CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

California Endangered Species Act

Guidelines for Recovery Planning

April 2026



Cover page photo credit: Owens pupfish (California Department of Fish and Wildlife), Marin western flax (David Greenberger), riparian brush rabbit (U. S. Fish and Wildlife Service)

Suggested citation: California Department of Fish and Wildlife (CDFW). 2026. Guidelines for Recovery Planning. California Department of Fish and Wildlife, P.O. Box 944209, Sacramento CA 94244-2090. 13 pp. Available from: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=232386&inline.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS, ACRONYMS, AND TERMS

CDFW – California Department of Fish and Wildlife
CESA – California Endangered Species Act
Commission – California Fish and Game Commission
ESA – Federal Endangered Species Act
TEK – Traditional Ecological Knowledge

EXECUTIVE SUMMARY

In 2018, an amendment to the California Endangered Species Act (CESA) gave the California Department of Fish and Wildlife (CDFW) the authority to develop non-regulatory recovery plans for CESA-listed threatened and endangered species. Fish and Game Code defines recovery as improvement in the status of a species to the point at which listing is no longer appropriate under CESA. This document establishes CDFW's framework for developing recovery plans and invites partners to participate in the recovery process.

Recovery planning for listed species is modeled on the framework used for threatened and endangered species listed under the federal Endangered Species Act (ESA) and will consist of three parts: (1) a scientific assessment, (2) a recovery plan, and (3) an implementation strategy. A scientific assessment provides the best available information on the species, threats to its existence, and relevant management considerations. A recovery plan guides the long-term approach for delisting a species by establishing recovery criteria, actions, and time and cost estimates. An implementation strategy identifies specific tasks that address the actions outlined in the recovery plan.

CDFW will prioritize CESA-listed species for recovery planning and initiate recovery plans as resources allow. The process of recovery planning starts with identifying or preparing a scientific assessment, followed by information gathering, outreach, and the establishment of a recovery team. The recovery team develops the recovery plan and implementation strategy. For species that are dually listed under the federal ESA and CESA, CDFW has the discretion to adopt an existing federal recovery plan with or without revisions. Tribal engagement and consultation will occur early and throughout the recovery planning process. After a recovery plan is drafted, CDFW will offer a public review period and host at least one public meeting to receive comments and feedback for consideration in the final recovery plan.

As a recovery plan is implemented and threats to a species are managed or sufficiently minimized, the status of the species may improve enough to warrant delisting by the California Fish and Game Commission. Once recovered, continued attention, funding, and monitoring will serve to further benefit the species and secure its long-term persistence.

1 PURPOSE AND VISION

1.1 Purpose of Recovery Guidelines

In 2018, the California Endangered Species Act (CESA) was amended to give the California Department of Fish and Wildlife (CDFW) the authority to develop non-regulatory recovery plans for CESA-listed threatened and endangered species. The purpose of this document is to guide CDFW staff and other interested parties in CESA recovery planning and implementation tasks. It establishes CDFW's framework for developing recovery plans for California's threatened and endangered fish, wildlife, and plant species, which includes a consistent approach that also provides flexibility to accommodate the unique circumstances of each species. This document also fulfills CDFW's legal obligation to develop recovery guidelines (**Box 1**).

Box 1. Fish and Game Code Standards for Recovery Planning.

Fish and Game Code Standards for Recovery Planning

Section 2079.1 of the Fish and Game Code provides the legal framework that CDFW must follow when developing a recovery plan. This guidance includes the following components:

a) Development and implementation of recovery plans are not required but may be undertaken when funding is available.

b) CDFW must prioritize the threatened or endangered species that are most likely to benefit from a recovery plan, particularly species with populations that may be significantly affected by changes in land use, climate, and/or aquatic conditions.

c) Recovery plans must be based on the best available science, and must include site-specific management actions, criteria for delisting, and estimates of the time and cost to achieve the delisting criteria.

d) CDFW may consider data and information from interested parties and the general public when developing and implementing a recovery plan.

e) CDFW may adopt a federal recovery plan with or without revisions.

f) CDFW must develop and adopt recovery guidelines to aid in the implementation of recovery plans.

g) At least one public meeting must be held to allow for input on the recovery guidelines and for each recovery plan within its recovery planning area (i.e., the region of the state where recovery actions will occur).

h) Recovery planning is not a regulatory process, so the development, adoption, or amendment of guidelines, criteria, or recovery plans does not require approval by the Office of Administrative Law.

1.2 Vision for Recovery Planning

CDFW's vision for recovery planning is to improve the status of threatened and endangered species such that their populations are conserved to the point that the protections afforded under CESA are no longer needed. Planning and implementation require significant investments of time and resources. To that end, CDFW recognizes that successful recovery planning relies on effective communication and strong partnerships with state and federal resource agencies, California Native American tribes, key landowners, researchers and academics, non-governmental organizations, and other interested parties. CDFW will work with partners throughout the recovery process, from planning to implementation, monitoring, recovery, and delisting. By working collaboratively, CDFW envisions recovery planning that is transparent, inclusive of diverse statewide perspectives, scientifically defensible, and conserves the biodiversity of California.

2 APPROACH TO RECOVERY PLANNING

Recovery planning for CESA-listed species consists of three parts, each represented by a separate primary document: (1) a scientific assessment, (2) a recovery plan, and (3) an implementation strategy (**Table 1**). This three-part approach is modeled on the recovery planning framework used by federal agencies. The assessment provides the best scientific information available on the species, threats to the species' existence, and relevant management considerations. Drawing from the scientific assessment, and any new information available to CDFW, a recovery plan is developed to establish the recovery criteria and actions, and to guide the long-term approach for delisting the species. Finally, an implementation strategy identifies specific tasks necessary to implement the actions outlined in the recovery plan. All three documents will be publicly available through CDFW's website.

2.1 Part 1: Scientific Assessment

The first step to recovery planning is conducting a scientific assessment of the species or identifying an existing assessment that will serve as a knowledge base for the development of a recovery plan. A scientific assessment is a comprehensive report that contains the best available scientific information on the CESA-listed species. Best available science for a species will include, but is not limited to, threats to its existence, Traditional Ecological Knowledge (TEK) shared with CDFW, and relevant management considerations. Species information should include life history, abundance and population trends, range and distribution, genetic variation and diversity, and habitat requirements. Threats may include, but are not limited to, habitat degradation and destruction, overexploitation, disease, climate change, non-native and invasive species, and other natural or anthropogenic factors. Examples of management considerations

that may be relevant include the current regulatory background (e.g., laws and permitting), gaps in data or species information, management of co-occurring species and habitat, tribal co-management, cultural significance, land ownership across the species' range, and existence of conservation easements and/or management plans.

Table 1. Summary of the major recovery planning documents (items marked with * are required by statute).

Document	Scientific Assessment	Recovery Plan	Implementation Strategy
Summary	Contains the best scientific information on a species and serves as the primary reference for the recovery plan	High-level recovery criteria and actions that are necessary to delist a species, along with the time and cost required to complete such actions	Adaptable document that provides specific tasks for achieving the recovery criteria listed in the recovery plan
Contents	Life history Abundance and population trends Range and distribution Genetic variation and diversity Habitat requirements Threats to the species Management considerations	Measurable recovery criteria* Site-specific management actions* Time and cost estimates for each action* Prioritization of recovery actions	Tasks needed to implement recovery actions Potential partners for implementation of each task Time and cost estimates for each task Prioritization of tasks

Existing documents that may serve as scientific assessments include state and federal status reviews, five-year reviews, and similar documents. CDFW-authored status reviews are completed during a species' CESA candidacy phase and, if listed, five-year reviews are completed as resources and staffing allow. Many CESA-listed species are also listed under the federal Endangered Species Act (ESA) and have federal status reviews, five-year reviews, and species status assessments. Other possible substitutions may include, but are not limited to, species management plans, conservation plans, or conservation strategies. Existing documents will be evaluated prior to use to assess if they contain the best available scientific information. If no other document satisfies the requirements of a scientific assessment, CDFW may initiate a five-year review or other

similar report to reassess the status of a species and inform the recovery plan. Having the flexibility to use multiple document types that meet the requirements of the scientific assessment will allow CDFW to more efficiently develop recovery plans without the need to initiate a new scientific assessment for each recovery plan.

2.2 Part 2: Recovery Plan

The recovery plan is a document that provides a long-term approach to recovering a species, with the goal of delisting. Critical components of a recovery plan include: (1) recovery criteria defining the conditions necessary for delisting, (2) recovery actions that will improve the status of the species such that it will meet those criteria, and (3) time and cost estimates for achieving recovery. Most often, a recovery plan will be focused on a single species, but when two or more listed species have shared habitat and threats, a multi-species recovery plan may be developed that addresses each species, as well as their shared needs (e.g., restoration or protection of their shared habitat or elimination of a shared threat). Multi-species recovery plans will contain recovery criteria and actions for each species individually, in addition to any ecosystem-based criteria for the species collectively.

Recovery plans will be developed with tribal and public input, including public review and comment periods for a draft plan and at least one public meeting. Public meetings will be held in the recovery planning area so affected and interested parties can ask questions and share their views on, and ideas for, the draft recovery plan. As the initial stewards in the management and conservation of California natural resources, California Native American tribes are important partners in the development of projects and plans. As such, CDFW is committed to engaging California Native American tribes early and often, and will provide additional presentations, meetings, consultations, and listening sessions when requested. After a recovery plan has been finalized or adopted by CDFW, substantive revisions to the criteria, actions, or time and cost estimates will be subject to public review.

2.2.1 Recovery Criteria

Recovery criteria are measurable thresholds that describe the condition of a recovered species and its ecosystem. When these thresholds have been met, the challenges faced by the species have been addressed and delisting may be warranted. Types of challenges that species face include threats-based, demographic, management and regulatory, or ecosystem-based (**Table 2**). Examples of recovery criteria addressing each type of challenge can be found in

Table 3. The criteria guide development of recovery actions.

Table 2. Recovery criteria address four main types of challenges that species and ecosystems face.

Challenge	Taxon Example	Delisting Criterion	Recovery Action
Threats-based	**Amphibian**—Southern distinct population segment of mountain yellow-legged frog (*Rana muscosa*)	Impacts to southern *Rana muscosa* due to recreational activity in occupied habitat are effectively managed, avoided, or minimized.[1]	Lessen threats associated with present or threatened destruction, modification, or reduction of the habitat or range.[1]
Demographic	**Marine invertebrate**—Black abalone (*Haliotis cracherodii*)	Black abalone populations are characterized by a broad distribution of size classes representing multiple cohorts that are stable at a representative subset of study sites over at least the past five years. Size classes should include small adults (i.e., 50 to 100 mm in shell length, or SL) and large adults (i.e., greater than 100 mm SL).[2]	Restore black abalone populations not currently meeting the demographic recovery criteria, by enhancing local populations and supporting natural recovery.[2]
Management and Regulatory	**Plant**—Ventura marsh milkvetch (*Astragalus pycnostachyus* var. *lanosissimus*)	Establish and maintain seed collections with sufficient material that they may be used for recovery efforts while not exhausting the seed bank supply or genetic diversity. New accessions are added to each of three approved institutions as new sites are established, and new seed is added so no accession is more than 15 years old.[4]	Collect seed and deposit accessions into a permanent conservation seed bank.[4]
Ecosystem-based	**Mammal**—Salt marsh harvest mouse (*Reithrodontomys raviventris*) and tidal marsh ecosystems	Reduction in extant perennial pepperweed (*Lepidium latifolium*) populations to less than ten percent cover (in and down-gradient of the high marsh-upland ecotone) for five years in each marsh complex described [in the recovery plan].[6]	Manage tidal marsh habitat to promote the recovery/conservation of covered species and other tidal marsh species.[6]

Type of Challenge	Description of Criteria
Threats-based	Sets targets for eliminating or reducing the negative impacts of key threats to the species.
Demographic	Identifies thresholds for important population parameters such as abundance, population growth rate, spatial distribution, genetic variation, and distribution of life-history stages.

Type of Challenge	Description of Criteria
Management and regulatory	Includes development of management plans and conservation measures, modifications to existing regulations and statutory framework, creation of new regulations, and outreach activities that are necessary for the long-term viability of the species up to and after delisting.
Ecosystem-based	Conserves or restores intact ecosystems that the species relies upon or may rely upon in the future.

2.2.2 Recovery Actions

Recovery actions are management actions that can be undertaken by CDFW or a partner, designed to meet one or more recovery criteria, and result in a reduction or elimination of the threats to a species, greater population stability, more effective management, and/or ecosystem improvements. When fully implemented, recovery actions are intended to meet all the species' recovery criteria that are listed in the plan.

Recovery actions provide strategic guidance and are detailed enough to direct implementation tasks, yet the mechanisms for how those actions will be achieved are presented in the implementation strategy. For example, a recovery action could be long-term demographic monitoring of a species, while the implementation strategy identifies which populations to monitor, the techniques to be used, timelines of monitoring, and the analyses to be conducted. Additional examples of recovery actions can be found in

Challenge	Taxon Example	Delisting Criterion	Recovery Action
Threats-based	**Amphibian**—Southern distinct population segment of mountain yellow-legged frog (*Rana muscosa*)	Impacts to southern *Rana muscosa* due to recreational activity in occupied habitat are effectively managed, avoided, or minimized.[1]	Lessen threats associated with present or threatened destruction, modification, or reduction of the habitat or range.[1]

Demographic	**Marine invertebrate**—Black abalone (*Haliotis cracherodii*)	Black abalone populations are characterized by a broad distribution of size classes representing multiple cohorts that are stable at a representative subset of study sites over at least the past five years. Size classes should include small adults (i.e., 50 to 100 mm in shell length, or SL) and large adults (i.e., greater than 100 mm SL).[2]	Restore black abalone populations not currently meeting the demographic recovery criteria, by enhancing local populations and supporting natural recovery.[2]
Management and Regulatory	**Plant**—Ventura marsh milkvetch (*Astragalus pycnostachyus* var. *lanosissimus*)	Establish and maintain seed collections with sufficient material that they may be used for recovery efforts while not exhausting the seed bank supply or genetic diversity. New accessions are added to each of three approved institutions as new sites are established, and new seed is added so no accession is more than 15 years old.[4]	Collect seed and deposit accessions into a permanent conservation seed bank.[4]
Ecosystem-based	**Mammal**—Salt marsh harvest mouse (*Reithrodontomys raviventris*) and tidal marsh ecosystems	Reduction in extant perennial pepperweed (*Lepidium latifolium*) populations to less than ten percent cover (in and down-gradient of the high marsh-upland ecotone) for five years in each marsh complex described [in the recovery plan].[6]	Manage tidal marsh habitat to promote the recovery/conservation of covered species and other tidal marsh species.[6]

Table 3.

Recovery actions are ranked (low, medium, high) to indicate the action's priority for recovery planning. High priority actions are defined as those that are urgently needed to prevent extinction or halt further decline. Medium priority actions are those that must be taken to prevent declines in species abundance or habitat quality or other significant negative impacts. Low priority actions are those that generally contribute to the recovery of the species or ecosystem.

2.2.3 Time and Cost Estimates

Recovery plans must include estimates of the time and cost required to achieve each recovery action. Collectively, these action-specific estimates provide an overall time and cost estimate for the recovery of the species. Accurately predicting the time and cost required to achieve species recovery is challenging. Time to recovery assumes that all actions are fully funded and can be implemented. Cost estimates should be as accurate as possible when a plan is developed but will not account for inflation over time.

Estimating time and costs for recovery actions is facilitated by developing an implementation strategy concurrently with the recovery plan, when possible. An implementation strategy contains specific, tangible tasks for which time and costs can be estimated more accurately than for the more general, high-level recovery actions.

2.3 Part 3: Implementation Strategy

The final recovery planning document is the implementation strategy, which is an adaptable operational guide that breaks down each recovery action into more specific tasks. For each task, the implementation strategy may include a priority ranking (low, medium, high), time and cost estimates, and a list of potential implementation partners. Depending on the species, implementation strategies may vary in length and complexity. Examples of tasks can be found in

Table 3.

When possible, a draft implementation strategy should be included with the draft recovery plan during its public review phase. The implementation strategy includes the

Challenge	Taxon Example	Delisting Criterion	Recovery Action
Threats-based	**Amphibian**—Southern distinct population segment of mountain yellow-legged frog (*Rana muscosa*)	Impacts to southern *Rana muscosa* due to recreational activity in occupied habitat are effectively managed, avoided, or minimized.[1]	Lessen threats associated with present or threatened destruction, modification, or reduction of the habitat or range.[1]
Demographic	**Marine invertebrate**—Black abalone (*Haliotis cracherodii*)	Black abalone populations are characterized by a broad distribution of size classes representing multiple cohorts that are stable at a representative subset of study sites over at least the past five years. Size classes should include small adults (i.e., 50 to 100 mm in shell length, or SL) and large adults (i.e., greater than 100 mm SL).[2]	Restore black abalone populations not currently meeting the demographic recovery criteria, by enhancing local populations and supporting natural recovery.[2]
Management and Regulatory	**Plant**—Ventura marsh milkvetch (*Astragalus pycnostachyus* var. *lanosissimus*)	Establish and maintain seed collections with sufficient material that they may be used for recovery efforts while not exhausting the seed bank supply or genetic diversity. New accessions are added to each of three approved institutions as new sites are established, and new seed is added so no accession is more than 15 years old.[4]	Collect seed and deposit accessions into a permanent conservation seed bank.[4]
Ecosystem-based	**Mammal**—Salt marsh harvest mouse (*Reithrodontomys raviventris*) and tidal marsh ecosystems	Reduction in extant perennial pepperweed (*Lepidium latifolium*) populations to less than ten percent cover (in and down-gradient of the high marsh-upland ecotone) for five years in each marsh complex described [in the recovery plan].[6]	Manage tidal marsh habitat to promote the recovery/conservation of covered species and other tidal marsh species.[6]

tasks necessary to achieve each recovery action. Time and cost estimates for implementation tasks can inform the time and cost estimates required for the related recovery actions identified in the recovery plan.

An implementation strategy is intended to be a living document that can be modified over time based on new knowledge about a species and its threats and scientific advancements. Revisions to an implementation strategy can occur as needed, such as the addition, removal, or modification of implementation tasks or partners, or changes to the priority of tasks. However, revisions to an implementation strategy cannot create new recovery actions or modify existing actions without a revision of the recovery plan.

Table 3. Examples of delisting criteria, recovery actions, and recovery tasks for the four types of challenges a species might face. Each row is an example from a different taxon and references a federal recovery plan and implementation strategy. Each delisting criterion may have multiple associated recovery actions and recovery tasks.

Challenge	Taxon Example	Delisting Criterion	Recovery Action	Recovery Task
Threats-based	**Amphibian**—Southern distinct population segment of mountain yellow-legged frog (*Rana muscosa*)	Impacts to southern *Rana muscosa* due to recreational activity in occupied habitat are effectively managed, avoided, or minimized.[1]	Lessen threats associated with present or threatened destruction, modification, or reduction of the habitat or range.[1]	Address recreational impacts through continued monitoring at extant locations, use of closure orders, and public education.[1]
Demographic	**Marine invertebrate**—Black abalone (*Haliotis cracherodii*)	Black abalone populations are characterized by a broad distribution of size classes representing multiple cohorts that are stable at a representative subset of study sites over at least the past five years. Size classes should include small adults (i.e., 50 to 100 mm in shell length, or SL) and large adults (i.e., greater than 100 mm SL).[2]	Restore black abalone populations not currently meeting the demographic recovery criteria, by enhancing local populations and supporting natural recovery.[2]	Characterize juvenile recruitment habitat and develop survey protocols targeting juvenile abalone.[3]
Management and Regulatory	**Plant**—Ventura marsh milkvetch (*Astragalus pycnostachyus* var. *lanosissimus*)	Establish and maintain seed collections with sufficient material that they may be used for recovery efforts while not exhausting the seed bank supply or genetic diversity. New accessions are added to each of three approved institutions as new sites are established, and new seed is added so no accession is more than 15 years old.[4]	Collect seed and deposit accessions into a permanent conservation seed bank.[4]	Collect seed from each population every 3 years to be added to existing and new collections at seed banks.[5]
Ecosystem-based	**Mammal**—Salt marsh harvest mouse (*Reithrodontomys raviventris*) and tidal marsh ecosystems	Reduction in extant perennial pepperweed (*Lepidium latifolium*) populations to less than ten percent cover (in and down-gradient of the high marsh-upland ecotone) for five years in each marsh complex described [in the recovery plan].[6]	Manage tidal marsh habitat to promote the recovery/conservation of covered species and other tidal marsh species.[6]	Control or eradicate *Lepidium latifolium*.[6]

2.4 Prioritization of Species for Recovery Planning

Due to limited resources and the number of CESA-listed species, CDFW prioritizes species for recovery planning using a consistent approach. High priority is given to species that are most likely to benefit from a recovery plan, especially those with populations that may be significantly affected by changes in land use, climate, and/or aquatic conditions. CDFW ranks species based on biological considerations including population size and trend, range size and distribution, and vulnerability to threats and climate change. Other considerations may include the availability of relevant species information, tribal and cultural significance/importance, the existence of a federal recovery plan, staff capacity, and the level of involvement or commitment from California Native American tribes and other partners and interested parties.

3 RECOVERY PLAN DEVELOPMENT AND IMPLEMENTATION

Contributions from diverse perspectives facilitate the development of comprehensive recovery plans that outline the species' needs and establish realistic, long-term management recommendations. Successful species recovery will require extensive collaboration with partners from many organizations working diligently over time. CDFW invites California Native American tribes and all other interested parties to participate in recovery planning, including providing feedback and information, serving on recovery teams, and implementing specific recovery actions and tasks.

CDFW recognizes the significant role that tribal communities have in recovering threatened and endangered species and invites California Native American tribes to partner in the recovery process and to share knowledge (including TEK), perspectives, management recommendations, and other information to be integrated into recovery planning. Tribal engagement will occur early and throughout the recovery planning process, ensuring tribes have the opportunity to be involved at their desired capacity. Types of engagement include consultations, roundtable and listening sessions, webinars, and informational meetings with both federally and non-federally recognized tribes. Based on a species' known distribution, CDFW will contact all tribes that have overlapping cultural or traditional affiliation to the area(s), as identified by the California Native American Heritage Commission, as well as any other tribes that have expressed interest in the species or in areas that overlap with the species' distribution. CDFW will consider the tribal and cultural significance of a species when developing a recovery plan.

3.1 Initiation of Recovery Plans

CDFW will initiate recovery plans for CESA-listed species as resources allow. For each species that has been selected, CDFW will actively seek feedback, new data, and

information from partner agencies, species experts at academic institutions, non-governmental organizations, California Native American tribes, and tribes and partners in neighboring states when appropriate. CDFW will post a notice of initiation and request for information using its recovery planning website, subscriber email distribution list, and tribal notifications per the CDFW Tribal Communication and Consultation Policy. Public outreach efforts may also include public events, digital handouts, social media posts, and media interviews.

3.2 Recovery Teams

Recovery teams are working groups that will be tasked with reviewing the available information related to a species' status and threats; crafting a recovery plan with criteria, actions, and time and cost estimates; and drafting and reviewing an implementation strategy. A team will typically consist of five to eight people invited by CDFW who have knowledge of, or interest in, the target species; possess relevant expertise or resources important for species recovery; and/or represent an entity that will have an integral role in the recovery of the species. CDFW will prioritize representation of California Native American tribes on recovery teams to ensure that the participation of tribes and assessment of cultural resources in the recovery planning area. CDFW staff will be responsible for leading each recovery team, providing oversight, and guiding the plan through the approval process. Together, the team will initiate long-term planning for the species, set priorities, and coordinate recovery efforts. For species dually listed under CESA and the federal ESA, the Department may coordinate with federal agency partners to create recovery plans that meet both CESA and ESA requirements.

Serving on a recovery team is a commitment to both the species and the other team members. Expected timelines, level of participation, frequency of meetings, and other time commitments will be discussed by the potential team prior to establishment. The anticipated time commitment will vary based on several factors, including the amount of information available on the species, the number of team members involved, and the size of the species' range.

3.3 Adopting Federal Recovery Plans

Many CESA-listed species are also listed under the federal ESA and may already have federal recovery plans and implementation strategies. CDFW has the discretion to adopt a federal recovery plan with or without revisions. To determine if a federal recovery plan may qualify for adoption, CDFW will evaluate whether it is consistent with Fish and Game Code section 2079.1 (see Box 1), would effectively recover the species within California, and reflects the best scientific information on the biology, threats, and needs of the species.

In some cases, CDFW may adopt a modified version of a federal plan as a CESA recovery plan. Modifications may be warranted if, for example, the species' distribution is not restricted to California and some of the criteria or actions to be implemented in the federal recovery plan occur in other states, or if there is newly available information that renders an action and/or criterion out of date. Revisions will be summarized and incorporated into the state plan. Whenever CDFW adopts a federal plan as its own (with or without modifications), the plan will be made available for public review prior to being adopted as a CESA recovery plan.

3.4 Public Meetings

After completion of a draft recovery plan or the proposed adoption of a federal plan, with or without revisions, CDFW will host at least one public meeting in the recovery planning area. These meetings will provide a venue for interested parties to view a presentation on the draft recovery plan and to share comments and feedback on the draft plan. CDFW will announce each public meeting and post the draft plan on its recovery planning website at least 30 calendar days before the meeting. Additionally, the meeting announcement, draft plan, and instructions on how to submit comments will be sent to California Native American tribes, partner agencies, researchers, non-governmental organizations, email distribution list subscribers, and others who have expressed interest.

Public meetings will be planned with accessibility in mind. Meetings will have both in-person and virtual participation options and be held in areas with nearby lodging. CDFW may host more than one meeting for species with broad ranges or with a high level of public interest. In addition to the opportunity to voice comments during the meeting, there will be open comment periods of at least 30 days before and 30 days after the meeting(s). All input received during the comment periods will be reviewed and considered during the development of the final recovery plan.

3.5 Approval of Recovery Plans

Recovery plans require several levels of review prior to formal adoption. CDFW is organized into seven regions and is headquartered in Sacramento. Each recovery plan will require review by the appropriate headquarters program as well as the region(s) where the species occurs and/or where the recovery actions will be implemented. Final recovery plans will be approved by the CDFW Director or designee, posted on the recovery planning website, and distributed through CDFW's CESA Recovery Planning email distribution list and statewide tribal contact list. In some instances, CDFW may also distribute news releases, fact sheets, or other outreach materials on the final recovery plan, especially for highly visible, wide-ranging, or controversial species.

3.6 Implementation, Management, and Monitoring

As planning documents are finalized and approved, a recovery team will transition from a planning phase to an implementation phase. Team composition will likely shift and grow with the inclusion of new partners focused on carrying out specific aspects of the implementation strategy. Ongoing partnership and co-management with tribes during the implementation phase will provide awareness of and identify ways to protect cultural resources, sacred sites, and ceremonial areas. As tasks are implemented by the recovery team or partners, all CDFW policies and relevant cultural and environmental regulations will be followed. In addition to actively working on tasks and actions, the team can build support for the recovery of a species by conducting outreach, acquiring funds and other resources to increase capacity for completing tasks, and coordinating with CDFW programs involved in species conservation.

A recovery team in the implementation phase should meet at regular intervals to discuss team priorities, management strategies, progress towards species recovery, and next steps. In many cases, the on-the-ground management of a species may need to be adjusted over time to find an effective strategy. This adaptive management approach provides flexibility to practitioners, allowing recovery actions to be addressed even when there might be some uncertainty around how a species will respond to the implementation of the recovery plan. Continuous and ongoing species monitoring provides feedback on the effectiveness of recovery actions. If recovery actions are not having the expected outcome, a team may re-evaluate the implementation strategy, and possibly the recovery plan, to identify any areas that could be revised to accelerate species recovery.

3.7 Reviewing Species Status and Meeting the Goal of Recovery

Progress towards recovery can be evaluated with a five-year species review that formally assesses the species' status. Annual reports may be available for ongoing species monitoring and population recovery or habitat restoration projects. The recovery team can also use species assessment tools such as the trend ranks provided by CDFW's California Natural Diversity Database, which describe whether a population is increasing, stable, decreasing, or fluctuating based on census and survey data submitted by CDFW staff, tribes, partners, and other biologists.

As recovery criteria are met, and threats to the species are managed or sufficiently minimized, the status of the species may improve enough to warrant delisting. The CESA delisting process mirrors the listing process such that CDFW or other interested parties may petition the California Fish and Game Commission (Commission) to delist the species. If the Commission decides delisting may be warranted, CDFW must complete a status review that includes a science-based recommendation on whether to

delist the species. Following a public engagement process, the Commission may vote to delist the species. Once recovered, continued interest, attention, funding, and monitoring of the species will serve to further benefit the species and secure its long-term persistence.

ACKNOWLEDGEMENTS

These guidelines were prepared by:

Raffica La Rosa, CESA Recovery Coordinator
Native Plant Program, Habitat Conservation Planning Branch

Austin Roy, CESA Recovery Coordinator
Wildlife Diversity Program, Wildlife Branch

Chenchen Shen, CESA Recovery Coordinator
Anadromous Fishes Conservation and Management Program, Fisheries Branch

Robin Shin, CESA Recovery Coordinator
Native Fishes Program, Fisheries Branch

Dylan Stompe, CESA Recovery Coordinator
Ocean Salmon Project, Marine Region

LITERATURE CITED

1. U.S. Fish and Wildlife Service. 2018. Recovery Plan for the southern California distinct population segment of the mountain yellow-legged frog. U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. iv + 24 pp.

2. National Marine Fisheries Service. 2020. Final Endangered Species Act Recovery Plan for Black Abalone (*Haliotis cracherodii*). National Marine Fisheries Service, West Coast Region, Protected Resources Division, Long Beach, CA 90802.

3. National Marine Fisheries Service. 2023. Black Abalone Recovery Plan: Five-Year Recovery Implementation Strategy (RIS). National Marine Fisheries Service, West Coast Region, Protected Resources Division, Long Beach, CA 90802.

4. U.S. Fish and Wildlife Service. 2023. Ventura Marsh Milk-Vetch (*Astragalus pycnostachyus* var. *lanosissimus*) Recovery Plan. U.S. Fish and Wildlife Service, Pacific Southwest Region. Ventura, California. 12 pp.

5. U.S. Fish and Wildlife Service. 2023. Ventura Marsh Milk-Vetch (*Astragalus pycnostachyus* var. *lanosissimus*) Recovery Implementation Schedule. U.S. Fish and Wildlife Service, Pacific Southwest Region. Ventura, California. 8 pp.

6. U.S. Fish and Wildlife Service. 2013. Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California. Sacramento, California. xviii + 605 pp.