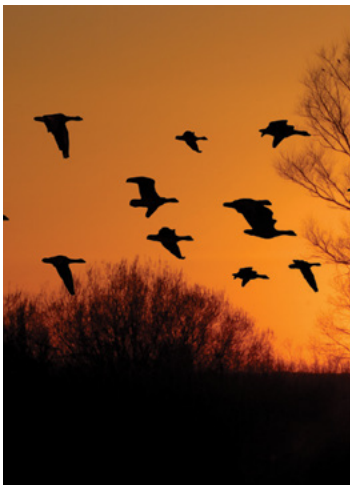


CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

Science Institute

STRATEGIC ACTION PLAN • 2021-2026

Advancing Scientific Capacity to Support CDFW's Mission and Protect California's Biodiversity

CALIFORNIA DEPARTMENT OF FISH & WILDLIFE

ensuring scientific quality and visibility
SCIENCE Institute

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Environmental and social science practiced at the California Department of Fish and Wildlife (CDFW) informs decisions about environmental management, regulations, and policy, in support of its mission "to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public."

The Department's Science Institute was formed in 2012 to ensure scientific integrity, quality, visibility, and transparency at CDFW. Since 2018, the Science Institute is also helping to advance state initiatives on biodiversity resilience and climate change adaptation, by coordinating with CDFW programs and collaborating with external partners. To support both rigorous science and creative solutions to the biodiversity and climate crises, providing an inclusive, dynamic workplace where scientists bring a broad range of knowledge, experiences and backgrounds is critical to meeting CDFW's mission. This Strategic Plan therefore acknowledges the importance of Justice, Equity, Diversity, and Inclusion (JEDI) efforts at CDFW and recognizes California's diverse human population and that underserved communities are being disproportionally affected and harmed by environmental degradation and the biodiversity and climate crises.

The Science Institute's 2021-26 Strategic Action Plan (*Strategic Plan*) was created in response to the 2017 Scientific Integrity Policy, and to provide a framework for communicating, implementing, and achieving the Science Institute's mission, five-year vision, and goals. The *Strategic Plan* results from discussions with CDFW management and Department-wide science staff, regarding how to best promote the quality, visibility, and integrity of the scientific work conducted at and applied within CDFW, and how to find solutions to the complex challenges outlined above.

Implementing the *Strategic Plan* will support CDFW scientific activities by offering services and creating tools for addressing the needs of CDFW scientists. It will also assist CDFW programs with tackling the increasing threats resulting from the interlinked climate change and biodiversity crises. Using high-quality science to inform CDFW's decision-making is essential to navigating uncertainty about the magnitudes of these crises and the Department's ability to respond to them.

VISION

A thriving and diverse community of CDFW scientists and their partners brings scientific excellence to decision-making and informs solutions for climate change adaptation and resilient biodiversity, including effective environmental conservation and ecosystem and species management in California.

MISSION

To advance scientific capacity, excellence, integrity, quality, diversity, and transparency, in support of CDFW's mission-related decisions, initiatives, and programs.

FIVE-YEAR GOALS

Goal A: Help advance scientific capacity, excellence, integrity, quality, diversity, and transparency at CDFW.

Goal B: Support and integrate California's initiatives on climate change adaptation and biodiversity conservation at CDFW.

Each goal will be implemented by carrying out four strategies, each of which contains three to five objectives. Proposed actions for every objective are in the Appendix. The strategies for *Goal A* focus on increasing scientific capacity; supporting science training and professional exchange opportunities; establishing scientific priorities; supporting public outreach regarding CDFW science; and helping to build and maintain a diverse, connected science community at the Department. *Goal B's* strategies focus on representing the Department in the climate change adaptation and biodiversity conservation arenas, developing a CDFW biodiversity and climate change response strategy; tracking progress on 2015 State Wildlife Action Plan (SWAP) implementation; and developing and publishing the 2025 SWAP Update.

By 2026, when these goals, strategies, and objectives have been implemented:

- CDFW scientific priorities and research needs will be established for implementation.
- Support for, and efficiency and effectiveness of scientific activities will be improved.
- An increasingly diverse staff of CDFW scientists will be connected within a thriving science community.
- CDFW scientists will have consistent access to relevant scientific literature and increased opportunities for scientific publication and professional exchange.
- CDFW scientists will have increased access to continued education and other training and mentorship opportunities to improve professional skills.
- The public will have ongoing awareness of the practices and value of CDFW science efforts.

Additionally, statewide coordinated efforts will address the effects of climate change on biodiversity in California. By 2026, there will be:

- An increased understanding of the risks posed by climate change to biodiversity, especially as they pertain to CDFW's properties and other managed areas.
- Response strategies directly pertaining to CDFW's mission available for implementation.
- Increased public awareness of California's biodiversity crisis.
- Recognized progress on achieving SWAP conservation strategies.
- CDFW management activities and grant funded projects incorporated into biodiversity conservation and habitat connectivity goals statewide.
- A completed SWAP 2025 Update.

The *Strategic Plan* is a living document that will be re-evaluated annually and updated as needed. It strives to expand the Department's scientific capacity to achieve CDFW's mission, in the face of the climate change and biodiversity crises that affect all ecosystems and sectors of society, throughout California.

INTRODUCTION

At the California Department of Fish and Wildlife (CDFW), environmental and social science informs decisions on environmental management, regulations, and policy, as part of its mission *to "manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public"*. In order to guide the Department's scientific work, and pursuant to Fish and Game Code § 715, the CDFW Director established the Science Institute in 2012 to *ensure scientific integrity, quality, and transparency at CDFW,* to set consistent standards and practices for all of CDFW's scientific endeavors. This includes improving CDFW scientists' access to scientific literature, heightened public visibility of CDFW science, and development of policies to guide CDFW scientific practices, such as its scientific research, monitoring, and resource assessment programs. In 2017, CDFW adopted its Scientific Integrity Policy to ensure integrity and public confidence in CDFW's scientific work.

CDFW Environmental & Social Science Informs:

Biodiversity conservation
Climate change risk and resilience
Endangered species and ecosystems status and recovery
Environmental permitting
Environmental regulations
Fish and wildlife health
Forensics
Game, fisheries, and timber species management
Genetics for species and population management
Human-wildlife conflicts
Outdoor recreation best practices
Toxic spill response

Beyond the initial focus on CDFW science to *ensure scientific integrity, quality, and transparency at CDFW,* the Science Institute's mission and capacity has expanded to include its current focus on and support for State initiatives on climate change and biodiversity. This includes two comprehensive subjects highlighted by recent legislative initiatives: the 2018 California Biodiversity Initiative; 2020's California Biodiversity Collaborative and Innovative Strategies to Use California Land to Fight Climate Change, Conserve Biodiversity and Boost Climate Resilience via Executive Order N-82-20; and implementation and update of the California State Wildlife Action Plan (SWAP), which incorporates these themes. Due to recently added staff capacity and focus on these initiatives, the Science Institute updated its mission to *"advance scientific capacity, excellence, integrity, quality and transparency in support of CDFW's mission-related decisions, initiatives, and programs."*

The Department's Scientific Integrity Policy (DB 2017-02) fosters the development and use of high-quality scientific work to inform policy and management decisions made by the Department and the Fish and Game Commission. It calls for:

1. "Establishment of clear scientific priorities and objectives such that scientific efforts are relevant from an immediate and a longer-term perspective and facilitate identification and assessment of emerging policy issues."
2. "Development of Departmental policies and guidelines pertaining to scientific ethics and standards, and communication of these to employees, contractors and other Department affiliates involved with the production or use of scientific work."
3. "Providing support and resources for scientific staff, including:

   Investment in the institutional resources needed to attract, develop, and support scientists in the performance of excellent work.

   Support of the use of resources to build or enhance scientific capacity within the Department.

   Encouragement of innovation and continuous learning.

   Fostering partnerships, collaboration, and internal integration to expand the value and reach of the Department's scientific programs.

   Recognition that present-day facilities, equipment, and networks are required to carry out meaningful scientific endeavors. A modern scientific infrastructure forms the basis of the Department's ability to uphold the integrity of current science programs and to study emerging challenges."
4. "Ensuring the free flow of accurate scientific information, both internally and externally, while maintaining consistency with proprietary and confidentiality requirements."

In accordance with the CDFW Scientific Integrity Policy, the Science Institute offers policies and guidance on scientific excellence; and provides online access to scientific literature resources, scientific training, mentorship, and professional exchange opportunities, as well as communication forums or tools to support the CDFW community of scientists.

The Science Institute's 2021-26 Strategic Action Plan (*Strategic Plan*) will guide the direction of the CDFW Science Institute over the next five years. The Science Institute will continue to provide support for scientific integrity and excellence at CDFW and help expand CDFW's scientific capacity. This will best be possible through the establishment of scientific priorities and objectives, in collaboration with CDFW's scientific programs and outside partners, as appropriate, and by helping to build a diverse, equitable, and inclusive workplace staffed by an innovative community of scientists as outlined in the CDFW JEDI Action Plan. The *Strategic Plan* will serve to support CDFW scientific activities by offering services and tools for CDFW scientists to utilize in support of their work. It will also outline ways the Science Institute can help support and inform CDFW programs to tackle the persistent and increasing threats to the state's biodiversity, such as the effects from climate change and habitat loss. Utilizing science to inform critical decisions will be a key component in navigating these uncertain times now and in the future.

BACKGROUND

The *Strategic Plan* is the result of engaging with CDFW management and Department-wide science staff for input on how to best promote the quality, visibility and integrity of the scientific work conducted and applied within CDFW, and how to find solutions for the complex challenges outlined above.

From 2012-18, a dedicated internal science team for scientific development and oversight was formed to strengthen scientific leadership at CDFW. Members volunteered to achieve Science Institute objectives outlined in Fish and Game Code § 715, in collaboration with CDFW's Office of Communication, Education, and Outreach (OCEO) and Office of Training and Development (OTD).

Together, they produced internal science-related policies and guidance, and coordinated the first CDFW Science Symposium in 2013, to showcase the work of CDFW scientists and build the community around CDFW's scientific efforts. This was followed by CDFW Science Symposia in 2015 and 2017. (These symposia continue to be held every two to three years, with the most recent event hosted in February 2020.) The internal science team also arranged for Department-wide access to several fisheries and wildlife journals, plus online search engines and full-text access libraries, as part of the scientific literature access initiative. Additionally, they launched a Conservation Lecture Series to communicate the work of external and internal scientists, through in-person talks and webinars, and created a public Science Institute webpage to host an ongoing series of *Science Spotlight* and *Featured Scientist* posts, to publicly highlight CDFW scientists and their work. They also provided access to scientific training through the Scientific Community Development Program. This program introduces new scientific staff to CDFW protocols and helps them address priority training needs. In May 2018, the internal science team hired a CDFW Science Advisor as the first official Science Institute Lead.

SERVICES AND CAPABILITIES

The *Strategic Plan* was created alongside the Science Institute Charter and in response to the Scientific Integrity Policy, in order to provide a framework for communicating, implementing, and achieving the Science Institute's mission and five-year goals. The Science Institute is structured to help build scientific capacity and diversity within CDFW; support excellence and integrity in applied science; help determine scientific priorities and objectives; promote internal and external scientific exchange and partnerships; and advance statewide initiatives to support landscape-scale conservation and ecosystem and species management, with a focus on biodiversity resilience and adaptation to climate change, implemented by an increasingly diverse staff reflective of California's diverse population**.** The Science Institute's expert team leads or participates in these initiatives by coordinating with CDFW programs and collaborating with external partners.

Services

In support of all CDFW scientists and their work, the Science Institute develops and disseminates internal and external communication tools and forums; policies to guide scientific practices; a scientific curriculum and associated trainings, mentorship opportunities; and other needed tools, forums, and platforms.

Science Institute Services to Support Scientific Excellence at CDFW Include

Promoting an inclusive and diverse community of scientists
Organization of biannual Science Symposia
Expanded access to scientific literature
Facilitation of independent scientific peer review
Training and support for publication in scientific journals
Supporting scientific and professional exchange
Development of a prioritized Science Action Strategy that includes priority research, monitoring, and modeling needs
Supporting the California Fish and Wildlife Journal
Creation of communication tools and pathways for a connected CDFW science community
Facilitation support for scientific program planning
Providing visibility of CDFW science activities to the public
Creating opportunities for science-oriented professional development and mentorship
Developing resources to increase scientific capacity
Facilitation of advanced education and research partnerships with universities

The Science Institute also engages regularly with CDFW programs and external partners from state and federal agencies; universities and other research institutions; and non-profit organizations, on climate change resilience and biodiversity conservation across the state. One example of supporting the management of CDFW lands and waters in this *Strategic Plan* includes informing on-site educational efforts about these topics for staff and the public, an opportunity also outlined in the CDFW JEDI Action Plan.

Services to Support Climate Change Adaptation and Biodiversity Conservation Include

Conducting climate change risk assessments on CDFW lands and waters
Developing and sharing best practices for climate change resilience at CDFW
Supporting a network of coupled climate-biodiversity sensors and assessments on selected CDFW sentinel sites
Offering expertise, communication, and guidance for climate change resilience and biodiversity conservation
Representing CDFW in the greater climate change adaptation and biodiversity arenas
Participation in the California Biodiversity Collaborative and Network
Supporting and tracking the implementation of State Wildlife Action Plan (SWAP)
Coordination of the SWAP 2025 Update

Since 2018, the Science Institute has developed new online tools to support a more connected CDFW science community and afford easy access to scientific literature resources.

Online Tools

CDFW Scientist Directory
Science Institute HUB - Online Science-Oriented Communications Commons
Scientific Literature Access Guides

Distinctive Capabilities

The Science Institute and CDFW scientific staff have expertise and capacity in the following distinctive capabilities to utilize in implementing this *Strategic Plan*:

COLLABORATION: Working together for shared outcomes to achieve the best possible solutions.

COMMUNICATION: Sharing information and building tools and practices for a connected community of scientists, internally and externally.

FACILITATION: Enabling the unbiased exchange of information and ideas to reach collective goals and outcomes.

NEUTRALITY: An unbiased, receptive, and non-judgmental approach to any situation to create a safe space for all CDFW scientists to share their perspectives and experiences.

SCIENTIFIC EXPERTISE: Scientific proficiency, experience, credentials, and professional connections in several fields of scientific study.

HUMILITY: "Leaving the ego at the door" to be open to the ideas and needs of others and/or the collective good.

INCLUSIVITY: Inviting to the table and being open to diverse experiences, perspectives, backgrounds, and ideas.

INSPIRATION: Using inner guidance (muse) for encouragement, motivation, and creativity in addressing all aspects of assignments.

MUTUAL SUPPORT: Relying on a team spirit, whereby everyone helps, listens, and assists each other for common achievement.

RESULT-ORIENTATION: Working toward a clear set of goals with envisioned outcomes.

SERVICE-COMMITMENT: Focusing on how to assist others to achieve collective outcomes.

STRATEGIC PLANNING

The Science Institute is committed to accomplishing the goals, objectives, and strategies outlined in this Strategic Plan, following these guiding principles:

Guiding Principles

COMMITMENT TO SCIENTIFIC EXCELLENCE & INTEGRITY: A pledge to assist sustained scientific excellence through training, mentorship, independent peer review, and other possible means.

TRANSPARENT SCIENCE TO INFORM DECISIONS: A commitment to unbiased scientific practices that are open and transparent to all.

BUILDING A DIVERSE SCIENCE COMMUNITY: Supporting and promoting efforts to create an inclusive and diverse community of CDFW scientists.

USING INNOVATIVE & PROACTIVE APPROACHES: Being open to new ideas and forward-thinking tactics to address tasks and find solutions.

CREATING IMPACTFUL TEAMS AND PARTNERSHIPS: Working together and utilizing each other's unique strengths, with team spirit, to create meaningful and lasting outcomes.

SEEKING BROAD SOLUTIONS FOR COLLECTIVE IMPACT: Considering holistic approaches by keeping an eye on the big picture, including socioeconomics, health, diversity, inclusivity, and spiritual considerations that are critical for achieving lasting solutions.

UTILIZING A DEPARTMENTWIDE/STATEWIDE PERSPECTIVE: Connect individual scientific endeavors at the Department to the landscape-scale whole, as appropriate, in fulfillment of CDFW's mission.

Process

To gather internal feedback about how the Science Institute could support the many important CDFW research and science-oriented efforts, and to solicit baseline information to inform a five-year Strategic Plan, the Science Institute conducted the following activities in 2018-20:

Leadership Interviews

May – June 2018: The Science Advisor conducted one-hour phone calls with all Branch Chiefs and Regional Managers, using a standardized questionnaire to solicit focused feedback, and allowing for open feedback at the end of the interview.

August – October 2020: The Science Advisor reached out to specific program managers to receive input on science support needs and existing efforts on independent science advice at CDFW.

Science Institute Advisory Team

June 2018 – ongoing: The Science Advisor leads regular meetings of the Science Institute Advisory Team (SIAT). The SIAT aims to identify scientific capacity needs, data gaps, and solutions; facilitate the development and coordination of CDFW scientific priorities; support scientific collaborations and partnerships; and conduct outreach and education about CDFW's diverse scientific endeavors. Meetings include updates from the Science Advisor; updates and feedback from all SIAT members; and topical discussions whereby the Science Institute team receives input from SIAT members and their constituencies to advance the Science Institute mission. The SIAT reviewed the final drafts of this Strategic Plan in December 2020.

Planning Workshops

August – September 2018: The Science Advisor facilitated two strategic planning workshops with SIAT members. These workshops consisted of a short presentation on Science Institute history, accomplishments, and mission, followed by guided small group activities to solicit information on defining the Science Institute's purpose, vision, mission (updated), charter, and focus areas for a science support program.

Science Institute Roadshow

October 2018 – June 2019: The Science Institute team held a series of two- to three-hour meetings at 25 locations throughout all regions, including Branches, regional offices, Elkhorn Slough National Estuarine Research Reserve, Bodega Marine Laboratory, Wildlife Investigations Laboratory, Fisheries and Wildlife Genetics Laboratory, and San Joaquin and Nimbus Fish Hatcheries. These meetings were conducted to learn how to best support scientific efforts, by soliciting direct input from Branch and Region managers, supervisors, and science staff. Each meeting consisted of an introductory presentation on Science Institute history, accomplishments, mission, vision, and potential focal areas, followed by an open discussion on needs for and barriers to conducting and utilizing high quality science, expanding CDFW science capacity, and identifying potential opportunities for the Science Institute to engage. Outreach efforts in 2020 officially introduced the Science Institute HUB, Scientist Directory, and Literature Access Quick Guide.

Strategic Planning Team Retreat

September 2019: The Science Institute staff team, including the Science Advisor, Climate Change Specialist, Biodiversity Coordinator, SWAP Coordinator, and Conservation Science Specialist, held a two-day strategic planning retreat. The team focused on team building and developing and prioritizing strategies for an integrated Science Institute initiative on biodiversity, climate change adaption, and landscape conservation.

STRATEGIES, OBJECTIVES AND OUTCOMES

The *Strategic Plan* consists of two overarching goals, each supported by four strategies, and 2-5 objectives per strategy. For each strategy, a suite of actions is outlined in Appendix. The hierarchy of planning concepts applied in the *Strategic Plan* is as follows:

HIERARCHY OF APPLIED PLANNING CONCEPTS

Goal

An idea of the future or desired result that a person or a group of people envision, plan, and commit to achieve.

Strategy

A common focus for a set of objectives and actions that work together to achieve a goal.

Objective

A formal statement detailing a desired outcome of a strategy to reach a goal. An objective should be SMART - specific, measurable, achievable, results-oriented, and time-limited.

Action

A specific action or set of tasks undertaken by project staff and/or partners to reach one or more objectives.

Outcome

A desired result upon reaching a goal.

The Science Institute staff, with guidance from the SIAT and CDFW leadership, will develop annual priorities, timelines, and work plans for the implementation of the charted strategies, objectives, and actions. The *Strategic Plan* will undergo annual review by the SIAT to reassess focal areas and priorities, as well as the potential inclusion of additional initiatives, as necessary, to remain relevant, flexible, and dynamic. The Science Institute will complete and post annual progress reports on the Science Institute's public website and internal HUB to communicate activity and progress highlights.

2021-26 Science Institute Goals, Strategies, and Objectives

Goals and Strategies

Each five-year goal includes four strategies for implementation:

Goal A: Help advance scientific capacity, excellence, integrity, quality, diversity, and transparency at CDFW.
Strategy A1. Increase capacity and quality of scientific operations and CDFW-led scientific research projects to ensure scientific integrity, quality, and transparency in decision-making at CDFW.
Strategy A2. Offer planning support to establish clear scientific priorities and objectives, as part of a four-year Science Action Strategy (2022-26) to ensure immediate and long-term relevance to current resource management needs and emerging policy issues.
Strategy A3. Support participation of CDFW scientists in scientific training, mentorship, and professional exchange opportunities to ensure CDFW's scientific excellence, capacity, and quality.
Strategy A4. Participate in activities to support public outreach and education about CDFW science, and build and maintain a diverse, inclusive, and connected community of CDFW scientists.
Goal B. Support and integrate California's initiatives on climate change adaptation and biodiversity conservation at CDFW.
Strategy B1. Help advance statewide climate change adaptation and biodiversity conservation activities by participating in relevant State initiatives and partnerships
Strategy B2. Develop an integrated CDFW Biodiversity - Climate Change Response Strategy to determine risks to and develop responses for conserving and managing biodiversity in CDFW-owned or managed areas.
Strategy B3. Track progress on achieving SWAP conservation strategies by evaluating CDFW grant program-funded projects and other relevant CDFW activities.
Strategy B4. Develop and publish the SWAP 2025 Update and create user guidance.

Objectives

For each goal's strategies, there is a suite of objectives (see Appendix for suggested actions) for implementation by a proposed set of implementers (Tables 1 & 2). The Science Institute Team will be leading each of the proposed actions under each objective. Proposed actions and implementers will be adjusted as needed during implementation.

Table 1: Goal A

Goal A: Help advance scientific capacity, excellence, integrity, quality, diversity, and transparency at CDFW.

STRATEGY A1. Increase capacity and quality of scientific operations and CDFW-led scientific research projects to ensure scientific integrity, quality, and transparency in decision-making at CDFW.

OBJECTIVES	PROPOSED IMPLEMENTERS
Objective A1.1. By 2023, establish and coordinate CDFW Core Science Teams (CST) under SIAT with representative scientists from the main CDFW scientific programs and coordinate the CST to support effective, efficient, and successful scientific practices and operations at CDFW.	Science Institute Team Science Institute Advisory Team (SIAT) Core Science Teams (CST)
Objective A1.2. By 2023, develop job aids and training tools to ensure awareness and implementation of all existing scientific policies in CDFW's scientific practice, and update and develop new policies, standards, and guidelines as needed to support scientific excellence.	Science Institute Team SIAT Organizational Development Branch (ODB)
Objective A1.3. By 2026, coordinate *ad hoc* independent review committees to facilitate peer review of at least five scientific status reviews or investigations conducted at CDFW to ensure scientific integrity, quality, and transparency in decision-making.	Science Institute Team CST SIAT
Objective A1.4. Annually, support the publication and dissemination of a minimum of five CDFW scientific studies or monitoring reports, ideally within peer-reviewed scientific journals or as catalogued peer-reviewed reports.	Science Institute Team CST
Objective A1.5. Annually, work with the Literature Access SIFT and *California Natural Resources Agency Literature Access Partnership* team to maintain, expand, and simplify access to scientific literature to afford CDFW scientists the most up-to-date scientific information to inform their work.	Science Institute Team Literature Access Science Institute Focus Team (SIFT) California Energy Commission Librarian California Natural Resources Agency Literature Access Partnership

STRATEGY A2. Offer planning support to establish clear scientific priorities and objectives, as part of a four-year *Science Action Strategy* (2022-26) to ensure immediate and long-term relevance to current resource management needs and emerging policy issues.

OBJECTIVES	PROPOSED IMPLEMENTERS
Objective A2.1. By 2022, develop a four-year *Science Action Strategy* with interested programs that identifies clear scientific research, monitoring, and program needs and priorities, and related objectives according to program goals.	Science Institute Team CST Interested Programs
Objective A2.2. By 2026, facilitate a process to help up to four interested CDFW programs develop focused research and/or adaptive management plans to achieve program goals, and to link scientific efforts to management and policy decision needs in the programs and/or regions.	Science Institute Team CST Interested Programs
Objective A2.3. Annually, develop at least two proposals to garner fiscal support from available sources to help achieve the highest standards for scientific capacity and quality at CDFW.	Science Institute Team CST Interested Programs
Objective A2.4. By 2024, create at least two cooperatives with universities or other scientific institutions for research and scholarly support to facilitate research priorities outlined in the *Science Action Strategy*, and to assist as partners in CDFW scientific investigations.	Science Institute Team CST Interested Programs

STRATEGY A3. Support participation of CDFW scientists in scientific training, mentorship, and professional exchange opportunities to ensure CDFW's scientific excellence, capacity, and quality.	
OBJECTIVES	**PROPOSED IMPLEMENTERS**
Objective A3.1. Every two years convene the CDFW Science Symposium, and by 2026, establish at least two other opportunities for cross-program exchange and mentorship for CDFW science staff.	Science Institute Team Science Symposium SIFT Office of Training and Development
Objective A3.2. Regularly disseminate information about internal and external scientific exchange opportunities on the Science Institute HUB and scientist listserv to support participation of CDFW scientists in professional meetings, webinars, workshops, mixers, or other exchange forums.	Science Institute Team CDFW Science Community Justice, Equity, Diversity, Inclusion (JEDI) Task Force
Objective A3.3. Annually, lead development of at least two internal training courses and/or mentorship opportunities on scientific publication, promote the California Fish and Wildlife Journal, and offer access to CDFW-authored scientific articles, to support the publication and dissemination of CDFW scientific work in peer-reviewed scientific literature.	Science Institute Team Science Institute HUB Science Library California Fish and Wildlife Journal Editor-in-Chief Office of Training and Development (OTD) Scientist Instructors
Objective A3.4. By 2023, lead the development of a CDFW science curriculum to be implemented annually, including individual and group scientific trainings for scientists on topics of importance to CDFW scientific efforts.	Science Institute Team OTD CST

STRATEGY A4. Participate in activities to support public outreach and education about CDFW science, and build and maintain a diverse, inclusive, and connected community of CDFW scientists.

OBJECTIVES	PROPOSED IMPLEMENTERS
Objective A4.1. Annually, support the Office of Communication, Education and Outreach (OCEO) in continuing current levels of outreach and education about CDFW's diverse scientific endeavors to the public, and by 2026, support the expansion of focused communications for underserved communities.	Science Institute Team Communication SIFT OCEO JEDI Task Force
Objective A4.2. By 2023, as part of a *Science Communication Strategy* linked to the CDFW Scientific Integrity Policy's Appendix 4, develop external and internal communication guidelines and implementation pathways.	Science Institute Team Communication SIFT SIAT OCEO JEDI Task Force
Objective A4.3. Each year, facilitate at least five Science Institute Focus Teams (SIFTs) focused on specific topics, which will establish new and continue existing opportunities for coordination and communication among CDFW scientists, and maintain communication tools to promote internal collaboration and exchanges.	Science Institute Team Interested Science Staff
Objective A4.4. Each year, directly engage with at least two scientific programs to share services and opportunities offered by the Science Institute, and foster cross-communication and collaboration.	Science Institute Team Interested Programs SIAT
Objective A4.5. By 2026, help increase diversity in the CDFW scientist community and foster inclusion at CDFW.	Science Institute Team CDFW Recruitment Manager JEDI Task Force SIAT

Table 2: Goal B

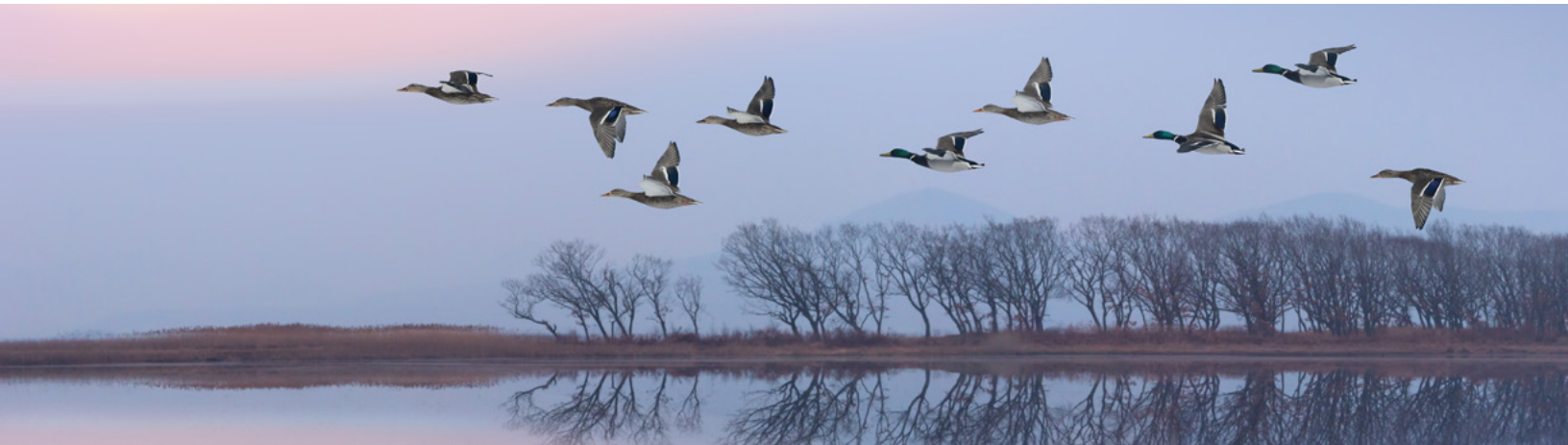
Goal B. Support and integrate California's initiatives on climate change adaptation and biodiversity conservation at CDFW.

STRATEGY B1. Help advance statewide climate change adaptation and biodiversity conservation activities by participating in relevant State initiatives and partnerships.

OBJECTIVES	PROPOSED IMPLEMENTERS
Objective B1.1. Each year, participate in California's Climate Action Teams, the California Biodiversity Collaborative, and other forums to help align climate change and biodiversity conservation actions statewide.	Science Institute Team California Natural Resources Agency Partners
Objective B1.2. Annually, help coordinate and participate in initiatives that focus on statewide coordination of climate change and California biodiversity-related science, management, and stewardship.	Science Institute Team Climate Change SIFT California Natural Resources Agency Partners JEDI Task Force
Objective B1.3. Annually, help the Biogeographic Data Branch coordinate statewide habitat connectivity planning initiatives related to the California's Essential Habitat Connectivity Project, in partnership with California Department of Transportation and others.	Science Institute Team Biogeographic Data Branch Habitat Connectivity SIFT Partners
Objective B1.4. By 2026, increase the size and scale of California Biodiversity Day events tenfold, to improve public awareness of California's biodiversity and establish the day as an annual celebration.	Science Institute Team California Natural Resources Agency Partners **JEDI Task Force**

STRATEGY B2. Develop an integrated CDFW Biodiversity - Climate Change Response Strategy to determine risks to and develop responses for conserving and managing biodiversity in CDFW-owned or managed areas.

OBJECTIVES	PROPOSED IMPLEMENTERS
Objective B2.1. By 2023, evaluate at least one third of currently CDFW-owned or managed areas for their levels of risk or resilience to climate change and develop adaptive management responses for promoting climate change-resilient biodiversity, as needed.	Science Institute Team Wildlife Branch - Lands Program Regions Partners
Objective B2.2. By 2024, develop a *CDFW Biodiversity - Climate Change Response Strategy* to inform adaptive management of biodiversity within CDFW-owned or managed areas that accounts for climate change risks.	Science Institute Team Wildlife Branch - Lands Program Regions
Objective B2.3. By 2026, develop and conduct at least five activities to raise awareness of and provide guidance to CDFW land managers and the public about climate change risks to biodiversity, adaptation options, and ongoing adaptation activities within CDFW-owned or managed areas.	Science Institute Team Wildlife Branch - Lands Program Regions OCEO



STRATEGY B3. Track progress on achieving SWAP conservation strategies by evaluating CDFW grant program-funded projects and other relevant CDFW activities.	
OBJECTIVES	**PROPOSED IMPLEMENTERS**
Objective B3.1. By 2023, with support from CDFW grant programs, determine whether objectives of a representative sample of projects (both underway and planned) funded by at least four CDFW grant programs align with SWAP 2015 strategies.	Science Institute Team CDFW grant programs
Objective B3.2. By 2023, with support from CDFW grant programs and Service-Based Budgeting (SBB) information, evaluate grant project- or CDFW program-related monitoring plans and relevant data of at least four grant programs to determine whether SWAP-aligned project goals are achieved.	Science Institute Team CDFW grant programs SBB Coordinator
Objective B3.3. By 2023, provide guidance to grant programs for considering SWAP priorities in grant applications and project selections.	Science Institute Team CDFW grant programs
Objective B3.4. By 2026, establish and lead a new Science Institute Focus Team (SIFT), the "Adaptive Management SIFT," to assess and promote adaptive management efforts in CDFW programs statewide.	Science Institute Team CDFW grant programs Science and lands staff
STRATEGY B4. Develop and publish the SWAP 2025 Update and create user guidance.	
OBJECTIVES	**PROPOSED IMPLEMENTERS**
Objective B4.1. By 2022, develop a planning process, scope, and action plan for the SWAP 2025 Update.	Science Institute Team CDFW Science Core Team
Objective B4.2. By 2026, create and disseminate guidance to help users navigate SWAP documents.	Science Institute Team Communication SIFT
Objective B4.3. By 2026, complete the planning process and publish the SWAP 2025 Update.	Science Institute Team CDFW Science Core Team

Expected Outcomes

In 2026, when these goals and associated objectives are implemented, CDFW's scientific transparency, integrity, diversity, and quality will be enhanced, and scientific priorities and research needs will have been established and addressed. The public will be even more aware of the practices and value of CDFW science efforts. Groundwork will have been laid for CDFW scientists to become more closely representative of California's diverse population, and will be further engaged in scientific exchange across the state to inform decision needs regarding scientific topics associated with CDFW's mission. An increasingly diverse staff of CDFW scientists will be connected within a thriving science community, where they engage with each other professionally, statewide. To achieve scientific excellence, CDFW scientists will have opportunities for continued education and training opportunities, and mentors who can help improve their professional skills.

Statewide-coordinated efforts will be in place to measure and address the effects of climate change on biodiversity in California. There will be an increased understanding of the risks of climate change to biodiversity, especially for CDFW-owned or managed areas, and response strategies directly pertaining to CDFW's mission will be available for implementation. There will be an increased public awareness of California's biodiversity crisis. Recognizable progress will be highlighted on implementing SWAP conservation strategies. CDFW management activities and grant-funded projects will incorporate biodiversity conservation and habitat connectivity goals statewide. The SWAP 2025 Update will be released. The Science Institute will continue its planning and implementation of a new set of goals and objectives for efforts prioritized for the following five years.