



Environmental Mitigation Program Working Group

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**Tuesday, September 8, 2020
1 to 3 p.m.**

****Teleconference Meeting****

Agenda Highlights

- **Ad Hoc Committee Recommendation: FY 2021-2022 Work Plan and FY 2021 Annual Funding**
- **Ad Hoc Committee Request for Land Management Grant Criteria Review**

MEETING ANNOUNCEMENT AMIDST COVID-19 PANDEMIC:

The Environmental Mitigation Program Working Group (EMPWG) meeting scheduled for Tuesday, September 8, 2020, will be conducted virtually in accordance with Governor Newsom’s State of Emergency declaration regarding the COVID-19 outbreak, Executive Order N-29-20, and the Guidance for Gatherings issued by the California Department of Public Health. Working Group Members will primarily participate in the meeting virtually, while practicing social distancing, from individual remote locations. This meeting will be held via Zoom. There are a few ways for you to participate in the meeting.

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The 18 cities and county government are SANDAG serving as the forum for regional decision-making. SANDAG builds consensus; makes strategic plans; obtains and allocates resources; plans, engineers, and builds public transit; and provides information on a broad range of topics pertinent to the region's quality of life.

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Environmental Mitigation Program Working Group

Tuesday, September 8, 2020

Item No.		Action
1.	Welcome and Introductions	
+2.	Approval of Meeting Minutes The Environmental Mitigation Program Working Group (EMPWG) is asked to review and approve the minutes from its June 9, 2020, meeting.	Approve
3.	Public Comments/Communications/Member Comments Members of the public shall have the opportunity to address the EMPWG on any issue within the jurisdiction of SANDAG that is not on this agenda.	
Reports		
+4.	Ad Hoc Committee Recommendation: FY 2021-2022 Work Plan and FY 2021 Annual Funding <i>Kim Smith, SANDAG</i> <i>Susan Wynn, U.S. Fish and Wildlife Service</i> The EMPWG formed an ad hoc committee to review and recommend updates to the FY 2021-2022 Work Plan for regional management and monitoring, and annual allocations of regional management and monitoring funding for FY 2021. Ms. Wynn chaired the ad hoc committee and will report out on the recommendations.	Recommend
5.	Ad Hoc Committee Request for Land Management Grant Criteria Review <i>Kim Smith, SANDAG</i> The EMPWG is asked to approve the formation of an ad hoc committee to review the last Land Management Grant criteria and process and make a recommendation for the 10th cycle.	Recommend
6.	Preserve Metrics <i>Dr. Kris Preston and Emily Perkins, SDMMPIU.S. Geological Survey</i> An overview of the framework for the draft report on Preserve Metrics will be presented.	Information
7.	Status of the San Elijo Lagoon Restoration Project and Other Mitigation Properties Conserved Under the Environmental Mitigation Program <i>Kim Smith, SANDAG</i> <i>Doug Gibson, Nature Collective</i> An overview of the status on the San Elijo Lagoon Restoration project will be presented. It is on schedule to complete construction by September 1, 2020. In addition, an overview of the restoration efforts at other Environmental Mitigation Program mitigation sites also will be presented.	Information

8. Upcoming Meetings

Information

The next EMPWG meeting is scheduled for Tuesday, December 8, 2020, at 1 p.m.

9. Adjournment

+ next to an item indicates an attachment



Environmental Mitigation Program Working Group

Item: **2**

September 8, 2020

Action: **Approve**

June 9, 2020, Meeting Minutes

Vice Chair LeAnn Carmichael (County of San Diego) called the meeting of the Environmental Mitigation Program Working Group (EMPWG) to order at 1:04 p.m.

1. Approval of Meeting Minutes (Approve)

Action: Upon a motion by Jim Whalen (Alliance for Habitat Conservation) and a second by Susan Wynn (U.S. Fish and Wildlife Service), the EMPWG approved the minutes from the March 10, 2020, meeting.

Yes: Bruce April (Caltrans), Kristin Forburger (City of San Diego), LeAnn Carmichael (County of San Diego), Matt Adams (Building Industry Association), Melanie Kush (City of Santee), Rebecca Fris (Wildlife Conservation Board), Robert Fisher [United States Geological Survey (USGS)], Rosanne Humphrey (City of Carlsbad), Scott Nespore (City of Poway), Trish Smith (The Nature Conservancy).

Abstain: Anne Harvey (San Diego Conservation Network), Hans Zin California Department of Fish and Wildlife), and Kirsten Winter (United States Forest Service).

Absent: Army Corps of Engineers, City of Chula Vista, City of La Mesa, City of Oceanside, Endangered Habitats League, and The San Diego Foundation.

2. Public Comments/Member's Comments (Discussion)

Winston Vickers (UC Davis) submitted a public comment to the Working Group prior to the meeting relating to the completion of mountain lion research and activity related to connectivity enhancement in San Diego and southern Riverside counties. This work was completed with funding from the NCCP-Local Assistance Grant Program and the EMP Program. The mountain lions in the Santa Ana Mountains and eastern Peninsular Range, as well as four other coastal subpopulations, have been petitioned for listing under the California Endangered Species Act as threatened, and that petition is currently in the status review process at the California Department of Fish and Wildlife. The Department has invited anyone with data or comments on the taxonomic status, genetics, life history, range, distribution, abundance, population trend, threats to their survival, habitat that may be essential for the species, management recommendations, or other factors related to the status of mountain lions in the proposed ESU, is hereby requested to provide such data or comments to the Department. Deadline for submissions is August 7, and can be emailed to Esther Burkett at esther.burkett@wildlife.ca.gov.

Vice Chair LeAnn Carmichael (County of San Diego) announced to the working group that SANDAG's *TransNet* Independent Taxpayer Oversight Committee (ITOC) is looking to fill one vacancy on the committee. If any of the working group members with experience in real estate, land economics, and/or right-of-way acquisition are interested, please submit an application by July 1, 2020, at sandag.org.

Reports

3. Request for Formation of an Ad Hoc Committee for FY 2021-2022 Work Plan and FY 2021 Annual Funding

Action: Upon a motion by Susan Wynn (U.S. Fish and Wildlife Service) and a second by Matt Adams (Building Industry Association), the EMPWG approved the formation of an Ad Hoc Committee to develop recommendations for the FY 2021-2022 Work Plan and FY 2021 Annual Funding.

Yes: Bruce April (Caltrans), Candance Wo (The San Diego Foundation), Kristin Forburger (City of San Diego), LeAnn Carmichael (County of San Diego), Melanie Kush (City of Santee), Michael Beck (Endangered Habitats League), Kristen Winter (U.S. Forest Service), James Whalen (Alliance for Habitat Conservation), Rebecca Fris (Wildlife Conservation Board), Robert Fisher [United States Geological Survey (USGS)], Rosanne Humphrey (City of Carlsbad), Scott Nesper (City of Poway), Trish Smith (The Nature Conservancy).

Abstain: None.

Absent: Army Corps of Engineers, City of Chula Vista, City of La Mesa, and City of Oceanside.

4. Habitat Conservation Vision (Kim Smith, SANDAG)

SANDAG staff gave a brief presentation on the development of a Habitat Conservation Vision and how this vision ties into the Regional Plan.

5. Preserve Metrics (Kim Smith, SANDAG)

An update on the progress and future timeline of the development of metrics to measure the health of the preserve system was presented.

6. Macrofaunal Index of Biotic Integrity – Identifying Management Options Across Watersheds (Dr. Robert Fisher, U.S. Geological Survey)

The U.S. Geological Survey has been working to integrate 20 years of stream survey data from watersheds across southern California to develop a proof of concept for implementing a regional macrofaunal index of biotic integrity (MIBI) for identifying habitat quality for watersheds. The biological parameters are then contrasted to various standards hydrological impairment scores for each watershed to develop management categories for regional prioritization of actions. These MIBI metrics can be monitored over time across the region to determine if improvement scores are being met and where actions may need re-prioritization.

7. Upcoming Meetings

The next Environmental Mitigation Program Working Group (EMPWG) meeting is scheduled for Tuesday, September 8, 2020, at 1 p.m.

8. Adjournment

Vice Chair LeAnn Carmichael (County of San Diego) adjourned the meeting at 2:43 pm.

Confirmed Attendance at SANDAG Environmental Mitigation Program Working Group Meeting

June 9, 2020

Jurisdiction	Name	Attended	Comments
City of La Mesa	Chair Kristine Alessio	No	
	Vacant		
County of San Diego	Vice Chair LeAnn Carmichael	Yes	
	Deborah Mosley	No	
City of San Diego	Kristin Forburger	Yes	
	Heidi VonBlum	No	
	Julia Chase	No	
City of Santee	Melanie Kush	Yes	
	Christina Rios	No	
City of Carlsbad	Rosanne Humphrey	Yes	
City of Oceanside	Jeff Hunt	No	
City of Poway	Scott Nespor	Yes	
	Oda Audish	No	
City of Chula Vista	Cheryl Goodard	No	
	Dai Hoang	No	
Army Corps of Engineers	Kyle Dahl	No	
	Michelle Lynch	No	
Caltrans	Bruce April	Yes	
	David Nagy	Yes	
Department of Fish and Wildlife	David Mayer	No	
	Hans Sin	Yes	
U.S. Fish and Wildlife Service	Susan Wynn	Yes	
	David Zoutendyk	No	
U.S. Forest Service	Kirsten Winter	Yes	
	Lance Criley	No	
U.S. Geological Survey	Robert Fisher	Yes	
	Carlton Rochester	Yes	
Wildlife Conservation Board	Rebecca Fris	Yes	
	John Walsh	No	
Endangered Habitats League	Michael Beck	Yes	
	Scott Grimes	No	
San Diego Conservation Network	Anne Harvey	Yes	
	Vacant		
The Nature Conservancy	Cara Lacey	No	
	Trish Smith	Yes	

Jurisdiction	Name	Attended	Comments
The San Diego Foundation	Candace Wo	Yes	
	Cami Mattson	No	
Alliance for Habitat Conservation	James Whalen	Yes	
	Tyler Martin	No	
Building Industry Association	Matt Adams	Yes	
	Vacant		
Other Attendees			
Kris Preston	SDMMP		
Sarah McCutcheon	SDMMP		
Winston Vickers	UC Davis		
Emily Perkins	SDMMP		
Michelle Blake	Caltrans		
Christian Braudrick	UC Riverside		
Terah Donovan	Environmental Science Associates		
Daniel DuGal	General Atomics		
Shirley Innecken	Escondido Creek Conservancy		
Chris Jacobs	City of Santee		
Annabelle Bernabe	SDMMP		
Isabelle Kay	UC San Diego		
Bob Leiter	UC San Diego		
Dan Marschalek	SDSU		
Betsy Miller	San Bernardino Valley Water Conservation District		
Josephine Mitchell	Member of the Public		
Dan Moore	Member of the Public		
Katie Laybourn	Harris & Associates		
Bill Tippetts	Member of the Public		
Bruce Orr	Member of the Public		
Kai Palenscar	U.S. Fish and Wildlife Service		
Christopher Paulino	Viejas		
Emily Perkins	SDMMP		
Kendall Reynolds	SANDAG		
Jerre Stallcup	CBI		
Alanna Sullivan	Solana Center for Environmental Innovation		
Thomas Ciarmitaro	Viejas		



Environmental Mitigation Program Working Group

Item: **4**

September 8, 2020

Action: **Recommend**

Ad Hoc Committee Recommendation: FY 2021-2022 Work Plan and FY 2021 Annual Funding

Overview

In June, the Environmental Mitigation Program Working Group (EMPWG) formed an ad hoc committee to review and recommend updates to the FY 2021-2022 Work Plan for regional land management and monitoring and propose an annual funding allocation for FY 2021.

Key Considerations

The *TransNet* Extension Ordinance and Expenditure Plan, approved by voters in 2004, includes the Environmental Mitigation Program (EMP), which provides funding to mitigate habitat impacts from regional and local transportation projects and provides funding for regional land management and biological monitoring.

Each year, the Board of Directors allocates \$4 million toward implementation of regional land management and biological monitoring pursuant to a Memorandum of Agreement (MOA) with state and federal agencies on the implementation of the EMP. A MOA that implements the next ten years of the EMP was adopted by the Board on February 22, 2019.

The two-year Work Plan for FY 2021-2022 is based on the objectives and priorities included in the [Management Strategic Plan \(MSP\)](#). This Work Plan outlines the overarching goals, areas of emphasis, and key milestones for regional management and monitoring. The proposed funding levels for FY 2021 are consistent with the adopted *TransNet* MOA.

Next Steps

Pending recommendation for approval from the EMPWG, the proposed budget for FY 2021 totaling \$4 million will be presented to the Independent Taxpayer Oversight Committee (ITOC) and the Regional Planning and Transportation Committees for recommendation for approval to the Board in October 2021. Staff would implement the Work Plan with the approved budget for FY 2021.

Key Staff Contact: Kim Smith, 619-699-6949, kim.smith@sandag.org

- Attachments:
1. *TransNet* Environmental Mitigation Program: Regional Management and Monitoring FY 2021-2022 Work Plan
 2. Draft Ad Hoc FY 2021 Funding Allocation

***TransNet* Environmental Mitigation Program:
Regional Management and Monitoring FY 2021-2022 Work Plan**

Introduction

The *TransNet* Extension Ordinance and Expenditure Plan, approved by the voters in November 2004, includes the Environmental Mitigation Program (EMP), which provides funding to mitigate habitat impacts from regional and local transportation projects, and provides funding for regional land management and biological monitoring. The EMP is a unique component of the *TransNet* Extension Ordinance in that it goes beyond traditional mitigation for transportation projects by including a funding allocation for habitat acquisition, management, and monitoring activities to help implement the regional habitat conservation plans. This funding allocation is tied to mitigation requirements and the environmental clearance approval process for projects outlined in the Regional Transportation Plan and to implement the Habitat and Open Space policy objectives developed as part of San Diego Forward: The Regional Plan.

Each year, the Board of Directors allocates \$4 million to implement regional land management and biological monitoring pursuant to a *TransNet* Memorandum of Agreement with state and federal agencies on the implementation of the EMP. In 2013, a technical document entitled *Management Strategic Plan (MSP) for Conserved Lands in Western San Diego County* was developed to increase the efficient use of both the *TransNet* funding as well as other outside local, state, and federal funds. This plan was updated in 2017 to include monitoring and management objectives for 2017-2021 and is in the process of further updating to include objectives for 2022-2026. The MSP has several elements dealing with species management, wildlife connectivity, wildfires, and regional monitoring that will promote the purpose of the *TransNet* EMP. The MSP is available at: <https://sdmmp.com/portal.php>.

The purpose of the MSP is to identify a roadmap to prioritize actions that are needed to ensure the persistence of key wildlife species, maintain ecosystem processes, and maintain healthy natural communities in an efficient and integrated manner across the region in the context of a changing ecosystem due to wildfires, habitat type conversion, and climate change.

The Independent Taxpayer Oversight Committee (ITOC) conducted an audit of the EMP in 2018 and recommended that the EMP develop metrics using the abundance of data to holistically understand the status and trend of the overall health of the Preserve System. The EMP Working Group and partners have been working since 2019 to develop these metrics using data collected from over the first 10 years of the program and in conjunction with data that will be collected during the 2021-2022 workplan, described below.

Table 1, on page 13, of the FY 2021-2022 Work Plan, identifies the funding needs to implement these efforts in FY 2021.

FY 2021-2022 Strategic Goals and Areas of Emphasis

To guide the development of the annual allocation of regional management and monitoring funds, a set of strategic goals have been approved by the Board of Directors to implement the MSP. These strategic goals identify long-term areas of achievement that should remain relatively unchanged on an annual basis. Supporting these strategic goals are the areas of emphasis and achievement milestones, which will be updated each year to highlight particular areas of focus for the coming year and as a measure of success.

Strategic Goals

- 1. Promote key sensitive species** persistence and resiliency through management actions to prevent extirpation and extinction.
- 2. Promote native vegetation communities** persistence and resiliency through the development and implementation of strategies to maintain and increase habitat quality.
- 3. Improve wildlife movement** through the identification of critical linkage areas and implementation of strategies to enhance the physical and genetic connectivity of species across rural and urban landscapes.
- 4. Promote regional coordination** through the facilitation and coordination with existing land management efforts, development of best management practices, and leverage existing funding.

Areas of Emphasis and FY 2021-2022 Milestones

The highest priority for SANDAG during FY 2021-2022 is to develop metrics describing the state of the preserve that clearly communicate progress in managing the preserve system and are relevant and interesting to the general public, decision makers, and partners. The second highest priority is to build off prior work to continue with monitoring and management of species and their habitats, while reducing threats and increasing collaboration and use of best practices across the region.

1.0 Promote Key Sensitive Species.

1.1 Priority Rare and Endemic Plants Recovery

There are 68 rare plant species included in the most recent update of the MSP (2022-2026). The MSP identifies 46 species requiring species-specific monitoring and management actions as they may be entirely lost from San Diego County, have significant occurrences that could be lost, or may need management to ensure persistence. An additional 17 species are the focus of vegetation monitoring and management and 5 low priority species may benefit from management for other species and vegetation communities. During 2021-2022 there are 34 species with species-specific regional monitoring and/or management objectives and 12 species that will be included in vegetation monitoring (see Section 2.1, below).

Achievement Milestones FY 2021-2022

- Continue to work with contractor and land managers to coordinate and implement regional **rare plant “Inspect and Manage” (IMG)** monitoring for 15 species in 2021 and 13 species in 2022. IMG monitoring was initiated in 2014 to document status, habitat and threats for known occurrences of priority rare plant species. Work with land managers and contractor to conduct **baseline surveys** to find new populations for 4 MSP priority rare plants in 2021, and 4 in 2022.
- Analyze **rare plant monitoring data** collected in years 2014-2022. Provide recommendations for monitoring and management actions for land managers.
- Coordinate with Marine Corps Air Station Miramar on the results of their **willow monardella** demographic monitoring and hydrologic studies; develop assessments at current and historic locations and suitable habitat on Conserved Lands to address the effects of hydrologic modification on the species and the potential for expansion of occurrences; and use this information to design future surveys for this species.

- **Implement high priority management actions** for 7 **rare plant species** included in the MSP Framework Rare Plant Management Plan and the MSP Seed Collection, Banking and Bulking Plan. For species not yet included in the plans, continue to implement management actions identified as priorities based on IMG data and conservation seed banking and management needs.
- Continue to work with San Diego Zoo Global’s Native Seed Bank and land managers to prioritize **rare plant seed collection** for conservation banking and for bulking to provide seed for management projects.

1.2 **Priority 1 Vertebrates Recovery**

The MSP covers 54 vertebrate species and identifies 31 high priority species requiring species specific management as they could either be entirely lost within San Diego County, have significant occurrences that could be lost, or may need specific management to ensure persistence. Another 7 species are included as priorities for vegetation focused (VF) monitoring and management, and 16 lower priority species will benefit indirectly from management activities. Sixteen of these 54 rare vertebrate species have been prioritized for regionally supported FY 2021-2022 vertebrate recovery management. Eleven species have regional species-specific monitoring and/or management objectives and 5 species will be surveyed for during vegetation monitoring (see Section 2.1, below).

Achievement Milestones FY 2021-2022

Amphibians

- Continue coordinating and implementing region-wide **arroyo toad** surveys based on the regional monitoring strategy developed by U.S. Geological Survey (USGS). Collect additional genetic material for analysis. Finalize monitoring plan based on sampling design and protocol developed for 2020 regional surveys. Continue supporting land managers on the implementation of priority management actions.
- Prepare a regional **western spadefoot toad** monitoring plan with protocol and sampling design that can be conducted in conjunction with vernal pool and other wetlands monitoring. Prepare a management plan to enhance and create western spadefoot habitat. Refine model to inform development of management and monitoring areas for toads.
- Prepare a regional **coast newt** monitoring plan with protocol and sampling design that can be conducted in the limited riparian areas of the county where this species occurs.

Reptiles

- Continue to monitor and enhance occurrences of previously translocated **southwestern pond turtles** at Sycuan Peak Ecological Reserve (Sweetwater watershed), Rancho Jamul Ecological Reserve (Otay watershed), and Wheatley Preserve (San Dieguito River watershed). Identify, manage, and translocate southwestern pond turtles to an additional site in the San Diego River watershed to build the population to sustainable levels.

Birds

- Continue to support management of cactus nurseries, **coastal cactus wren** habitat restoration, and fire management to protect cactus wren habitat in North and South County.
- Update the 2015 **coastal cactus wren** habitat conservation and management plan with recommendations from the 5-year cactus wren reproduction, foraging, and habitat study and expand to include all occurrences on conserved lands in the MSPA.
- Prepare a **coastal cactus wren** regional monitoring plan with sampling design, protocols and monitoring frequency. Continue to conduct surveys and assess habitat conditions on Conserved Lands in western San Diego County.
- In 2021 and 2022 prepare **golden eagle** monitoring and management plans. Include recommendations from the five-year comprehensive golden eagle movement, foraging, nesting and genetics study.
- Prepare **southwestern willow flycatcher** monitoring plan and continue surveys along the San Luis Rey River and additional watersheds with the potential to support the species. Develop and implement management recommendations from the five-year reproductive monitoring study.
- Continue to provide technical support to implement priority management actions for the **western burrowing owl** as identified in the management plan completed in 2017.
- Working with partners, participate in the statewide **tricolored blackbird** survey effort to document presence/absence, estimate numbers, and characterize habitat. Prepare a tricolored blackbird management plan in coordination with land managers and other partners to enhance habitat and determine other management needs.
- Survey for breeding **northern harriers** and document breeding status, habitat and threat conditions. Work with partners to prepare a northern harrier management plan.
- Coordinate with land managers to survey for breeding **loggerhead shrikes** and document habitat characteristics and threats.
- Work with wildlife agencies, species experts, and land managers to support monitoring and management actions for **western snowy plover**, with particular focus on improving the quality of beach habitats used by wintering plovers.
- Support recovery actions for **light-footed Ridgway's rail**, including developing a monitoring plan, conducting a genetics study, continuing captive propagation efforts, and enhancing and restoring nesting habitat.

Mammals

- Support land managers in the implementation of priority management recommendations for roosts and foraging sites from the Bat Management Plan that includes specific measures for **Townsend's big-eared bat** and **pallid bat**.

1.3 Priority 1 Invertebrates Recovery

The updated MSP has identified nine rare invertebrate species that could be entirely lost within San Diego County. Another two species are included as priorities for vegetation focused management (see section 2.1, below). During 2021 and 2022, there are monitoring and management objectives for all 11 invertebrate species.

Achievement Milestones FY 2021-2022

- Continue **Hermes copper butterfly** monitoring and habitat assessments to document status and assess habitats and threats. Continue implementing translocations and monitoring effectiveness and develop best management practices for captive collection of eggs. Implement high priority management actions from the management plan. Work with partners to develop and implement a monitoring plan that will track long term status, habitat and threats to this species.
- Conduct **Harbison dun skipper** host plant, adult, larval and hibernation surveys and habitat assessments. Implement high priority management actions from the management plan.
- Continue to support surveys for **Quino checkerspot butterfly** and mapping the host plant distribution to develop a metapopulation model guiding development of a monitoring plan and identifying management opportunities to increase connectivity and enhance populations. Prepare a Quino Habitat Checkerspot butterfly monitoring plan and a management plan and implement high priority actions. Develop and include in MSP Seed Collection, Banking and Bulking Plan a section for Quino checkerspot forbs, and host plants and implement to restore habitat. Support U.S. Fish and Wildlife Service (USFWS) efforts to captive rear larvae and translocate to reestablish and augment wild populations.
- Develop and begin implementing a **Thorne's hairstreak** monitoring plan based upon previous monitoring efforts in 2009-2012. Coordinate with updating of Tecate cypress maps and mortality assessment.
- Support the wildlife agencies and partners in species recovery efforts for **Laguna Mountain skipper**. These include monitoring, collecting eggs from gravid females in the wild and lab, and establishing a translocated population in historic habitat on Laguna Mountain.
- Prepare a section for surveying **Crotch's bumble bee** in the pollinator community monitoring plan. Implement surveys for this species in conjunction with pollinator community monitoring associated with coastal sage scrub, chaparral, and grassland vegetation monitoring.
- Provide technical support to land managers for implementation of vegetation and species monitoring and management for vernal pool invertebrate species, **San Diego fairy shrimp** and **Riverside fairy shrimp** (and western spadefoot toad where suitable conditions are present).

1.4 General Stressors and Threats Management

There are numerous existing and newly emerging threats in the San Diego region that need on-going management for the long-term persistence of native species (see Vol 2 of MSP).

Achievement Milestones FY 2021-2022

- Provide technical support for the management of tern sites at Mission Bay Park to support successful breeding of **California least tern**. Work with wildlife agencies, land managers, and other partners to improve predator control, including identifying a place to temporarily house birds of prey removed from tern colonies.
- Provide technical support for the eradication of **feral pigs** in San Diego County.
- Implement high priority management actions identified in the **Invasive Animal Strategic Plan**. Complete and implement an invasive animal database and early detection rapid response system.
- In collaboration with statewide efforts, continue to provide funding for **shothole borer-Fusarium complex** monitoring, management, and research and education to formulate and implement management actions. Include riparian bird community monitoring to document effects of shothole borer-Fusarium complex on breeding birds.
- Implement management actions based on the recommendations from the completed **Argentine ant** and **urban runoff** studies. Continue monitoring water flows and climatic data to inform the Aquatic Index of Biological Integrity. Prepare a comprehensive hydrology management plan.
- Provide technical assistance to **model habitat suitability for MSP species** under alternative future climate change scenarios. Conduct a spatially explicit **vulnerability assessment** of potential climate change impacts to Conserved Lands across the MSP area. Model response of animal occurrences to climate variability.

2.0 Promote Native Vegetation Communities.

2.1 Vegetation Community Monitoring and Recovery

Vegetation communities serve as habitat for priority plant and animal species and as surrogates for ecosystem health. Changes in the vegetation communities due to fires, invasive species, droughts, climate change, and other factors may be causing a landscape level change to these communities.

Achievement Milestones FY 2021-2022

- Continue to develop and implement **regional vegetation monitoring** strategy to determine ecological integrity of coastal sage scrub, chaparral, and grassland in the San Diego region. Continue development and evaluation of the remote imagery and Lidar based **ecological integrity landscape model to detect change in shrub and invasive grass** cover over time. Complete and implement long-term monitoring plan for coastal sage scrub, chaparral and grassland vegetation that includes surveying VF plant and animal species (11 rare plant species, Blaineville's horned lizard, Bell's sparrow, grasshopper sparrow, San Diego black-tailed jackrabbit).
- Complete **ecological integrity landscape model** based on Lidar and remote imagery to identify levels of **tree mortality** over time for **riparian** and **oak woodlands**. Develop long-term oak woodland and riparian forest and scrub monitoring plan that includes sections for VF plant and animal species (two-striped garter snake, yellow-breasted chat) associated with these communities.

- Initiate development of a combined **salt marsh, foredune, beach, salt pan and coastal strand vegetation monitoring plan** that includes sections for VF animal species (Coulter’s saltbush, southern tarplant, wandering skipper, Belding’s savannah sparrow). Prepare sections for surveying **tiger beetles** in this vegetation monitoring plan.
- Initiate development of a **grazing monitoring plan** and implement the study in collaboration with researchers, land managers and other partners to evaluate the use of grazing as a large-scale management tool. Assess effectiveness of grazing to reduce fire risk, control invasive non-native grasses and forbs and restore ecological integrity, and benefit MSP species in coastal sage scrub and grassland habitats.

2.2 Pro-active Wildfire Planning and Management

Large wildfires in 2003 and 2007, plus more recent smaller wildfires, have severely impacted populations of key species identified as critical by the MSP and their habitats. Management action to reduce threats pre- and post-fire and during suppression need to be implemented.

Achievement Milestones FY 2021-2022

- Support preparation of a **Fire Ignition Reduction Plan** with specific recommendations to prevent wildfire ignitions affecting Conserved Lands in the MSP area.
- Develop a regional MSP **Resource Avoidance Areas Map** integrated into fire agencies’ Wildland Fire Decision Support Systems and preparation of Preserve Fire Management Plans for Conserved Lands.
- Support establishment of a **Wildland Fire Resource Advisor Program** for locally owned lands that integrates with federal and state programs.

2.3 Invasive Plant Species Management

Invasive plants pose a threat to existing native plants and increase the risk of wildfires by changing the natural ecosystem. In 2012, an Invasive Plant Strategic Plan was completed for managing invasive plant species in San Diego County.

Achievement Milestones FY 2021-2022

- Continue to work with the County of San Diego Department of Agriculture, Weights, and Measures to implement the Invasive Plant Strategic Plan Early Detection Rapid Response (EDRR) management for Level 1, 2 and 3 invasive plant species. Initiate work with invasive plant coordinator and contractor to implement regional management strategy for *Oncosiphon piluliferum* in priority areas, treatment of Level 3, 4 and 5 invasive plants at high priority MSP species occurrences, retreatment of *Arundo donax*, and treatment of EDRR shrub and tree species that are difficult to treat.

2.4 Updated Vegetation Mapping

Vegetation mapping of the County is essential for tracking changes in vegetation cover on Conserved Lands through time. A vegetation classification system was developed, and a vegetation map was produced for western San Diego County in 2012, with further refinements in 2014.

Achievement Milestones FY 2021-2022

- Update regional vegetation mapping for the MSP Area using vegetation community classification established in the 2014 vegetation map.

2.5 Enforcement

Non-authorized use of the preserve system continues to cause impacts to MSP species and their habitats and increase the costs of habitat maintenance and restoration.

Achievement Milestones FY 2021-2022

- Support preserve managers and landowners in enforcement of unauthorized activities on open space lands. Work with local jurisdictions to evaluate and promote opportunities to work with local law enforcement staff similar to efforts completed in FY 2017-2018 with cities of San Diego and Carlsbad.

2.6 Preserve Level Management Plan Standardization

Integration of the MSP goals and objectives into preserve level management plans will provide better coordination between regional and preserve level data collection and MSP land managers management and monitoring efforts.

Achievement Milestones FY 2021-2022

- No milestones are included in the FY 2021-2022 workplan at this time.

2.7 Land Management Implementation (e.g. grants)

The EMP Land Management Grant Program has been an important source of funding for implementing management actions to benefit MSP species and their habitats in the San Diego region.

Achievement Milestones FY 2021-2022

- Develop a 10th cycle of land management grants, focusing on implementation of the MSP goals, leading to a request for proposals in FY 2021.

2.8 Emergency Land Management Fund

An Emergency Land Management Fund has been established for use in large-scale emergency situations impacting MSP species and their habitats and or which known management options are available.

Achievement Milestones FY 2021-2022

- Make \$400,000 Emergency Land Management Fund available if needed.

3.0 Improve Wildlife Movement.

3.1 *Wildlife Corridor and Linkages Monitoring*

Species need to move to maintain population size and genetic diversity. In a landscape fragmented by urban development and linear infrastructure, restrictions to movement could result in a risk of extinction or extirpation.

Achievement Milestones FY 2021-2022

- Work with land managers to implement management actions based on the results of studies that evaluated the genetic connectivity of **horned lizards** throughout the MSP.
- Continue developing a long-term monitoring plan for **mountain lions** in the San Diego region to evaluate population trends. Collaborate with Orange and Riverside counties to improve regional connectivity. Implement high priority actions to improve mountain lion connectivity identified in the mountain lion linkage assessments for San Diego County. Test deterrent methods to reduce livestock losses in areas of the County with high depredation pressures.
- Work with partners to develop and implement a region-wide **camera monitoring strategy** for wildlife connectivity and linkage function. Develop a quantitative linkage monitoring plan.
- Continue the study begun in 2014 to determine the locations and movement of **American badgers** in western San Diego County, assess habitat and threats, and examine ways to improve badger connectivity and reduce mortality. Prepare a specific management plan with recommendations for badger habitat management and for connectivity enhancement within the Management Strategic Planning Area.
- Continue to support and work with partners to implement the existing **linkage improvement** recommendations from previous studies at prioritized locations in San Diego County.
- Support local efforts to implement the **State Route 94** and **SR 67** Wildlife Infrastructure Plans.
- In 2021, prepare a monitoring plan to survey **pollinator communities and assess ecological integrity** of pollinator functions in coastal sage scrub, chaparral, forblands, and grasslands across the MSPA.

4.0 Promote Regional Coordination.

4.1 – 4.5 *San Diego Management and Monitoring Program*

The San Diego Management and Monitoring Program (SDMMP.com) was established by SANDAG in 2008 to provide a regionally coordinated, scientific approach to management and biological monitoring of rare plant and animal species on Conserved Lands in San Diego County. The SDMMP is the first program of its kind to help bring cities, counties, wildlife agencies, military, consulting firms, education, and non-profit entities together to develop and implement regional land management and biological monitoring objectives across NCCP boundaries. The SDMMP is fully funded by SANDAG and is embedded with the San Diego Field Office of the USGS. There are currently five positions in the SDMMP, which include the Program Administrator, Management and Monitoring Coordinator, Senior Ecologist, Geographic Information System (GIS) Manager, and Data Manager.

Achievement Milestone FY 2021-2022

- Fund and fill the following positions as needed: SDMMP Program Administrator, Management and Monitoring Coordinator, Senior Ecologist, GIS Manager, and Data Manager.
- Implement the updated MSP and all incorporated strategic plan elements (Connectivity, Fire, Monitoring).
- Support the SDMMP and stakeholders in MSP implementation by creating and managing GIS viewers, maps and map layers, webpage content, data analysis, and databases.
- Collaborate with the military and other regional conservation planning programs to promote intra- and inter- regional habitat conservation planning in Southern California.
- Provide a quantitative and qualitative assessment on the status of regional management and monitoring efforts.
- Hold regular meetings with stakeholders to collaborate on regional management and monitoring projects.
- Provide regional science support and data analysis of regional management and monitoring data.
- Update and manage the Conserved Lands Database.
- Refine the output products of the regional database, increase availability of data sets to preserve managers, and provide pre-formatted data reports to interested stakeholders.
- Incorporate all data from regional biological assessments into the regional master occurrence database for analysis.
- Work with SANDAG and partners to develop regional metrics to track the health of the preserve system and present to the public.

4.6 Conserved Lands Database Management

The SDMMP has assumed management of the Conserved Lands Database under GIS Support.

Achievement Milestone FY 2021-2022

- Continue to update the Conserved Lands Database as more lands are acquired.

4.7 Administrative & Science Support

Achievement Milestone FY 2021-2022

- Provide regional science, technical support and data analysis of regional management and monitoring data and reports. Work with outside entity to develop regional metrics to track health of the preserve system and present to the public.

Draft Ad Hoc FY 2021 Funding Allocation

A	B	C	E	F	G
#	Strategic Goal	Approved Prior Years FY 06-20	Available Budget	Ad Hoc Recommendation	Comments
1	Promote key sensitive species				
1.1	Rare and Endemic Plant Monitoring and Recovery	\$2,215,000	\$97,000	\$370,000	Continue to facilitate monitoring by local jurisdictions and contract a consultant to fill the gaps in monitoring for FY 2021. Remaining funds will be used for seed collection and willow monardella hydrological assessments.
1.2	Vertebrate Monitoring and Recovery	\$8,500,935	\$240,780	\$622,220	Continue funding species habitat recovery. Increased the amount recommended by \$130,000 for additional support for the preparation of management and monitoring plans for the cactus wren and golden eagle. Increased funding to support the genetic analysis for cactus wren and added a task for the spadefoot toad to fill in survey gaps in San Diego County. Moving \$50,000 from Strategic Goal 4.6 (Conserved Lands Database) as efforts under this task are covered under Strategic Goal 4.4.
1.3	Invertebrate Monitoring and Recovery	\$1,378,535	\$0	\$130,000	Continue to work with contractors on rare butterfly monitoring and management.
1.4	Other Species Monitoring (Priority 2 species)	\$490,000	\$0	\$0	Phase out funding, no additional funding proposed.
1.4	General Stressors and Threats Management	\$1,885,000	\$0	\$245,000	Continue to work with partners to implement the Invasive Animal Management Plan. Work with partners to tie urban runoff studies and the Aquatic Index of Biological Integrity to be consistent with MS4 permits.
	Subtotal	\$14,469,470	\$337,780	\$1,367,220	
2	Promote native vegetation communities				
2.1	Vegetation Community Monitoring and Recovery	\$1,499,764	\$183,517	\$57,464	Continue with regional vegetation monitoring protocol development and testing. Initiate the development and implementation of a grazing plan in coordination with land managers. Increased funding recommendation by \$44,881 to support monitoring plan development to include VF species. Moving \$29,800 from Strategic Goal 4.6 (Conserved Lands Database) as efforts under this task are covered under Strategic Goal 4.4.
2.2	Pro-active Wildfire Planning and Management	\$3,100,000	\$351,377	\$0	No additional funding needed.
2.3	Invasive Plant Species Management	\$1,590,000	\$65,520	\$554,480	Continue to work with County of San Diego Agriculture to strategically reduce invasive species in the region. New funding of \$220,000 for Arundo retreatment and treatment of difficult to treat EDRR (Levels 1, 2 and 3) at priority sites.
2.4	Updated Vegetation Mapping	\$850,000	\$13,161	\$0	No additional funding needed. Start vegetation mapping in FY 2022.
2.5	Enforcement	\$1,200,000	\$347,299	\$0	No additional funding needed. Continue to work with local jurisdictions to start multiple pilot efforts.
2.6	Preserve level management plan standardization	\$450,000	\$27	\$0	No additional funding needed.

A	B	C	E	F	G
#	Strategic Goal	Approved Prior Years FY 06-20	Available Budget	Ad Hoc Recommendation	Comments
2.7	Land Management Implementation (e.g., grants)	\$18,110,000	\$1,400,000	\$1,000,000	Develop a 10th cycle of land management grants for \$2.4 million available to the jurisdictions to implement management consistent with MSP goals and objectives, leading to a request for proposals in FY 2021.
2.8	Emergency Land Management Fund	\$400,000	\$400,000	\$0	No additional funding needed.
	Subtotal	\$27,199,764	\$2,760,901	\$1,611,944	
3	Improve wildlife movement				
3.1	Wildlife Corridor and Linkages Monitoring	\$2,440,766	\$12,022	\$192,978	Continue to work with partners to implement regional wildlife movement monitoring using motion cameras. Increased funding recommendation by \$20,000 to support CDFW continued radio tracking of mountain lions for regional connectivity and monitoring plan development.
	Subtotal	\$2,440,766	\$12,022	\$192,978	
4	Promote regional coordination				
4.1	Program Administrator	\$2,200,000	\$429,449	\$0	No additional funding needed.
4.2	Management & Monitoring Coordinator	\$2,145,000	\$89,396	\$75,604	Continue to work under existing contracts for FY 2021.
4.3	Biologist	\$1,675,000	\$30,469	\$204,531	Continue to work under existing contracts for FY 2021.
4.4	GIS Support	\$1,642,000	\$97,717	\$203,283	Continue to work under existing contracts for FY 2021.
4.5	Database Development and Support	\$1,733,000	\$10,560	\$269,440	Continue to work under existing contracts for FY 2021.
4.6	Conserved Lands Database Management	\$275,000	\$78,290	\$0	No additional funding needed. Move \$50,000 to golden eagle under Strategic Goal 1.2 and \$28,290 to CSS vegetation monitoring plan under Strategic Goal 2.1.
4.7	Administrative & Science Support	\$1,220,000	\$177,958	\$75,000	Continue to work under existing contracts for FY 2021. Work with an outside entity to develop regional metrics to track the health of the preserve system and present to the public. Provide regional science, technical support and data analysis of regional management and monitoring data and reports.
	Subtotal	\$10,890,000	\$913,839	\$827,858	
	TOTAL FUNDING STRATEGY	\$55,000,000	\$4,024,542	\$4,000,000	