan and Curry 2012, Mireles et al. 2012, Green et al. 2014). Other research suggests that MPAs effectively protect larger, older, more fecund fish that produce higher quality offspring (Hixon et al. 2014, Fidler et al. 2018, Marshall et al. 2019). Smaller MPAs, like the proposed Chitqawi SMCA, could provide some protection for the adult fish of these species and may confer some localized benefits to the population at a site-specific level (Lester et al. 2009, Hannah and Rankin 2011, Mireles et al. 2011, Saarman et al. 2013). However, MPA size has shown to be a main factor driving positive response ratios of nearshore rockfish inside MPAs (Friedlander et al. 2017), especially when examined in the context of an MPA Network (Ziegler et al. 2022, Caselle et al. 2023).

Given all these considerations, the proposed new Chitqawi SMCA may offer local protection for some nearshore rockfish species and sessile invertebrates. However, the proposed new Chitqawi SMCA is unlikely to meaningfully enhance ecosystem function or connectivity within the MPA Network when measured against SAT Science Guidelines. Additionally, key habitats in this region are well-represented. This is because the eight existing MPAs in the area already collectively provide these ecosystem and connectivity benefits, with nearly 27% of all state waters between and including the Piedras Blancas and Point Buchon clusters are protected within MPAs (e.g., between the Piedras Blancas and Point Buchon MPA clusters to the north and south).

Point Source Discharges and Water Quality

Fish & G. Code section 2855 requires consideration of “practical information on the marine environment and the relevant history of fishing and other resources use, areas

⁸ Pacific sardine (*Sardinops sagax*), Pacific mackerel (*Scomber japonicas*), jack mackerel (*Trachurus symmetricus*), northern anchovy (*Engraulis mordax*), and market squid (*Doryteuthis opalescens*).

where fishing is currently prohibited, and water pollution in the state's coastal waters" when making decisions regarding the siting of new MPAs and major modifications of existing MPAs. In general, MPAs should be sited considering information related to water pollution in the state's coastal waters (Fish & G. Code § 2855(c)), and "to the extent practicable, to ensure that activities that upset the natural ecological functions of the area are avoided (Fish & G. Code § 2857(c))," this includes avoiding overlap with point source discharges such as wastewater treatment plant, water reclamation facility, and brackish or seawater desalination discharges.

There is an existing outfall that would discharge into the proposed new MPA (Figure 1). The City of Morro Bay operates the Morro Bay Water Reclamation Facility that is permitted to discharge blended primary and tertiary treated municipal wastewater, saline waste, and reverse osmosis concentrate from a brackish reverse osmosis facility; and reverse osmosis concentrate from indirect potable reuse from the facility's outfall located at 35°23'11"N 120°52'29" W (California Regional Water Quality Control Board Central Coast Region ORDER NO. R3-2022-0029 NPDES NO. CA3000002). The facility is authorized to discharge an average annual effluent flow of up to 0.97 million gallons per day and the maximum daily effluent flow from the facility cannot exceed 2.74 million gallons per day. This facility intermittently commingles their wastewater discharge with reverse osmosis brine from a brackish desalination facility before discharging it into Estero Bay. This facility would discharge wastewater directly into the proposed new Chitqawi SMCA.

There are two other permitted point source discharges into Estero Bay that are just to the north of the proposed new Chitqawi SMCA (Figure 1). This includes the outfall for the recently constructed Cayucos Sanitary District Water Resource Recovery Facility, which is approximately 0.7 miles north of the proposed MPA. This facility is permitted to discharge an average annual effluent flow of up to 0.34 million gallons per day of secondary treated municipal wastewater from the facility's outfall located at 35°24'44.10"N 120°53'10.02"W (California Regional Water Quality Control Board Central Coast Region ORDER NO. R3-2020-0004 NPDES NO. CA3000001). The Chevron Estero Marine Terminal also holds a permit to discharge into Estero Bay approximately one third of a mile north of the proposed Chitqawi SMCA, although the facility is not actively discharging (35°24'25"N 120°53'05"W; California Regional Water Quality Control Board Central Coast Region ORDER NO. R3-2017-0049 NPDES NO. CA0001465) (Figure 1). These are both relatively small facilities, and they would not discharge directly into the proposed new SMCA, however, they are mentioned because of their proximity to the proposed new MPA and because the petition states, "the SYBCI is proposing a general location; the specific location is identified below but the Tribe is willing to collaborate with State partners to consider this proposed SMCA in more detail."

Although all of the permitted facilities are required to meet water quality standards (and have many other requirements) in their National Pollutant Discharge Elimination System permits, due to potential water quality concerns, it is not recommended to site a new proposed MPA over existing point source discharges or where there would be overlap with the zone of initial dilution or brine mixing zone. The State Water Resources Control Board's Water Quality Control Plan for Ocean Waters includes provisions that may limit the ability to require modified limitations, substantive conditions or prohibitions on existing municipal point source wastewater discharge outfalls and also prohibit requiring a facility to move their outfall following designation of an SMCA (Chapter III.E. California Ocean Plan, SWRCB 2019)

Impacts on Existing Regulations, Permits, Leases and Management Activities of Other Agencies

The proposed new MPA is adjacent to Morro Strand State Beach, which is managed by California State Parks, which is designated as a State Recreation Unit under Cal. Code Regs. Tit. 14 section 4753. The proposed MPA's regulations would require resolution of conflicts with this State Park Unit's current rules and recreational mandate, in which State beaches are defined as "consisting of areas with frontage on the ocean, or bays designed to provide swimming boating, fishing, and other beach-oriented recreational activities" (Pub. Resources Code § 5019.56). According to the 'California State Parks Guidelines for Creating Marine Managed Areas' (CDPR 2010),

"When an MPA is proposed offshore of an existing terrestrial California Park System unit, the terrestrial park's general plan and existing public use patterns should be a guiding element for the designation and shoreline boundaries of the MPA."

The General Plan for Morro Strand State Beach⁹ discusses the recreation resources available, stating,

"Principal recreation activities in this unit include picnicking, wading, surfing, beachcombing, surf fishing, and nature study."

Fishing remains an existing allowed activity at Morro Strand State Beach. The General Plan for Morro Strand State Beach identifies a number of constraints related to access (e.g., rough surf and cold ocean temperatures) and any additional limitations to recreational fishing would need to be considered in consultation with CDPR. The

⁹ [General Plans and Management Plans](#)

proposed change would also require CDFW and CDPR to coordinate on enforcement, updates to signage, and outreach efforts.

There is also jurisdictional overlap with sovereign tidelands and submerged lands that were granted to the City of Morro Bay in 1964. Additional coordination with the State and Regional Water Boards, California State Parks, and the City of Morro Bay would be needed prior to considering a new MPA at this location.

Impacts on Fisheries and Socioeconomic Impacts

The proposed Chitqawi SMCA is directly adjacent to the Morro Bay Harbor and within CDFW commercial fishing block 607. The 8.45 square mile area of the proposed MPA would occupy 13.8% of the block. Block 607 is an economically productive, high value fishing block supporting several important commercial fisheries such as nearshore groundfish¹⁰, market squid (*Doryteuthis opalescens*), and salmon (*Oncorhynchus spp.*). Since implementation of the statewide MPA Network, between 2013 and 2025, the nearshore groundfish landed in block 607 was worth over \$1.4 million, approximately 10% of the value of all nearshore groundfish caught in the Morro Bay area in that period (Figure 2). The value of market squid landed in block 607 in that same period was over \$1.3 million and made up a larger portion of the total value of that catch landed in Morro Bay, approximately 28.9% (Figure 3). Ocean salmon landed from this block in that time frame was \$704,262, with approximately 17% of the total value of that catch landed in Morro Bay (Figure 4). These fishery landings, along with others from fishing block 607, contributed more than \$3.58 million to the local community in the years following MPA implementation (see response to Question 15; for more details on all fishery value data, see CDFW's [Marine Fisheries Data Explorer](#)).

The proposed location for Chitqawi SMCA is just outside the entrance to the Morro Bay Harbor. Closing this area may require some commercial fishery participants to travel further to access fishing grounds, increasing the fuel and time required to land equivalent catch, which could reduce net value of any landings. There are also several

¹⁰ For a list of all nearshore groundfish, see the California Nearshore Fishery Management Plan (CDFW 2002). Representative nearshore groundfish from the surrounding area of the proposed new MPA include cabezon, *Scorpaenichthys marmoratus*; California scorpionfish, *Scorpaena guttata*; California sheephead, *Bodianus pulcher*; black rockfish, *Sebastes melanops*; black-and-yellow rockfish, *S. chrysomelas*; blue rockfish, *S. mystinus*; brown rockfish, *S. auriculatus*; calico rockfish, *S. dalli*; China rockfish, *S. nebulosus*; copper rockfish, *S. caurinus*; gopher rockfish, *S. carnatus*; grass rockfish, *S. rastrelliger*; kelp rockfish, *S. atrovirens*; olive rockfish, *S. serranoides*; quillback rockfish, *S. maliger*; treefish, *S. serriceps*; kelp greenling, *Hexagrammos decagrammus*; rock greenling, *H. lagocephalus*; and monkeyface prickleback, *Cebidichthys violaceus*.

Commercial Passenger Fishing Vessels (CPFVs)¹¹ operating out of Morro Bay Harbor. This proposed change would also restrict operations within a productive fishing block close to the harbor.

In addition to supporting several commercial fisheries on the Central Coast, Estero Bay and other areas around Morro Bay, especially the area around Morro Rock, are popular for recreational fishing for both local community members and visitors alike. The jetties that mark the entrance to Morro Bay Harbor are frequented by recreational hook-and-line anglers, especially because a fishing license is not needed to fish from the jetty specifically. Morro Rock Beach and Morro Strand State Beach to the north of the rock would also fall within the proposed Chitqawi SMCA. These areas are also popular sites for recreational hook-and-line fishing, recreational crabbing, and clamming. Closing these areas to fishing may impact access to free fishing opportunities.

The area also provides many opportunities for human connection with the ocean through non-consumptive activities such as swimming, surfing, beach combing, and wildlife viewing. Understanding how people interact with and derive benefits from the ocean and how these benefits may be affected by MPAs is challenging (Hall-Arber et al. 2021, CDFW 2022, Travis et al. 2026). Social science research within the MPA Monitoring Program is a rapidly expanding field of MPA research, as well as a priority DMR Recommendation to invest in improving understanding of the human dimensions of MPAs and develop a human dimensions working group and research agenda (DMR Recommendation 12). The MLPA and Master Plan (CDFW 2016) require consideration of socioeconomic impacts and the relevant history of fishing and other resources use in an area (Fish & G. Code § 2855(c)) when making decisions about major structural modifications to the MPA Network, including the addition of new MPAs. The addition of a new MPA in this area would likely result in socioeconomic impacts to fisheries and the surrounding communities, although the nature and extent of these impacts is unknown (see Question 5 in Attachment 1 for significant information gaps).

Enforcement

The proposed new MPA as designed would not align with the following Feasibility Guidelines: proposed boundaries are not all described using readily determined lines of latitude and longitude, they do not align with easily recognizable permanent landmarks or with the boundaries of the neighboring Morro Bay SMRMA, which could cause confusion for vessels exiting the SMRMA and Morro Bay Harbor, and the offshore boundary does not extend to the 3 nautical mile limit of state waters. Establishing a new

¹¹ The Commercial Passenger Fishing Vessel (CPFV) Fleet takes paying passengers to recreationally fish at offshore coastal locations.

MPA at this site would also add to regulatory complexity in the area, as there are two other MPAs within Morro Bay right on the other side of the jetty from the proposed site: Morro Bay SMRMA and the Morro Bay SMR, both of which would have different regulations than the proposed Chitqawi SMCA.

The proposed new MPA would not align with the Feasibility Guidelines recommendation that MPA designs should be simple and clear and avoid creating unnecessarily complex arrangements. The location of the proposed new MPA is adjacent to the Morro Bay SMRMA, which allows recreational take of finfish on the Morro Bay north jetty that would be positioned between the two MPAs. This would make it such that fishing could occur on one side of the Morro Bay north jetty but not the other. Furthermore, the proposed boundaries of the new MPA fall just outside the mouth of the busy port of Morro Bay Harbor. The subsequent vessel traffic exiting the harbor and transiting from the Morro Bay SMRMA into the proposed MPA would increase compliance issues. Each of these diversions from the Feasibility Guidelines creates enforcement challenges as they increase the likelihood of public confusion, unintentional infractions, and instances of non-compliance. With any new MPA regulation, there is an anticipated period of non-compliance. However, given the regulatory complexity and proximity to a busy port that supports various commercial and recreational fisheries, it is anticipated there would need to be significant investments in clearly understandable signage and outreach on an ongoing basis.

Conclusion

CDFW is committed to furthering co-stewardship and is interested in continuing to engage with SYBCI on co-management within the existing MPA Network or in this area. However, there are faster and less burdensome pathways to achieve co-management. The proposed new Chitqawi SMCA could complicate existing ceremonial and subsistence harvest opportunities for other tribes, some with significant cultural ties to Morro Rock and the surrounding area.

When measured against the SAT Science Guidelines, the proposed new Chitqawi SMCA would not provide added ecological benefits to the MPA Network beyond what exists in the eight neighboring MPAs. There are also MPA siting and water quality challenges, enforceability of the design and location due to regulatory complexity, and impacts to recreational and commercial fisheries (see Figures 2-4).

CDFW recommends a non-regulatory pathway to expedite co-management and is committed to continuing to pursue co-management with SYBCI. In conjunction with this, and as a potential pathway to recognize the cultural significance of the location, and to better incorporate marine cultural heritage into the design of the MPA Network (DMR

Recommendation 24), there may be interest in exploring an SMCPA designation with CDFW, California State Parks, and California State Parks and Recreation Commission (Marine Managed Areas Improvement Act, Pub. Resources Code § 36600-36900). Designating this area as an SMCPA would prohibit the damage, take, or possession of any cultural resources, acknowledge the cultural significance of the area, while also preserving any historic objects in the area, for example, artifacts from submerged village sites. SMCPAs are designated by the California State Parks and Recreation Commission and managed by California State Parks or jointly managed with CDFW if there is overlap with an MPA. This designation would recognize the cultural importance of the area and would avoid potential limitations on fishing access or take associated with ceremony and cultural practices for tribes other than SYBCI.

RECOMMENDATION FOR 2023-19MPA_AM1

Given these considerations, and the information in the evaluation below, for petition **2023-19MPA_AM1**:

- **CDFW Supports with an Alternative Pathway the non-regulatory request to advance co-management and is committed to continuing to pursue co-management with SYBCI.** At the April 2026 CFGC Tribal Committee meeting, SYBCI confirmed the tribe's intent to pursue co-management with CDFW in the MPA Network through non-regulatory means. CDFW may enter into tribal co-management agreements with tribes at any time and these do not require action from CFGC or consideration through CFGC's petition process or rulemaking. This non-regulatory request was not evaluated further.
- **Regarding the regulatory request in 2023-19MPA_AM1 to establish a new SMCA in Estero Bay named Chitqawi with no take other than a tribal take exemption for SYBCI, CDFW recommends, CFGC Support with an Alternative Pathway and request CDFW engage with the SYCBI, other interested tribes, and California State Parks to explore designating the area as a State Marine Cultural Preservation Area (SMCPA) to acknowledge the cultural significance of the area, rather than CFGC establishing a new SMCA.**

EVALUATION QUESTIONS

2023-19MPA_AMI: Designate a new SMCA in Estero Bay named Chitqawi SMCA with no take other than a tribal take exemption for the Santa Ynez Band of Chumash Indians.

QUESTION 1: DOES THE PROPOSED CHANGE SUPPORT THE MPA NETWORK IN MEETING ONE OR MORE OF THE MLPA GOALS AND ALIGN WITH MPA MASTER PLAN ADAPTIVE MANAGEMENT OBJECTIVES?

No. The MLPA Goals and Master Plan objectives are inextricably linked and act as the foundational tools that CDFW utilizes for effective adaptive management of the MPA Network. Individual MPAs in the MPA Network were not necessarily designed to address all six Goals of the MLPA but instead act as an important component of a functioning MPA Network that was designed to holistically address the MLPA Goals as a whole. As such, CDFW has evaluated this action within the broader adaptive management framework and how the proposed action may or may not align with the MLPA Goals/Master Plan objectives and advance MPA Network management. See Question 1 of Attachment 1 for the MLPA Goals and Master Plan Objectives.

The tribe has proposed a new SMCA in Estero Bay (near Morro Bay) with a tribal take exemption for SYBCI. SYBCI describes objectives for the proposed MPA that would align with MLPA Goals 1, 2, 3, and 4, related to preserving natural diversity, protecting marine populations and habitats, and improving recreational activities. Although the request for co-management aligns with Master Plan objectives and the proposed new MPA has potential to meet MLPA Goals 1 and 2, it is unlikely that the new Chitqawi SMCA as proposed would meet Goals 3 and 4, and is inconsistent with Goal 6, related to MPA design and management as an MPA Network.

SYBCI's proposal aims to enhance MPA Network design by replicating various nearshore habitats, such as sandy beaches and shallow (0-30 m depth) hard and soft bottom habitat (Goal 4). Though the proposed MPA would indeed encompass unique marine life and habitats, the MPA as proposed at 8.45 square miles (Table 1) would not meet the size requirements (at least 9 square miles) to contribute to replication goals for these habitats (see response to Question 9 for the SAT Science Guidelines and additional context). Additionally, although identifying MPA Network design deficiencies was not a specific objective of the DMR, results of the assessment of MPA Network performance relative to MPA design attributes did not indicate the MPA Network was failing to meet ecological objectives (e.g., MPA placement and spacing appears to be promoting ecosystem connectivity). The DMR indicated that with continued long-term monitoring over the next 10-year period, we anticipate being able to conduct additional

analyses related to performance and influencing factors, including MPA design attributes.

The proposed new Chitqawi SMCA would have a southern portion just outside Morro Bay Harbor and would overlap with state parks (e.g. Morro Strand State Beach) and beaches that receive high levels of visitation for a wide range of consumptive and non-consumptive activities (MPA Watch data reports for San Luis Obispo County, California State Parks System Statistical Reports). Given the popularity of the area surrounding Morro Rock, it is unclear how establishing an MPA that removes existing recreational consumptive opportunities without adhering to SAT Science Guidelines would improve public enjoyment (Goal 3).

Lastly, the MLPA Initiative planning process set a clear precedent for creating and managing California's MPAs as a cohesive MPA Network through a long-term, robust, science-based, stakeholder-driven process (Goal 6). This includes ensuring that all MPAs are designed and managed as a single, interconnected component of a statewide MPA Network. As designed, the proposed new Chitqawi SMCA would offer minimal local ecological protections and is too small to add habitat replicates or serve as a connection point in the broader MPA Network.

QUESTION 2A: DOES THE PROPOSED CHANGE ADVANCE ADAPTIVE MANAGEMENT RECOMMENDATIONS IN THE DECADEAL MANAGEMENT REVIEW?

Yes. The establishment of the MPA alone does not advance DMR Recommendations. However, the additional request to co-manage the area with SYBCI is a pathway to advance prioritized adaptive management Recommendations from the DMR (CDFW 2022): (1) Improve state agencies' tribal engagement and relationship building efforts, (2) Create a clear pathway to tribal MPA management, and (24) Work with CFGC and partners to better incorporate marine cultural heritage into the design of the MPA Network, which may lead to advancements for Recommendation (3) Building tribal capacity to participate in MPA management activities. However, the Chitqawi SMCA as proposed would limit any other tribes' ability to continue subsistence and cultural harvest practices. Designating the area as a SMCPA is an alternative pathway that could be explored to acknowledge the cultural significance of the area without limiting subsistence practices. Additionally, CDFW could work with SYBCI to advance these DMR Recommendations within the existing MPA Network or areas outside the MPA Network, including developing a co-management agreement for this area. See Question 2a of Attachment 1 for the DMR and DMR Recommendations.

QUESTION 2B: IF NOT, DOES THE PROPOSED CHANGE ADDRESS A CURRENT OR EMERGING MPA MANAGEMENT CHALLENGE?

Not applicable, as the proposed change advances adaptive management recommendations.

QUESTION 3: DOES THE PROPOSED CHANGE HAVE THE POTENTIAL TO AFFECT EXISTING CFGC NON-MPA REGULATIONS, PERMITS, OR LEASES (E.G., KELP LEASES, AQUACULTURE LEASES, EXPERIMENTAL FISHING PERMITS)?

Yes. The proposed expansion overlaps with Administrative Kelp Bed 206, which is closed, and Kelp Bed 207, which is leasable. Closed kelp beds are closed to all commercial kelp harvesting. Commercial kelp can be harvested within leasable kelp beds until a lease is obtained for the bed, at which time the bed can only be harvested by the lease holder.

The proposed change also has the potential to impact three existing Experimental Fishing Permits (EFPs):

- EFPT2-002 - Dungeness crab (*Metacarcinus magister*), rock crab (*Cancer productus*, *Metacarcinus anthonyi*, and *Romaleon antennarium*), and spot prawn (*Pandalus platyceros*).
- EFPT2-004 - Dungeness crab (primary) and rock crab (secondary).
- EFPT4-001- Brown box crab (*Lopholithodes foraminatus*) and king crab (California king crab- *Paralithodes californiensis*, spiny king crab- *Paralithodes rathbuni*, scarlet king crab - *Lithodes couesi*).

QUESTION 4: DOES THE PROPOSED CHANGE HAVE THE POTENTIAL TO AFFECT EXISTING REGULATIONS, PERMITS, LEASES, OR MANAGEMENT ACTIVITIES OF ANY OTHER AGENCY OR ENTITY?

Yes. The proposed new Chitqawi SMCA would overlap with granted lands held by the City of Morro Bay. Sovereign tidelands and submerged lands were first granted to San Luis Obispo County in 1947 to operate a harbor and to maintain associated facilities needed for commerce and navigation. The grant was amended in 1960 to add purposes related to recreational use, such as a playground, public park, and parking. The title was transferred to the City of Morro Bay in 1964. It is unclear whether and to what degree the proposed change would affect the City's management activities.

The proposed new MPA is adjacent to Morro Strand State Beach, which is managed by CDPR. The proposed new MPA would require resolution of conflicts with allowed activities within this State Beach, which is designated as a State Recreation Unit under Cal. Code Regs. Tit. 14 section 4753. The proposed MPA's regulations would require resolution of conflicts with this State Park Unit's rules and recreational mandate, in which State

Beaches are defined as “consisting of areas with frontage on the ocean, or bays designed to provide swimming boating, fishing, and other beach-oriented recreational activities.” (Pub. Resources Code § 5019.56). According to ‘California State Parks Guidelines for Creating Marine Managed Areas’ (CDPR 2010),

“When an MPA is proposed offshore of an existing terrestrial California Park System unit, the terrestrial park’s general plan and existing public use patterns should be a guiding element for the designation and shoreline boundaries of the MPA.”

The General Plan¹² for Morro Strand State Beach discusses the recreation resources available, stating,

“Principal recreation activities in this unit include picnicking, wading, surfing, beachcombing, surf fishing, and nature study.”

Fishing remains an existing allowed activity at Morro Strand State Beach¹³. It is unclear exactly how the proposed change would affect the management activities of CDPR. Any limitations to recreational fishing would need to be considered in consultation with CDPR. The proposed change would also require CDFW and CDPR to coordinate on enforcement, updates to signage, and outreach efforts.

There is an existing outfall that would discharge into the proposed new MPA (Figure 1). The City of Morro Bay operates the Morro Bay Water Reclamation Facility that is permitted to discharge blended primary and tertiary treated municipal wastewater, saline waste, and reverse osmosis concentrate from a brackish reverse osmosis facility, and reverse osmosis concentrate from indirect potable reuse from the facility’s outfall. There are two other permitted point source discharges into Estero Bay that are just to the north of the proposed new Chitqawi SMCA. Given these existing discharges/activities, the proposed new MPA has the potential to interact with the regulations and permitting activities of the State and Regional Water Boards related to point source (e.g., wastewater treatment facilities) and non-point source discharges (e.g., stormwater runoff).

The proposed new MPA has the potential to interact with the regulations and permitting activities of the State and Regional Water Resources Control Boards related to point source (e.g., wastewater treatment facilities) and non-point source discharges (e.g., stormwater runoff). The State Water Resources Control Board can designate State Water Quality Protection Areas (SWQPAs) to prevent the undesirable alteration of natural

¹² [General Plans and Management Plans](#)

¹³ [Morro Strand State Beach](#)

water quality within MPAs. The State Water Resources Control Board's Water Quality Control Plan for Ocean Waters of California (California Ocean Plan) was amended in 2012 to include the process for designating SWQPA's and Implementation Provisions for Marine Managed Areas (Chapter III.E., State Water Board 2019). This was done with the intention to align these SWQPA's with the MPA Network. The provisions are implemented by the Regional Water Resources Control Boards, including through Waste Discharge Requirements, National Pollutant Discharge Elimination System permits, and municipal separate storm sewer system permits. If the State Water Resources Control Board designates the new MPA as part of the existing SWQPA's, this would have implications on the State Water Resources Control Boards' workload and for permittees that would need to come into compliance with new permit requirements. The scope and magnitude of the State Water Resources Control Boards' workload and the cost of compliance for permittees is unknown.

The Atascadero Artificial Reef (CDFW 1989, 2001), constructed in 1985, lies within the boundaries of the proposed new MPA. Its purpose is to enhance sportfishing by increasing fish production in the area and promoting kelp growth. The proposed new Chitqawi SMCA would prohibit sportfishing in the area, which would contrast with the local goal of installing the artificial reef to enhance sportfishing in the area. However, the status of the reef and current level of fishing at the site is unknown. It is unclear whether the proposed change would affect the management of the [Atascadero Artificial Reef](#).

Future offshore wind energy development may occur in federal waters near the location of the proposed MPA. Associated infrastructure such as underwater cables may overlap with the proposed location of the MPA, although the status of offshore wind projects moving forward is unknown.

This list may not be exhaustive. The proposed change may have the potential to affect existing regulations, permits, leases, or management activities of Tribal governments, other agencies, and entities not identified here.

QUESTION 5: ARE THERE SIGNIFICANT INFORMATION GAPS THAT NEED TO BE FILLED TO INFORM THE EVALUATION OF THE PROPOSED CHANGE?

Yes. When evaluating this petition, CDFW reviewed the information in the petition, as well as information including, but not limited to:

- MLPA planning documents and related information (e.g., MLPA Goals and MPA Master Plan adaptive management objectives),
- Current research on MPA Network connectivity and climate resilience,
- Commercial and recreational fishing data, such as that available through the [Marine Fisheries Data Explorer](#) tool,

CDFW EVALUATION 2023-19MPA_AMI Cohen

- California State Water Resources Control Board's California Ocean Plan and Regional Water Quality Control Board Central Coast Region permitting information, and
- California State Parks Guidelines for Creating Marine Managed Areas (CDPR 2010) and the CDPR Approved General Plan for Morro Strand State Beach¹⁴.

CDFW has identified information gaps that limit the ability to fully evaluate the proposed change, primarily:

- Confirmation from CFGC that the original Factual Record(s) of Current and Historical Uses previously submitted by SYBCI to CFGC for Naples SMCA, Kashtayit SMCA, Point Dume SMCA, and Anacapa Island SMCA include(s) the area contained within the proposed Chitqawi SMCA, consistent with historic practices for tribal take exemptions,
- Consideration of potential socioeconomic impacts on the local economy including commercial and recreational fisheries and the near-by Morro Bay Harbor, and
- Tribal concerns and interests of all affected tribes related to the establishment of a new MPA at this location.

Additionally, there are information gaps related to assessing issues regarding equity and access for traditionally underserved communities with the existing MPA Network as well as the proposed changes in the 2023 MPA petitions. See the response to Question 14 below and Question 5 in Attachment 1 for more information.

Another information gap primarily includes inconsistent evidence that MPAs may act as a climate refugia for certain species and ecosystems. While there is promising research showing that MPAs, including some within the existing MPA Network, may confer some resilience to climate disturbances (Micheli et al. 2012, Carr et al. 2017, Roberts et al. 2017, Bates et al. 2019, CDFW 2022, Jacquemont et al. 2022, Raimondi and Smith 2022, Ziegler et al. 2023, Benedetti-Cecchi et al. 2024, Kumagai et al. 2024, Olguín-Jacobson et al. 2025, Ortiz-Villa et al. 2025), these benefits are not predictably consistent (Coleman et al. 2017, Bruno et al. 2018, Freedman et al. 2020, Kyprioti et al. 2021, Smith et al. 2023, Filbee-Dexter et al. 2024, Ortiz-Villa et al. 2025). Although additional research on these topics could inform long-term adaptive management of the MPA Network, the recommendation to deny this petition does not depend on resolving these uncertainties.

Although climate change was not explicitly considered during the MLPA Initiative planning process, the MPA Network was designed with resilience-oriented principles in

¹⁴ [General Plans and Management Plans](#)

mind with the aim of safeguarding the state's marine ecosystems well into the future (Hofmann et al. 2021). Anthropogenic stressors such as poor water quality, coastal development, and fishing activities can further exacerbate the effects of climate change on coastal ecosystems. MPAs may confer some resiliency to climate change by providing a buffer from some of these stressors, especially MPAs that limit or completely exclude fishing (Micheli et al. 2012, Roberts et al. 2017). Management of California's fisheries is mandated by the Marine Life Management Act, which includes objectives such as ecosystem protection, sustainability, and rebuilding populations, among others (Fish & G. Code § 7050). While the primary function of MPAs in California is to protect and enhance marine habitats and populations, understanding how effective fisheries management measures interact with a functioning MPA Network to bolster resiliency to climate change in California is still a critical knowledge gap identified in the DMR to be addressed through implementation of Recommendations 26-28 that focus on influencing factors and fisheries integration (CDFW 2022).

QUESTION 6: ARE THERE SIGNIFICANT MANAGEMENT GAPS THAT NEED TO BE FILLED TO INFORM THE EVALUATION OF THE PROPOSED CHANGE?

Yes. DMR Recommendation 4 states that CDFW and CFGC should “apply what is learned from the first DMR to support proposed changes to the MPA Network,” and that “current and future proposed changes to Network design, individual MPAs, and current MPA Management Program priorities and policies [should be] consistent with the findings of this Review.”

When the DMR results were released in 2022, they did not indicate that large scale changes, such as the addition of new MPAs, were necessary to improve MPA Network performance. The recommendation at that time was that more time is needed for the benefits of the MPA Network to be fully realized. Several of the DMR Prioritized Recommendations aim to fill critical knowledge gaps in our understanding of the MPA Network functioning as a social-ecological system. Prior to implementing large-scale changes, critical knowledge gaps, including better integration of fisheries and MPA management, need to be filled, along with continued climate change monitoring, and human dimensions considerations. Furthermore, the directives in Fish & G. Code section 2853(c)(5) require a process for the establishment, modification, or abolishment of existing or new MPAs that should involve interested parties and be consistent with the Master Plan objectives that align with Fish & G. Code section 2855. These objectives require CDFW to consider factors such as socioeconomic impacts, design of monitoring and evaluation activities, and methods to encourage public participation in the stewardship of the MPA Network. CFGC's petition process does not offer the level of robust engagement and in-depth analysis required by the MLPA and Master Plan for siting new MPAs.

With respect to tribal co-management of California's MPAs, several of the DMR Prioritized Recommendations (CDFW 2022) are directly related to advancing tribal coordination, including recommendations 1, 2, and 24: (1) Improve state agencies tribal engagement and relationship building efforts; (2) Create a clear pathway to tribal MPA management; and (24) Work with CFGC and partners to better incorporate marine cultural heritage into the design of the MPA Network, which may lead to advancements for recommendation (3) Building tribal capacity to participate in MPA management activities.

CDFW has been unable to make substantial progress on other DMR Recommendations due to the time and resources dedicated to the MPA petition process. As a result, CDFW still needs to work with tribes to develop a pathway to tribal MPA management and to improve tribal capacity to engage in MPA management activities and co-stewardship agreements. Tribes and the State already use a variety of approaches to establish such frameworks, including formal co-stewardship agreements, co-management agreements, and memoranda of understanding. Accordingly, CDFW is committed to continuing to work collaboratively with tribes through these and other such partnerships. See 'Tribal Co-Management' in the Evaluation Narrative and Overview for more information.

DMR Recommendation 24 (MPA Network Design) focuses specifically on working with CFGC and partners to better incorporate marine cultural heritage into the design of the MPA Network. It includes two sub-recommendations:

- (a) Develop a process to incorporate SMCPAs (MMAIA § 36700(6)(d)) into existing MPAs and new locations across the Network, and
- (b) Define metrics for identifying culturally important objects and sites to recommend for potential protection.

One potential pathway for implementation at this location is designation of a State Marine Cultural Preservation Area (SMCPA) by California State Parks, as identified in MMAIA § 36700(6)(d). This could help advance DMR Recommendation 24. However, it represents a current management gap, as no SMCPAs exist in the MPA Network, and their designation would require coordination with California State Parks and action by the Parks and Recreation Commission.

DMR Recommendation 8 related to Justice, Equity, Diversity, and Inclusion, would "Evaluate the accessibility of MPAs to various community groups," This work has not yet been completed, but could help assess how the proposed new MPA might affect communities of concern.

QUESTION 7A: WAS THE PROPOSED CHANGE CONSIDERED DURING THE MLPA INITIATIVE PLANNING PROCESS OR THE IMPLEMENTATION PROCESS OF MPAS AROUND THE NORTHERN CHANNEL ISLANDS?

No. A tribal-take only MPA was not considered in Estero Bay during the Central Coast MLPA Initiative planning process, although the Atascadero Beach SMCA was considered during the MLPA Initiative planning process at the same location as the proposed Chitqawi SMCA. This consideration was intended to retain an MPA originally established in 1985 to protect Pismo clams (*Tivela stultorum*).

Retaining this existing MPA (to be called Atascadero Beach SMCA) would have been part of the No-change option (e.g., Package 0, Existing MPAs). However, given that the MPA would have retained protection for just Pismo clams and that the availability of legal-sized clams to recreational harvesters at that time had been reduced throughout the entire region, none of the three MPA array proposals submitted by the Central Coast Regional Stakeholder Group included The Atascadero Beach SMCA (MLPA 2006).

QUESTION 7B: IS THERE NEW INFORMATION AVAILABLE, CHANGING CONDITIONS SINCE THE MLPA IMPLEMENTATION PHASE, AND/OR INFORMATION PRESENTED IN THE DMR THAT WARRANTS REEVALUATION OF THE PROPOSED CHANGE?

No. SYBCI identifies several factors as new information warranting consideration of the newly proposed MPA, including changing ocean conditions associated with climate change and the lack of government-to-government consultation with tribes during the original MLPA Initiative planning process. While these issues are important, neither provides a sufficient basis for reevaluating the proposed change.

SYBCI states that one of the primary purposes of the proposed new MPA is to create an “insurance factor needed to protect marine life and habitat” from climate disturbances. Due to the significant challenge that climate change presents in California and globally, especially to coastal marine environments, CDFW remains committed to managing the MPA Network through the lens of climate change. However, where existing MPAs already meet the established science-based design criteria, as they do near the proposed location, and proposals do not provide evidence that the proposed change would demonstrably provide resiliency by enhancing ecosystem function, the addition of a new MPA alone is insufficient to conclude that climate resilience would be enhanced. The existing MPA Network was designed using core ecological and resiliency principles (Hofmann et al. 2021), specifically larval connectivity and habitat replication. Therefore, an MPA that does not meet the minimum SAT Science Guidelines (e.g., size) has a low probability of contributing meaningful

additional resilience to the MPA Network or of achieving the desired ecological goals for the region. Given the region of the proposed new MPA has not been identified as deficient in meeting SAT Science Guidelines for habitat representation, replication, or spacing, adding a new MPA in this area is unlikely to confer ecosystem or connectivity benefits beyond what the existing MPAs in the area already provide. This is true even if the MPA were proposed at the minimum SAT threshold for size. See response to Question 9 for the SAT Science Guidelines and additional context, and Attachment 1 for more information on climate resiliency.

Although climate change was not explicitly considered during the MLPA Initiative planning process, the MPA Network was designed with resilience-oriented principles in mind with the aim of safeguarding the state's marine ecosystems well into the future (Hofmann et al. 2021). Anthropogenic stressors such as poor water quality, coastal development, and fishing activities can further exacerbate the effects of climate change on coastal ecosystems. MPAs may confer some resiliency to climate change by providing a buffer from some of these stressors, especially MPAs that limit or completely exclude fishing (Micheli et al. 2012, Roberts et al. 2017). Management of California's fisheries is mandated by the Marine Life Management Act, which includes objectives such as ecosystem protection, sustainability, and rebuilding populations, among others (Fish & G. Code § 7050). While the primary function of MPAs in California is to protect and enhance marine habitats and populations, understanding how effective fisheries management measures interact with a functioning MPA Network to bolster resiliency to climate change in California is still a critical knowledge gap identified in the DMR to be addressed through implementation of Recommendations 26-28 that focus on influencing factors and fisheries integration (CDFW 2022).

Attachment 1 to the petition states that, "there was very little effort by the State during the early period of the implementation of the MLPA to consider Tribal MPAs in the network design," and, "since the adoption of the MPA Network, there has been considerable evidence on the benefits of traditional ecological knowledge and other indigenous experience in marine life protection." More recently, the DMR Recommendations outline CDFW's priorities for the advancement of tribal stewardship in MPA management and governance in California. These include improving state agencies' tribal engagement, relationship building, and creating clear pathways and building tribal capacity for tribal MPA management within the existing MPA Network, and incorporation of marine cultural heritage into the design of the MPA Network (CDFW 2022). In alignment with Governor Newsom's Executive Order N-15-19, the 2020 Ancestral Lands Policy, and the California Natural Resources Agency Tribal Stewardship Policy, CDFW is committed to

continuing to work with tribes towards collaborative, government-to-government co-management agreements. This commitment is intended to acknowledge and honor cultural needs by providing adequate time for tribal engagement, building partnerships, and incorporating Traditional Ecological Knowledge into a mutual understanding of co-management over ancestral lands and waters.

In implementing these recommendations, the initial focus toward co-management could alternatively be on existing MPAs in the MPA Network where SYBCI already has tribal exemptions, and which can be accomplished through non-regulatory means. This approach may serve to advance tribal stewardship more immediately and help to inform future efforts elsewhere in the state.

QUESTION 8: IF THE PROPOSED CHANGE AFFECTS AN EXISTING MPA, DOES THE PROPOSED CHANGE ALIGN WITH THE ORIGINAL INTENT OF THE MPA IDENTIFIED DURING THE MLPA INITIATIVE PLANNING PROCESS OR THE IMPLEMENTATION PROCESS OF MPAS AROUND THE NORTHERN CHANNEL ISLANDS?

Not applicable. The proposed change does not affect an existing MPA.

QUESTION 9: DOES THE PROPOSED CHANGE IMPROVE INDIVIDUAL MPA OR MPA NETWORK DESIGN SO THAT IT BETTER ALIGNS WITH OR MEETS THE MPA SCIENCE GUIDELINES?

No. The MLPA requires that the design of individual MPAs and the statewide MPA Network be based on the best readily available science and that MPAs be of adequate size, number, protection level, and location to meet MLPA Goals. The science guidelines developed by the Science Advisory Team and outlined in the Master Plan were created specifically to provide this scientific foundation and serve as the starting point for evaluating alternative MPA proposals. Alignment with these guidelines depends on LOP, which is determined by allowed take, and spatial configuration. More specifically, these guidelines require that an MPA must be at least 9 square miles and meet one of the three highest LOPs (i.e., Very High, High, or Moderate-high) to contribute to ecological goals such as habitat replication and representation.

The proposed new MPA would be 8.45 square miles (Table 1) with a cursory LOP assignment of High¹⁵. Although the new MPA may meet the LOP threshold, it does not meet the minimum size criterion of at least 9 square miles and would need to be increased to meet the minimum size criteria for connectivity goals to improve the design of the MPA Network or enhance alignment with MLPA SAT Guidelines to act as a habitat

¹⁵ LOP assignment precludes consideration of tribal take within the proposed tribal-take only SMCA. The resulting assignment resulted from factoring only non-tribal activities (which are not allowed) and the maximum LOP for any SMCA, which is High.

replicate. Even if it were to meet the size threshold, there are two “backbone” MPA clusters nearby, Point Buchon SMCA/SMR and Piedras Blancas SMCA/SMR. “Backbone” MPA clusters were thoughtfully designed to meet the SAT Guidelines for LOP, size, and spacing to replicate key habitats at an ecologically meaningful scale. The distance between the proposed Chitqawi SMCA and the Point Buchon MPA cluster to the south is 7.37 miles and is 27.02 miles from the Piedras Blancas MPA cluster to the north. At 32.97 miles apart, these two MPA clusters are already spaced on the lower end of the maximum MPA spacing guidelines (31–62 miles) to support connectivity in this portion of the MPA Network. There are additional MPAs nearby that do not act as backbone MPAs, White Rock and Cambria SMCAs, just 11.77 miles from the proposed Chitqawi SMCA. Morro Bay SMRMA and SMR are directly adjacent on the other side of the jetty from the proposed location. Given the region of the proposed new MPA has not been identified as deficient in meeting SAT Science Guidelines for habitat representation, replication, or spacing, adding a new MPA in this area is unlikely to confer ecosystem or connectivity benefits beyond what the existing MPAs in the area already provide. This is true even if the MPA were proposed at the minimum SAT threshold for size. See Question 9 of Attachment 1 the SAT Science Guidelines and additional context.

QUESTION 10A: DOES THE PROPOSED CHANGE ALIGN WITH CDFW FEASIBILITY GUIDELINES?

No. The proposed change would not align with the following Feasibility Guidelines: boundaries are not all described using readily determined lines of latitude and longitude or easily recognizable permanent landmarks, and the offshore boundary does not extend to the 3 nautical mile limit of state waters.

Furthermore, the Feasibility Guidelines recommend take regulations be easily understood by the public to reduce unintentional violations and should be readily enforceable. This includes creating regulations that include technical or complex prohibitions. The jetty that marks the entrance to Morro Bay Harbor is a popular place for hook-and-line fishing, and marks one of the boundaries of the Morro Bay SMRMA where recreational take of finfish¹⁶ is allowed (Cal. Code Regs. Tit. 14 § 632(b)(9I)). Some of the proposed new MPA would fall in the waters on the opposite side of the jetty from the SMRMA. This would make it such that fishing could occur on one side of the jetty but not the other, which is likely to cause confusion and unintended issues with compliance (i.e., if fishing is observed occurring on the SMRMA side of the jetty, anglers may assume they can fish from either side of the jetty). Additionally, some anglers may legally fish on one side of the jetty but attempt to hide rods in the riprap and fish illegally on the other side within

¹⁶ Any species of bony fish or cartilaginous fish (sharks, skates, rays).

the proposed MPA. This would be extremely difficult to enforce, especially in low light conditions. See Question 10a of Attachment 1 for CDFW Feasibility Guidelines.

QUESTION 10B: IF NOT, IS THERE A RATIONALE FOR MOVING FORWARD WITH THE PROPOSED CHANGE OR AN ALTERNATIVE THAT COULD MEET THE INTENT BUT BETTER ALIGN WITH FEASIBILITY GUIDELINES?

Yes. An alternative path to fulfill tribal engagement and co-management goals is to explore opportunities for co-management in existing MPAs and/or outside the MPA Network, including in the Chitqawi area, without establishing a new MPA. The existing MPA Network provides the most immediate and effective framework for advancing durable tribal co-management, and CDFW is committed to pursuing that path in collaboration with interested tribal partners.

Additionally, an alternative to designating a new MPA would be for CDFW to work with the California Native American tribes that have cultural ties to the area and the California State Parks to explore designating a SMCPA to acknowledge the cultural significance of the area without limiting fishing access to the public and other tribes that have a historical connection to the area. This is consistent with DMR Prioritized Recommendation (24) Work with CFGC and partners to better incorporate marine cultural heritage into the design of the MPA Network.

QUESTION 11: DOES THE PROPOSED CHANGE MAINTAIN OR IMPROVE ENFORCEABILITY OF MPA REGULATIONS?

No. The proposed new MPA would result in enforcement challenges because the boundaries are not aligned with readily determinable lines of latitude and longitude or easily recognizable permanent landmarks, and the offshore boundary does not extend to the 3 nautical mile state water boundary, all which compromise enforceability. Furthermore, the jetties that mark the entrance to Morro Bay Harbor is a popular place for hook-and-line fishing, and marks one of the boundaries of the Morro Bay SMRMA where recreational take of finfish is allowed (Cal. Code Regs. Tit. 14 § 632(b)(91)). Some of the proposed new MPA would fall in the waters on the opposite side of the jetty from the SMRMA. This would make it such that fishing could occur on one side of the jetty but not the other, which could cause confusion and issues with compliance.

The proposed tribal take exemption is supported in concept, and Cal. Code Regs. Tit. 14 section 632 (a)(11) provides a definition of tribal take for certain existing MPAs. If all the requirements in the subsection are met, then enforcement of the MPA tribal exemption, including within a tribal take only MPA, is possible. However, MPA tribal exemptions can be a challenge to enforce under certain circumstances and CDFW recommends further

discussions as to how the requested exemptions for this petition would read in regulation as it relates to Cal. Code Regs. Tit. 14 section 632(b)(11).

Partial-take MPAs are generally more difficult to enforce than No-take MPAs due to the:

- Difficulty in discerning if an activity is allowed when surveilling the MPA from afar,
- Increased potential for non-compliance by members of the public who observe activity taking place in an MPA but are unfamiliar with the specific regulations, and
- Increased potential for the illegal take of other species.

Additionally, because this is a proposed new MPA, there is an anticipated period of non-compliance following regulatory changes, particularly when additional restrictions are implemented. This would require additional resources, investments in outreach, education, and enforcement to support enforcement and compliance.

QUESTION 12: DOES THE PROPOSED CHANGE SIMPLIFY REGULATORY LANGUAGE OR ENHANCE PUBLIC UNDERSTANDING WITHOUT CHANGING THE INTENT OF THE MPA?

No. The proposed new Chitqawi SMCA would not simplify any existing MPA regulations. In fact, the proposed change may complicate regulations and decrease public understanding (see responses to Questions 10 and 11 for more information on feasibility and enforceability of the proposed regulation change).

QUESTION 13: DOES THE PROPOSED CHANGE MAINTAIN OR ENHANCE PROTECTION OF MARINE RESOURCES?

Yes. The proposed change has potential to maintain or enhance local protection of marine resources by no longer allowing all extractive activities in the area, except for tribal take by SYBCI.

The proposed new SMCA also has potential to enhance protection of marine resources at the local scale (e.g., nearshore fish species that have smaller home ranges and benthic invertebrates that spend their lives affixed to the substrate). However, part of the stated intent of the new MPA is to protect and increase replication of key habitats, and the proposed size (8.45 square miles) would need to be increased to meet the minimum size criteria to count toward habitat representation and replication (see response to Question 9 for the SAT Science Guidelines and additional context). Although a larger proposed MPA could confer additional marine habitat protection at the local scale, the region of the proposed new MPA has not been identified as deficient in meeting SAT Science Guidelines for habitat representation, replication, or spacing. As such, a new MPA in this area is unlikely to enhance protection of marine resources at the MPA Network

scale. This is true even if the proposed size meets the SAT Science Guidelines criterion for size.

QUESTION 14: DOES THE PROPOSED CHANGE PROVIDE MORE EQUITABLE ACCESS OPPORTUNITIES (E.G., FISHING, EDUCATIONAL, AND/OR OTHER RECREATIONAL OPPORTUNITIES) FOR TRADITIONALLY UNDERSERVED OR MARGINALIZED COMMUNITIES?

See Question 14 of Attachment 1.

QUESTION 15: DOES THE PROPOSED CHANGE HAVE THE POTENTIAL TO AFFECT CONSUMPTIVE AND/OR NON-CONSUMPTIVE ACTIVITIES? IF SO, HOW?

Yes. The proposed change has the potential to affect both consumptive and non-consumptive activities. The data described here represents a single analysis of potential impacts on fisheries in the area. The full extent of socioeconomic impacts in this area, including on fisheries, is unknown (see Question 5 in Attachment 1 for significant information gaps)

Commercial fishing in the area is likely to be adversely impacted. The proposed MPA would close 13.8% of commercial fishing block 607, an economically significant and productive fishing area close to Morro Bay. Morro Bay is a coastal fishing community, and this block has been the source of millions of dollars of catch value since final implementation of the MPA Network in 2012. Specifically, between 2013 and 2025, local fishermen caught and landed \$1.4 million worth of nearshore groundfish (Figure 2) and \$1.3 million worth of market squid (Figure 3) from this single block, representing 10 and 28% of the total value for all catch in the region for those fisheries, respectively. This block is also significant for ocean salmon trolling (Figure 4), where approximately \$700 thousand worth of ocean salmon was caught and landed between 2013 and 2025, representing 17% of the total value of ocean salmon caught in the region in that time frame. Other regionally important commercial fisheries in the area include red rock crab (*Cancer productus*), other unspecified rock crab, and Dungeness crab caught by trap, and white seabass (*Atractoscion nobilis*) and halibut (California halibut, *Paralichthys californicus*, and Pacific halibut, *Hippoglossus stenolepis*), caught via hook-and-line. However, the proposed MPA is expected to have lower impact on these fisheries in block 607 relative those discussed above (e.g., the total value of block 607 for these fisheries combined from 2013 to 2025 was \$180 thousand). In total, fishing block 607 contributed more than \$3.58 million in landings value to the local community in the years after the completion of MPA Network implementation (for more details on all fishery value data, see CDFW's [Marine Fisheries Data Explorer](#)).

The part of fishing block 607 that overlaps with the proposed MPA is the closest to, and therefore easiest to access from, Morro Bay Harbor. Establishing a tribal take only SMCA

in this area may require some commercial fishery participants to travel further to access fishing grounds, increasing the fuel and time required to bring back equivalent catch, which could reduce the net value of any landings.

Several Commercial Passenger Fishing Vessels (CPFVs) also operate out of Morro Bay. These vessels take paying customers to fish at offshore coastal locations. This proposed change has potential to restrict these vessels' operations within a productive fishing block near the harbor. The data described here represents a single analysis of potential impacts on fisheries in the area. The full extent of socioeconomic impacts in this area, including on fisheries, is unknown (see Question 5 in Attachment 1 for more on information gaps).

The ocean side of the jetty to the south of Morro Rock and Morro Rock Beach, and to the north of the rock at Morro Strand State Beach, would all be within the proposed Chitqawi SMCA. These areas are popular sites for recreational hook-and-line fishing, crabbing, and clamming, which would be restricted by the proposed MPA. Fishing from the manmade jetty does not require a fishing license, so anglers seeking free fishing opportunities would be affected.

The area also provides many opportunities for human connection with the ocean through non-consumptive activities such as swimming, surfing, beach combing, and wildlife viewing. Understanding how people interact with and derive benefits from the ocean and how these benefits may be affected by MPAs is challenging (Hall-Arber et al. 2021, CDFW 2022, Travis et al. 2026). Social science research within the MPA Monitoring Program is a rapidly expanding field of MPA research, as well as a priority DMR Recommendation to invest in improving understanding of the human dimensions of MPAs and develop a human dimensions working group and research agenda (DMR Recommendation 12).

Regarding research and study opportunities, the proposed MPA is close to a major research institution, California Polytechnic Institute, San Luis Obispo. There do not appear to be any long-term monitoring sites or non-MPA reference sites within the boundaries of the proposed MPA.

QUESTION 16: IS THE PROPOSED CHANGE CONSISTENT WITH CFGC JUSTICE, EQUITY, DIVERSITY AND INCLUSION POLICY?

See Question 16 of Attachment 1 for additional context on CFGC's response.

QUESTION 17: IS THE PROPOSED CHANGE CONSISTENT WITH CFGC COASTAL FISHING COMMUNITIES POLICY?

The following analysis was prepared by CFGC staff. See Question 17 of Attachment 1 for additional context on CFGC’s response.

The proposed change would reduce fishing access, particularly for fishery participants associated with the coastal fishing communities of Morro Bay and Avila (Port San Luis). The proposed change has the potential to impact several commercial fisheries that utilize this area. However, this change would provide improved access for federally recognized tribal communities.

QUESTION 18: DOES THE PROPOSED CHANGE INTERACT WITH OR HAVE THE POTENTIAL TO AFFECT PROPOSED CHANGES IN OTHER 2023 MPA PETITIONS?

No. There are no potential interactions with or effects on any of the other 2023 MPA petitions.

V. SUPPLEMENTAL ANALYSES, DATA AND INFORMATION, AND CITATIONS

TABLES AND FIGURES

Table 1. MPA attributes (area, LOP, depth range, and habitat extent) of Chitqawi SMCA as proposed in petition 2023-19MPA_AMI. Habitat extent may be reported in linear miles or square miles, depending on data availability and Science Advisory Team guidance. A dash (—) indicates that the proposed MPA does not contain the habitat type. An MPA contributes to habitat replication only if it first meets the minimum size (>9 sq mi) and LOP (Very High, High, or Moderate-high) criteria (i.e., first two rows must be bold), according to SAT Science Guidelines established during the MLPA Initiative planning process. As proposed, the Chitqawi SMCA is 8.45 square miles and would need to be increased to meet the minimum size criteria for connectivity goals^a.

CDFW EVALUATION 2023-19MPA_AMI Cohen

	Proposed
MPA Area (sq mi)	8.45
Level of Protection	High^b
Min Depth (m)	0
Max Depth (m)	66.4
Eelgrass (sq mi)	—
Kelp (mi)	—
Beach (mi) ^a	2.20
Rocky Intertidal (mi)	0.41
Estuaries (sq mi)	3e-3
Hard Substrate	
0-30 m (mi)	0.09
30-100 m (sq mi) ^a	0.27
100-200 m (sq mi)	—
>200 m (sq mi)	—
Soft Substrate	
0-30 m (mi) ^a	2.78
30-100 m (sq mi)	4.49
100-200 m (sq mi)	—
>200 m (sq mi)	—

^a If the proposed Chitqawi SMCA were to meet the size threshold of at least 9 square miles, the proposed MPA would count as a habitat replicate for beach, hard substrate (30-100 m), and soft substrate (0-30m), according to SAT Science Guidelines established during the MLPA Initiative planning process.

^b LOP assignment precludes consideration of tribal take within the proposed tribal-take only SMCA. The resulting assignment resulted from factoring only non-tribal activities (which are not allowed) and the maximum LOP for any SMCA, which is High.

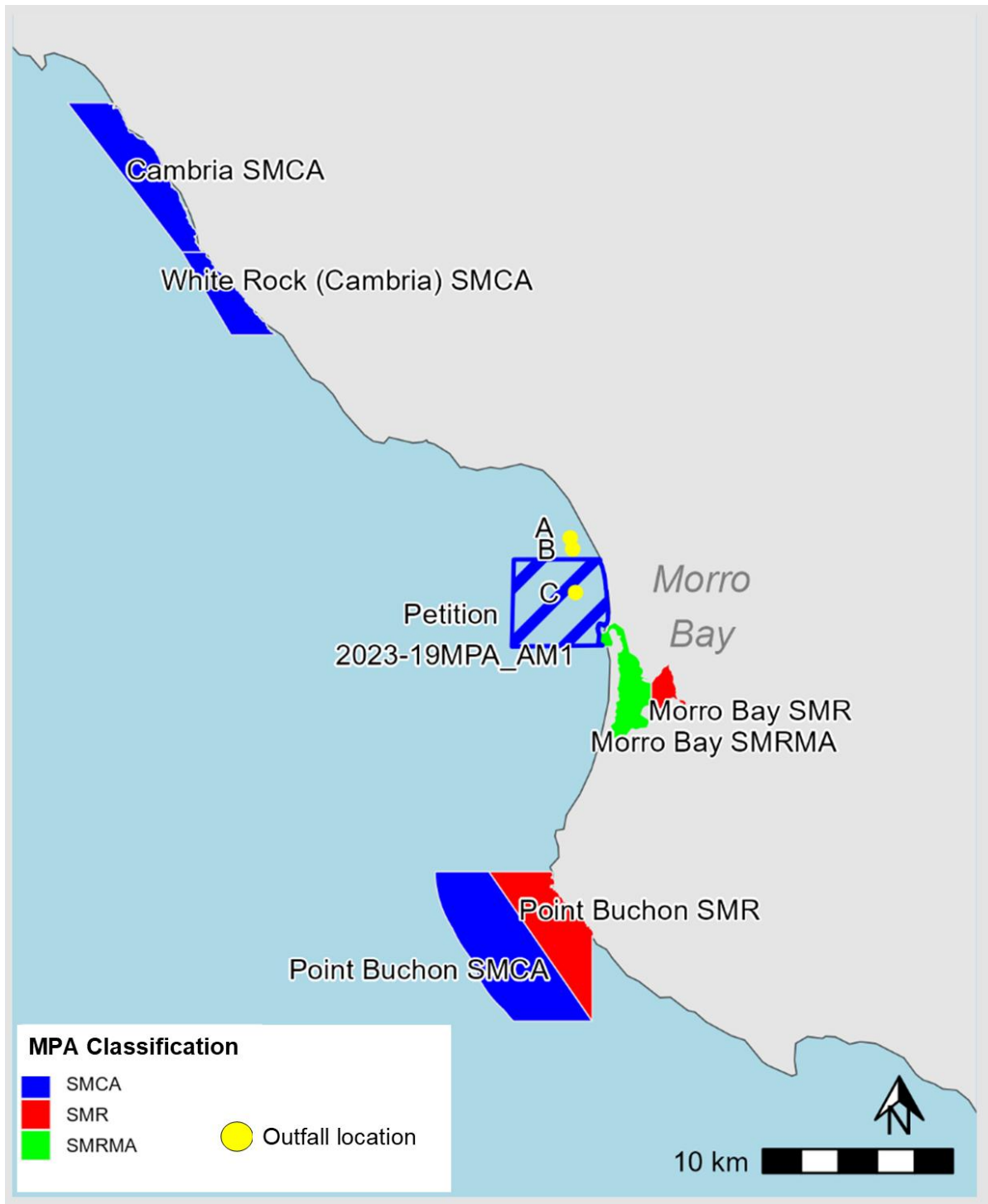


Figure 1. Point source discharge locations for Cayucos Sanitary District Wastewater Treatment Plant (A), Chevron Estero Bay Marine Terminal (B), and Morro Bay Water Reclamation Facility (C), relative to 2023-19MPA_AM1 proposed new SMCA (blue hatching).

Nearshore Groundfish Commercial Fishing Value 2013-2025

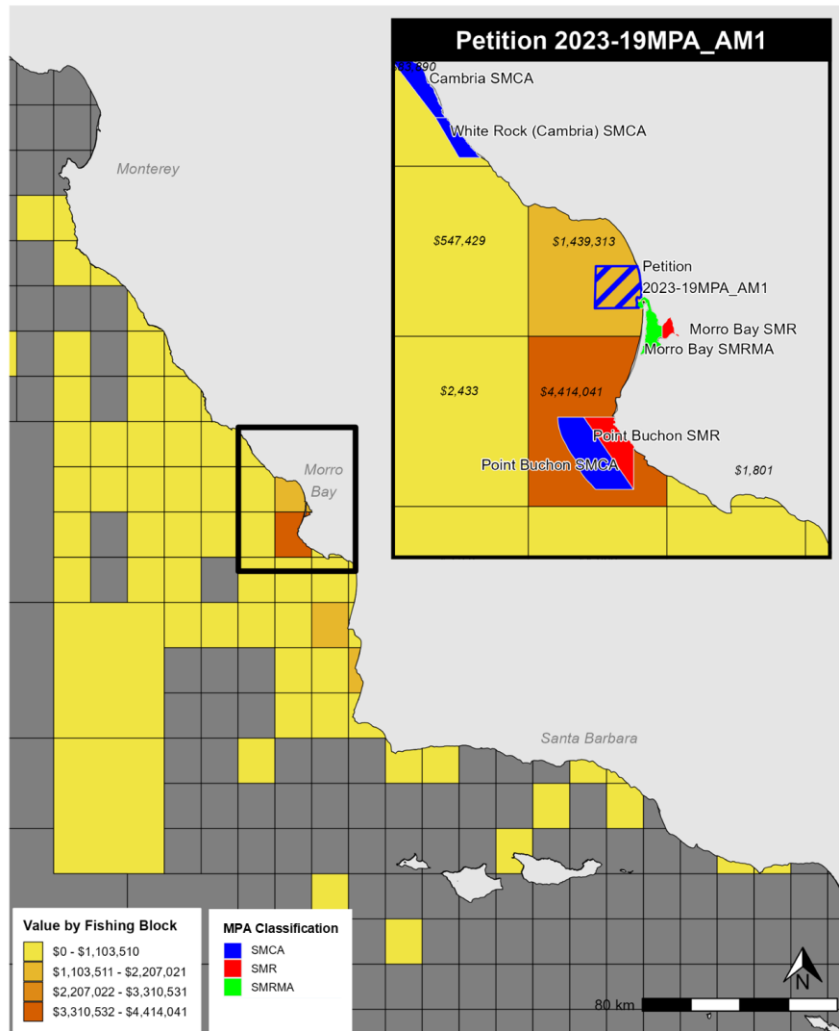


Figure 2. Total value (in \$US) of commercially caught nearshore groundfish in the area shown (cabezon, *Scorpaenichthys marmoratus*; California scorpionfish, *Scorpaena guttata*; California sheephead, *Bodianus pulcher*; black rockfish, *Sebastes melanops*; black-and-yellow rockfish, *S. chrysomelas*; blue rockfish, *S. mystinus*; brown rockfish, *S. auriculatus*; China rockfish, *S. nebulosus*; copper rockfish, *S. caurinus*; gopher rockfish, *S. carnatus*; grass rockfish, *S. rastrelliger*; kelp rockfish, *S. atrovirens*; olive rockfish, *S. serranoides*; quillback rockfish, *S. maliger*; treefish, *S. serriceps*; kelp greenling, *Hexagrammos decagrammus*; rock greenling, *H. lagocephalus*; and monkeyface prickleback, *Cebidichthys violaceus*) via a variety of gear types including hook-and-line, Portuguese longline, fish trap, and trawl from 2013 to 2025 by California Department of Fish and Wildlife fishing block for the Morro Bay area (Arroyo Grande, Atascadero, Avila/Port San Luis, Bakersfield, Baywood Park, Cambria Cayucos, Grover City) with reference to petition 2023-19MPA_AM1. Actual dollar value provided within fishing blocks

CDFW EVALUATION 2023-19MPA_AM1 Cohen

that overlap with the proposed new Chitqawi SMCA boundary (blue hatching). *Note no calico rockfish were landed during this time period for the Morro Bay area. Each block is ten minutes of longitude by ten minutes of latitude (roughly ten miles square).

Market Squid Commercial Fishing Value 2013-2025

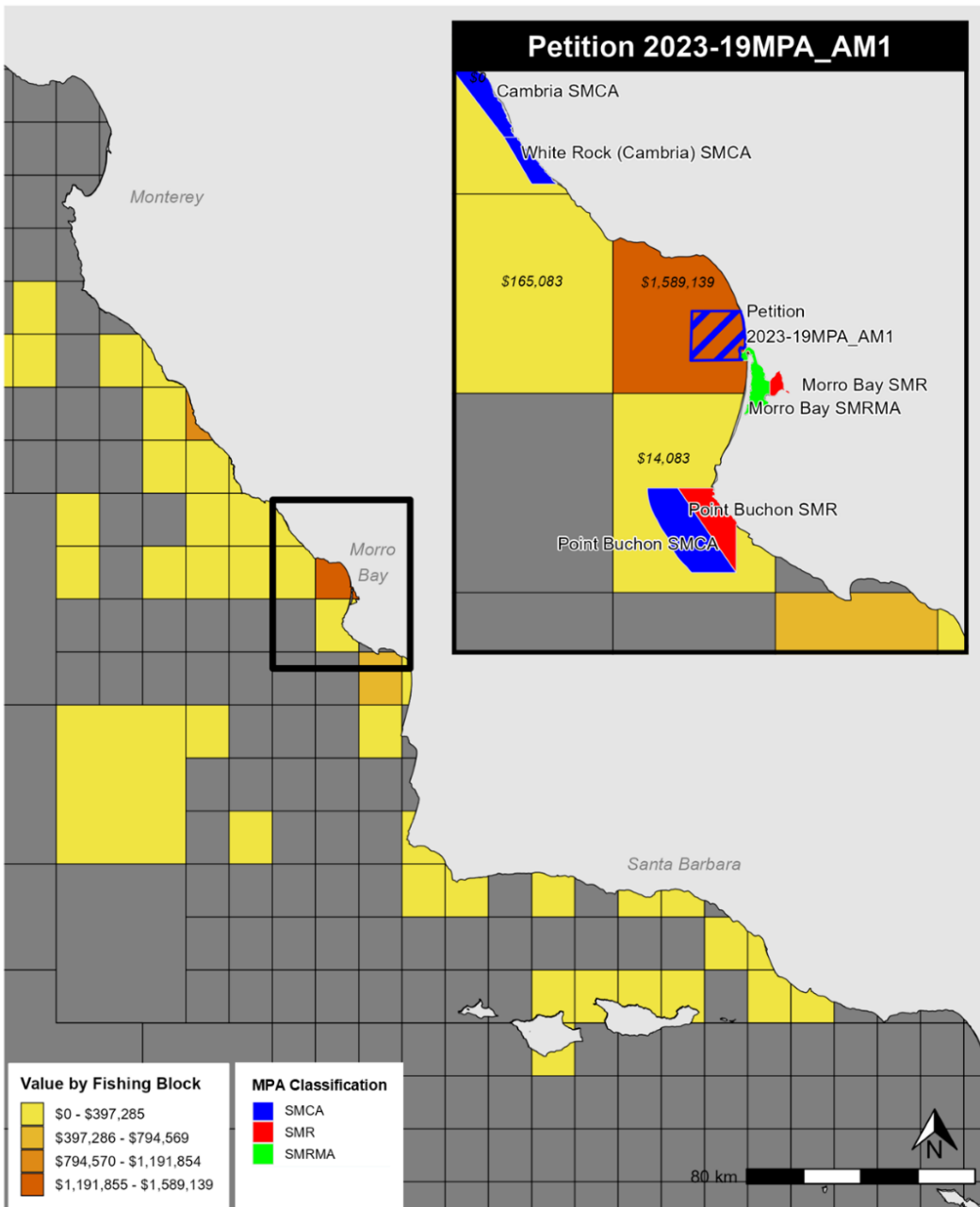


Figure 3. Total value (in \$US) of commercially caught market squid (*Doryteuthis opalescens*) primarily by seine from 2013 to 2025 by California Department of Fish and Wildlife fishing block for the Morro Bay area (Arroyo Grande, Atascadero, Avila/Port San

CDFW EVALUATION 2023-19MPA_AM1 Cohen

Luis, Bakersfield, Baywood Park, Cambria Cayucos, Grover City) with reference to petition 2023-19MPA_AM1. Actual dollar value provided within fishing blocks that overlap with the proposed new Chitqawi SMCA boundary (blue hatching). Each block is ten minutes of longitude by ten minutes of latitude (roughly ten miles square).

Ocean Salmon Commercial Fishing Value 2013-2025

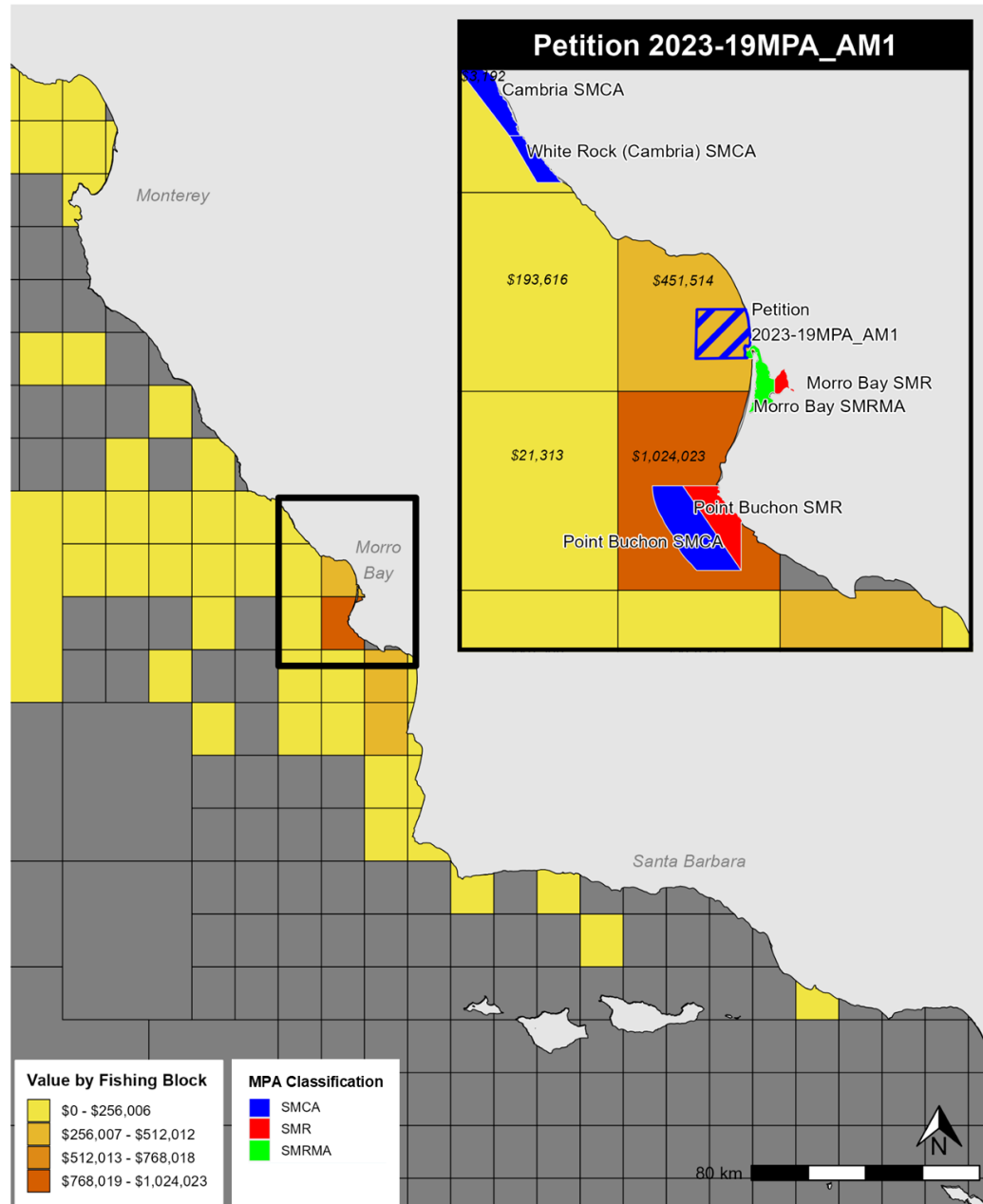


Figure 4. Total value (in \$US) of ocean salmon (*Oncorhynchus tshawytscha*) caught by hook-and-line from 2013 to 2025 by California Department of Fish and Wildlife fishing

block for the Morro Bay area (Arroyo Grande, Atascadero, Avila/Port San Luis, Bakersfield, Baywood Park, Cambria Cayucos, Grover City) with reference to petition 2023–19MPA_AMI. Actual dollar value provided within fishing blocks that overlap with the proposed new Chitqawi SMCA boundary (blue hatching). Each block is ten minutes of longitude by ten minutes of latitude (roughly ten miles square).

CITATIONS

Armitage D.R., R. Plummer, F. Berkes, R.I. Arthur, A.T. Charles, I.J. Davidson-Hunt, A.P. Diduck, N.C. Doubleday, D.S. Johnson, M. Marschke, P. McConney, E.W. Pinkerton, E.K. Wollenberg. 2009. Adaptive co-management for social-ecological complexity. *Frontiers in Ecology and the Environment*. 7(2).

Artelle, K.A., M. Zurba, J. Bhattacharyya, D.E. Chan, K. Brown, J. Housty, F. Moola. 2019. Supporting resurgent Indigenous-led governance: A nascent mechanism for just and effective conservation. *Biological Conservation* 240.

Ban NC, A Frid, M. Reid, B. Edgar, D. Shaw, P. Siwallace. 2018. Incorporate Indigenous perspectives for impactful research and effective management. *Nature Ecology and Evolution* 2(11).

Bates, A.E., R.S.C Cooke, M.I. Duncan, G.J. Edgar, J.F. Bruno, L. Benedetti-Cecchi, I.M. Cote, J.S. Lefcheck, M.J. Costello, N. Barrett, T.J. Bird, P.B. Fenberg, R.D. Stuart-Smith. 2019. Climate resilience in marine protected areas and the ‘Protection Paradox’. *Biological Conservation* 236: 305–314.

Benedetti-Cecchi L., A.E. Bates, G. Strona, F. Bulleri, B. Horta e Costa, G.J. Edgar, B. Hereu, D. Reed, R.D. Stuart-Smith,, N.S. Barrett, D.J. Kushner, M.J. Emslie, J.A. García-Charton, E.J. Gonçalves, E. Aspillga. 2024. Marine protected areas promote stability of reef fish communities under climate warming. *Nature Communications* 15:1822.

Berkes, F. 2009. Evolution of co-management: Role of knowledge generation, bridging organizations and social learning. *Journal of Environmental Management* 90(5).

Bruno J.F., A.E. Bates, C. Cacciapaglia, E.P. Pike, S.C. Amstrup, R. van Hooidek, S.A. Henson, R.B. Aronson. 2018. Climate change threatens the world’s marine protected areas. *Nature Climate Change* 8:499–503.

California Department of Fish and Wildlife. 1989 (updated in 2001). *A Guide to the Artificial Reefs of Southern California*.

California Department of Fish and Wildlife (CDFW). 2002. Nearshore Fishery Management Plan. CDFW, Sacramento, CA. California Department of Fish and Wildlife. 2016. California Marine Life Protection Act Master Plan for Marine Protected Areas.

California Department of Fish and Wildlife (CDFW). 2016. California Marine Life Protection Act Master Plan for Marine Protected Areas.

California Department of Fish and Wildlife (CDFW). 2022. California's Marine Protected Area Network Decadal Management Review. CDFW, Sacramento, CA.

California Department of Parks and Recreation (CDPR). 2010. California State Parks Guidelines for Creating Marine Managed Areas. CDPR, Sacramento, CA.

California Regional Water Quality Control Board, Central Coast Region. 2017. [ORDER NO. R3-2017-0049 NPDES NO. CA0001465](#), Waste Discharge Requirements for the Chevron Estero Marine Terminal. California Regional Water Quality Control Board, Central Coast Region, San Luis Obispo, CA.

California Regional Water Quality Control Board, Central Coast Region. 2020. [ORDER NO. R3-2020-0004 NPDES NO. CA3000001](#), Waste Discharge Requirements for the Cayucos Sanitary District Water Resource Recovery Facility Discharge to the Pacific Ocean. California Regional Water Quality Control Board, Central Coast Region, San Luis Obispo, CA.

California Regional Water Quality Control Board, Central Coast Region. 2022. [ORDER NO. R3-2022-0029 NPDES NO. CA3000002](#), Waste Discharge Requirements for the City of Morro Bay Water Reclamation Facility. California Regional Water Quality Control Board, Central Coast Region, San Luis Obispo, CA.

California State Parks, Strategic Planning and Recreation Services Division. Statistical Reports 2015-2023.

California State Water Resources Control Board (SWRCB). 2019. California Ocean Plan. SWRCB, Sacramento, CA. Carr, M.H., S.P. Robinson, C. Wahle, G. Davis, S. Kroll, S. Murray, E.J. Schumacker, M. Williams. 2017. The central importance of ecological spatial connectivity to effective coastal marine protected areas and to meeting the challenges of climate change in the marine environment. *Aquatic Conservation: Marine and Freshwater Ecosystems* 21(S1):6-29.

Carr, M.H., S.P. Robinson, C. Wahle, G. Davis, S. Kroll, S. Murray, E.J. Schumacker, M. Williams. 2017. The central importance of ecological spatial connectivity to effective coastal marine protected areas and to meeting the challenges of climate change in the marine environment. *Aquatic Conservation: Marine and Freshwater Ecosystems* 27(1):6-29.

Carr, M.H., J.E. Caselle, K. Cavanaugh, J. Friewald, K. Kroeker, D. Pondella, B. Tissot. 2022. Monitoring and Evaluation of Kelp Forest Ecosystems in the MLPA Marine Protected Area Network. A report submitted to: California Sea Grant, Ocean Protection Council, California Department of Fish and Wildlife.

Caselle, J.E., K.J. Nickols, J.G. Smith, C. Lopazanski, J. Brun. 2023. A synthesis of Ecological and Social Outcomes from the California Marine Protected Area (MPA) Network. A report to the California Ocean Protection Council and California Department of Fish and Wildlife.

Coleman M.A., P. Cetina-Heredia, M. Roughan, M. Feng, E. van Sebille, B.P. Kelaher. 2017. Anticipating changes to future connectivity within a network of marine protected areas. *Global Change Biology* 23(9):3533–3542.

Eger A.M. and J.K. Baum. 2020. Trophic cascades and connectivity in coastal benthic marine ecosystems: a meta-analysis of experimental and observational research. *Marine Ecology Progress Series* 656: 139–152.

Eisaguirre J.H., J.M. Eisaguirre, K. Davis, P.M. Carlson, S.D. Gaines, J.E. Caselle. 2020. Trophic redundancy and predator size class structure drive differences in kelp forest ecosystem dynamics. *Ecology* 101(5):e02993.

Fidler R.Y., J. Carroll, K.W. Rynerson, D.F. Matthews, R.G. Turingan. 2018. Coral reef fishes exhibit beneficial phenotypes inside marine protected areas. *PLoS ONE* 13(2):e0193426.

Field J.C. and S. Ralston. 2005. Spatial variability in rockfish (*Sebastes* spp.) recruitment events in the California Current System. *Canadian Journal of Fisheries and Aquatic Sciences* 62(10).

Filbee-Dexter K., S. Starko, A. Pessarrodona, G. Wood, K.M. Norderhaug, Piñeiro-Corbeira, T. Wernberg. 2024. Marine protected areas can be useful but are not the silver bullet for kelp conservation. *Journal of Phycology* 60(2):2023–213.

Freedman, R.M., J.A. Brown, C. Caldow, J.E. Caselle. 2020. Marine protected areas do not prevent marine heatwave-induced fish community structure changes in a temperate transition zone. *Scientific Reports* 10:21081.

Friedlander, A.M., Y. Golbuu, E. Ballesteros, J.E. Caselle, M. Gouzo, D. Olsudong, E. Sala. 2017. Size, age, and habitat determine effectiveness of Palau's Marine Protected Areas. *PLoS ONE* 12(3):e0174787.

Gilby B.L. and T. Stevens. 2014. Meta-analysis indicates habitat-specific alterations to primary producer and herbivore communities in marine protected areas. *Global Ecology and Conservation* 2:289–299.

Green, K.M. and R.M. Starr. 2011. Movements of small adult black rockfish: implications for the design of MPAs. *Marine Ecology Progress Series* 436:219-230.

Hall-Arber, M., S. Murray, L. Aylesworth, M. Carr, J. Field, K. Grorud-Colvert, R. Martone, K. Nickols, E. Saarman, S. Wertz. 2021. Scientific Guidance for California's MPA Decadal Reviews: A Report by the Ocean Protection Council Science Advisory Team Working Group and California Ocean Science Trust.

Hamilton, S.L., E.G. Kennedy, M. Zulian, T.M. Hill, B. Gaylord, E. Sanford, A.M. Ricart, M. Ward, A.K. Spalding, K. Kroeker. 2023. Variable exposure to multiple climate stressors across the California marine protected area network and policy implications. *ICES Journal of Marine Science* 80(7):1923-1935.

Hanan D.A. and B.E. Curry. 2012. Long-term movement patterns and habitat use of nearshore groundfish: tag-recapture in Central and Southern California waters. *The Open Fish Science Journal* 5:30-43.

Hannah R.W. and P.S. Rankin. 2011. Site fidelity and movement of eight species of Pacific Rockfish at a high-relief rocky reef on the Oregon Coast. *Fisheries Management* 31(3):483-494.

Hixon M.A., D.W. Johnson, S.M. Sogard. 2014. BOFFFFs: on the importance of conserving old-growth are structure in fishery populations. *ICES Journal of Marine Science* 71(8):2171-2185.

Hofmann, G.E., E.L. Hazen, R.F. Ambrose, D. Aseltine-Nielson, H. Carter, J.E. Caselle, F. Chan, D. Kone, A. Levine, F. Micheli, D. Panos, J. Sunday, and J.W. White. 2021. Climate resilience and California's Marine Protected Area Network: A report by the Ocean Protection Council Science Advisory Team Working Group and California Ocean Science Trust. Ocean Protection Council, Sacramento, CA.

Jacquemont J., R. Blasiak, C. Le Cam, M. Le Gouellec, J. Claudet. 2022. Ocean conservation boosts climate change mitigation and adaptation. *One Earth* 5(10):1126-1138.

Kumagai J.A., M.C. Goodman, J.C. Villaseñor-Derbez, D.S. Schoeman, K.C. Cavanaugh, T.W. Bell, F. Micheli, G. De Leo, N. Arafeh-Dalmau. 2024. Marine protected areas promote resilience of kelp forests to marine heatwaves by preserving trophic cascades. *Global Change Biology* 30: e17620.

Kyprioti, A., V. Almpantidou, A. Chatzimentor, S. Katsanevakis, A.D. Mazaris. 2021. Is the current Mediterranean network of marine protected areas resilient to climate change? *Science of the Total Environment* 792:148397.

- Laidig T.E., J.R. Chess, D.F. Howard. 2007. Relationship between abundance of juvenile rockfishes (*Sebastes* spp.) and environmental variables documented off northern California and potential mechanisms for covariation. *Fishery Bulletin* 105:1.
- Lester S.E., B.S. Halpern, K. Grorud-Colvert, J. Lubchenco, B.I. Ruttenberg, S.D. Gaines, S. Aíramé, R.R. Warner. 2009. Biological effects of no-take marine reserves: a global synthesis. *Marine Ecology Progress Series* 384:33-46.
- Markel R.W., K.E. Lotterhos, C.L.K. Robinson. 2017. Temporal variability in the environmental and geographic predictors of spatial-recruitment in nearshore rockfishes. *Marine Ecology Progress Series* 574:97-111.
- Marshall D.J., S. Gaines, R. Warner, D.R. Barneche, M. Bode. 2019. Underestimating the benefits of marine protected areas for the replenishment of fished populations. *Frontiers in Ecology and the Environment*. 17(7):407-413.
- McClatchie S., J. Gao, E.J. Drenkard, A.R. Thompson, W. Watson, L. Ciannelli, S.J. Bogard, J.T. Thorson. 2018. Interannual and secular variability of larvae of mesopelagic and forage fishes in the Southern California Current System. *Journal of Geophysical Research: Ocean* 123(9):6039-6979.
- Micheli, F., L. Benedetti-Cecchi, S. Gambaccini, I. Bertocci, C. Borsini, G. Chato Osio, F. Romano. 2005. Cascading human impacts, marine protected areas, and the structure of mediterranean reef assemblages. *Ecological Monographs* 75(1):81-102.
- Micheli, F., A. Saenz-Arroyo, A. Greenley, L. Vazquez, J.A. Espinoza Montes, M. Rossetto, G.A. De Leo. 2012. Evidence that marine reserves enhance resilience to climatic impacts. *PLoS ONE* 7(7): e40832.
- Milliken, R., J.R. Johnson. 2017. 2005—An Ethnogeography of Salinan and Northern Chumash Communities—1769 to 1810. *Government Documents and Publications*. 4. https://digitalcommons.csumb.edu/hornbeck_ind_1/4.
- Mireles, C., R. Nakamura, D.E. Wendt. 2012. A collaborative approach to investigate site fidelity, home range, and homing behavior of cabezon (*Scorpaenichthys marmoratus*). *Fisheries Research* 113:133-142.
- MPA Watch Data Reports for San Luis Obispo County, 2021-2025.
- Murray, M.J. 2023. Tribal Co-management of federal lands: Overview and selected issues for Congress. Report No. R47563. Congressional Research Service, Washington D.C.

Olguín-Jacobson, C., N. Arafeh-Dalmau, M. Early-Capistrán, J.A. Kumagai, D.S. Schoeman, J.A. Espinoza Montes, A. Hernández-Velasco, R. Martinez, A. Romero, J. Torre, C.B. Woodson, G. De Leo, and F. Micheli. 2025. Recovery mode: Marine protected areas enhance climate resilience of invertebrate species to marine heatwaves. *Functional Ecology* 39:1879–1893.

Ortiz-Villa, E.M., A. Rassweiler, J.E. Caselle, K.C. Cavanaugh, N. Arafeh-Dalmau, T.W. Bell, K.C. Cavanaugh. 2025. Marine protected areas enhance climate resilience to severe marine heatwaves for kelp forests. *Journal of Applied Ecology* 62(9):2439–2453.

Raimondi, P.T., J. Smith. 2022. Assessment of Rocky Intertidal habitats for the California Marine Protected Area Monitoring Program: Decadal report. A report to the Ocean Protection Council and UC Sea Grant.

Roberts, C.M., B.C. O’Leary, D.J. McCauley, P.M. Cury, C.M. Duarte, J. Lubchenco, D. Pauley, A. Sáenz-Arroyo, U. Rashid Sumaila, R.W. Wilson, B. Worm, J. Carlos Castilla. 2017. Marine reserves can mitigate and promote adaptation to climate change. *Proceedings of the National Academy of Sciences* 114(24):6167–6175.

Ruzicka J.J., R.D. Brodeur, R.L. Emmett, J.H. Steele, J.E. Zamon, C.A. Morgan, A.C. Thomas, T.C. Wainwright. 2012. Interannual variability in the Northern California Current food web structure: Changes in energy flow pathways and the role of forage fish, euphausiids, and jellyfish. *Progress in Oceanography* 102:19–41.

Saarman E., M. Gleason, J. Ugoretz, S. Aíramé, M. Carr, E. Fox, A. Frimodig, T. Mason, J. Vasques. 2013. *Ocean and Coastal Management* 74:45–56.

Sage Walker, V. and M. Cooney. 2022. Parks and Stewardship Forum. We Are Ocean People: Indigenous Leadership in Marine Conservation 38(2):317–324.

Smith J., C.M. Free, C. Lopazanski, J. Brun, C.R. Anderson, M.H. Carr, J. Claudet, J.G. Eurich, T.B. Francis, S.L. Hamilton, D. Mouillot, P.T. Raimondi, R.M. Starr, S.L. Ziegler, K.J. Nickols, J.E. Caselle. 2023. A marine protected area network does not confer community structure resilience to a marine heatwave across coastal ecosystems. *Global Change Biology* 29(19):5634–5651.

Soler G.A., G.J. Edgar, R.J. Thomson, S. Kininmonth, S.J. Campbell, T.P. Dawson, N.S. Barrett, A.T.F. Bernard, D.E. Galván, T.J. Willis, T.J. Alexander, R.D. Stuart-Smith. 2015. Reef fishes at all trophic levels respond positively to effective marine protected areas. *PLoS ONE* 10(10):e0140270.

Villamoor A., M.A. Becerro. 2012. Species, trophic, and functional diversity in marine protected and non-protected areas. *Journal of Sea Research* 73:109–116.

Warrior M., L. Fanning, A. Metaxas. 2022. Indigenous peoples and marine protected area governance: a Mi'kmaq and Atlantic Canada case study. FACETS 7.

Wilson J.R., B.R. Broitman, J.E. Caselle, D.E. Wendt. 2008. Recruitment of coastal fishes and oceanographic variability in central California. Estuarine, Coastal and Shelf Science 79(3):483-490.

Ziegler, S.L., R.O. Brooks, L.F. Bellquist, J.E. Caselle, S.G. Morgan, T.J. Mulligan, B.I. Ruttenberg, B.X. Semmens, R.M. Starr, J. Tyburczy, D.E. Wendt, A. Buchheister, J.R. Marin Jarrin, C. Pasparakis, S.J. Jorgensen, J.A. Chiu, J. Colby, C.L. Coscino, L. Davis, F. de Castro, J.T. Elstner, C. Honeyman, E.T. Jarvis Mason, E.M. Johnston, S.L. Small, J. Staton, G.T. Waltz, B. Basnett, E.V. Satterthwaite, H. Killeen, C.D. Dibble, S.L. Hamilton. 2023. Collaborative fisheries research reveals size and age determine efficacy across a network of marine protected areas. Conservation Letters DOI: 10.1111/conl.13000.

Ziegler, S.L., J.M. Johnson, R.O. Brooks, E.M. Johnston, J.L. Mohay, B.I. Ruttenberg, R.M. Starr, G.T. Waltz, D.E. Wendt, S.L. 2023. Marine protected areas, marine heatwaves, and the resilience of nearshore fish communities. Scientific Reports 13:1405.