

**SAN CLEMENTE ISLAND ENDANGERED SPECIES ACT DELISTING
 NATURAL RESOURCES CONSERVATION – TEAM
 FY 2022–2023**

Introduction

Team: The United States (U.S.) Pacific Fleet (PACFLT) is pleased to submit the delisting project of five previously endangered and threatened species on San Clemente Island (SCI) for the 2024 Natural Resources Conservation – Team award category. The species delisted under the federal Endangered Species Act (ESA) in 2023 include one avian species and four plant species: San Clemente Bell’s sparrow (*Artemisiospiza belli clementeae*), formerly known as the San Clemente sage sparrow (*Amphispiza belli clementeae*); SCI bush-mallow (*Malacothamnus clementinus*); SCI larkspur (*Delphinium variegatum* ssp. *kinkiense*); SCI lotus (*Acmispon dendroideus* var. *traskiae*); and SCI paintbrush (*Castilleja grisea*). As the largest group delisting due to recovery in the 50-year history of ESA, this unprecedented conservation accomplishment highlights the strong partnership and teamwork between the Navy, the U.S. Fish and Wildlife Service (USFWS), and numerous cooperating agencies and institutions that have contributed to the Navy’s Natural Resources (NR) Program over many years. Building on decades of Navy stewardship that has resulted in major conservation gains, the Nominee Team made significant efforts in Fiscal Years 2022–2023 to achieve this delisting and secure the recovered status of these species into the future.

NOMINEE TEAM
Core Team
<p>PACFLT: Kimberly O’Connor, Conservation Program Manager Naval Base Coronado (NBC): Melissa Booker, SCI Wildlife Biologist; Bryan Munson, former NBC Botanist USFWS: Sandy Vissman, SCI Technical Lead; Bradd Bridges, Listing and Recovery Division Chief; Scott Sobiech, Field Supervisor Texas A&M Natural Resources Institute (NRI): Tiffany McFarland, Senior Research Associate/Species Status Assessment (SSA) Preparation Lead</p>
Partners
<p>Extended Team: Tammy Conkle, Naval Facilities Engineering Command (NAVFAC) Headquarters (HQ), Environmental Planning & Conservation Division Director; Mike Marshall, Texas A&M NRI, SSA Program Specialist; Bjorn Erikson, USFWS Pacific Southwest Region, Regional Recovery Coordinator; Ernest Chen, USFWS; Jacquie Rice, U.S. Marine Corps, HQ, and former U.S. Pacific Fleet Conservation Program Manager; Julie Simonsen, USFWS, Carlsbad Fish and Wildlife Office (CFWO), Post-Delisting Monitoring Plan (PDMP) SCI Plants Lead; Brendan Himelright, USFWS CFWO, PDMP Bell’s Sparrow Lead</p>
<p>Program Support: Chris Gillespie, NAVFAC Southwest; Deke Joralmon, NBC, SCI Environmental Operations Manager; Lisa Ordoñez, Naval Information Warfare Center (NIWC) Pacific; Leslie Bolick, NIWC Pacific; Sula Vanderplank, San Diego State University (SDSU); Julie Lambert, SDSU; Jon Rebman, San Diego Natural History Museum; Jason Koontz, Augustana College; Rob Wolf, Tierra Data, Inc.; Susan Meiman, Institute for Wildlife Studies (IWS), Bell’s Sparrow Project Manager; Dave Garcelon, IWS</p>
HISTORIC CONTRIBUTORS
<p>Kelly Ebert, Office of the Chief of Naval Operations (OPNAV) N4I, NR Program Lead (retired); Jan Larson, U.S. Navy (retired); Clark Winchell, USFWS (former U.S. Navy), Andy Yatsko, U.S. Navy (retired); Dawn Lawson, U.S. Navy (retired)</p>

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Installation Mission: SCI is part of Naval Base Coronado (NBC) and is an integral component of the Navy’s Southern California Range Complex. As the only training range within the continental United States where simultaneous ship-to-shore, air-to-ground, and ground live-fire training can occur, SCI is a particularly vital asset to the Navy and Marine Corps. The island supports multiple training activities from every Navy Primary Mission Area, to include critical training resources for Carrier Strike Group, Amphibious Ready Group, Marine Expeditionary Unit certification exercises, and Naval Special Warfare forces. It also provides the attributes necessary for testing a range of technologies such as ocean engineering, missiles, torpedoes, manned and unmanned submersibles, unmanned aircraft systems, electronic warfare, laser communications, high-energy lasers, and other Navy non-undersea systems.

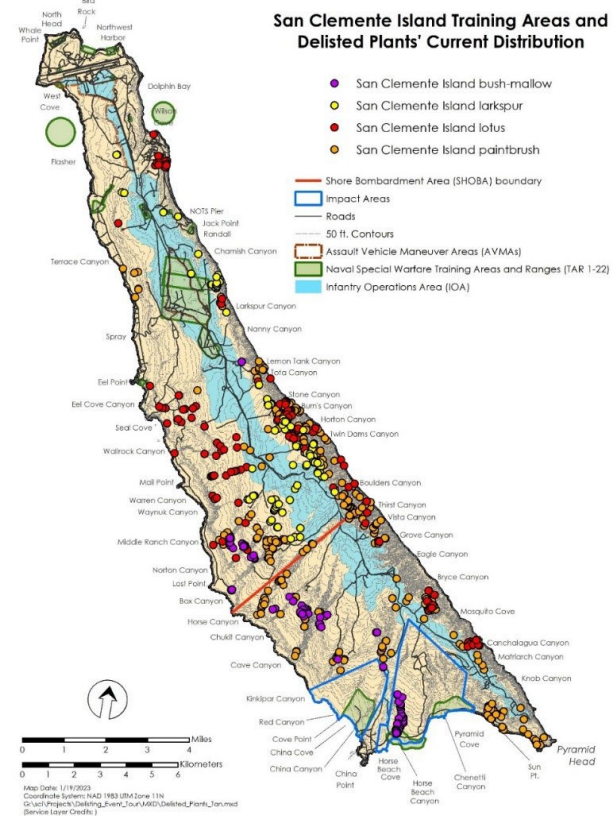


Figure 1: Map of SCI Training Areas and Delisted Plants

The PACFLT Conservation Program and the NBC NR Program collaborate to provide crucial Navy mission support at SCI with the goal of “no net loss in the capability of military lands to support the military mission.” Multiple ESA-listed species coexist with this vital mission capacity on SCI, which boasts the highest level of species endemism (native species that occur nowhere else) of all the California Channel Islands.

The SCI NR Managers consist of the PACFLT Conservation Program Manager, SCI Wildlife Biologist and NBC Botanist (both NR Managers within the NBC Environmental Division), and the SCI Environmental Operations Manager (also within the NBC Environmental Division). The SCI NR Managers partner with multiple federal and state agencies with the common goal of species conservation. This team executes a variety of conservation efforts supported by a budget of \$5 million in annual PACFLT Conservation Program funding. The team operates the only Navy year-round staffed field station with a greenhouse and endangered avian captive breeding facility, and manages the unique logistical challenges of executing the program on an island along with the unique safety and coordination challenges of working on multiple live-fire ranges on a daily basis.

Background

History: SCI is the southernmost of California’s Channel Islands, located 68 nautical miles northwest of San Diego. The 37,000-acre island supports diverse vegetation types: grassland, scrub, woodland, and dune. SCI was historically used for livestock ranching. Settlers brought non-native animals, including goats, sheep, pigs, and cattle, to the island. Livestock destroyed native vegetation, including habitat for the SCI bush-mallow, SCI larkspur, SCI lotus, SCI paintbrush, and San Clemente Bell’s sparrow, which eventually led to their ESA listing in 1977.

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In 1934, SCI jurisdiction transferred to the Department of Defense (DoD). Arrival of the Navy transformed SCI into a hub for military training, research, and conservation. Between 1977 and 1991, the Navy eradicated goats, the last of the remaining feral herbivores, from SCI, and native vegetation on the island began to slowly recover. Since the removal of introduced livestock and their feral descendants, the SCI NR Managers have been dedicated to the conservation and recovery of natural resources on SCI.

Delisting Process: The USFWS downlisted SCI lotus and SCI paintbrush from endangered to threatened in 2012 in response to a 2010 delisting petition. Believing that further status changes may be warranted for these species, SCI larkspur, and SCI bush-mallow, Jacque Rice (former PACFLT Conservation Program Manager) initiated a compilation and review of survey data followed by geospatially based threat analyses for these four plant species. Her efforts culminated in the preparation and eventual peer-reviewed journal publication of Conservation Assessments for SCI lotus, paintbrush, and larkspur between 2018 and 2022.



Several members of the Nominee Team on SCI

In 2018, the Recovery and Sustainment Partnership (RASP) Initiative between the DoD and the Department of the Interior provided a framework for collaboration on the recovery of listed species on military lands, and prioritized delisting and downlisting, where warranted. USFWS and the Navy identified the five now-delisted SCI species as high-priority focal species for potential status changes. Delisting requires that a species have sufficient resiliency, redundancy, and representation, and that all threats be sufficiently managed so recovery can be sustained. Supporting analyses are done in Species Status Assessments (SSAs). USFWS partnered with cooperator Texas A&M NRI and the Navy to develop SSAs for the five SCI species. The SSAs for the plants were based heavily on the Navy's Conservation Assessments and identified threat management and recovery efforts made by the Navy team. Major remaining threats identified since the removal of goats include fire, invasive species and non-native predators, soil erosion, military training, and climate change. Recovery efforts to reduce these threats include conservation measures implemented in support of ESA, the National Environmental Policy Act, and the Sikes Act. Specific conservation program elements include species monitoring, habitat restoration, invasive species control, predator management, vegetation mapping, soil erosion monitoring and control, and wildland fire management. Based on the results of the SSAs, USFWS proposed to delist all species in May 2021.

An expansion of military training on SCI was proposed in October 2021, which necessitated the preparation of new SSAs for all five species in 2022. Again, Texas A&M, USFWS, and the Navy collaborated to prepare the SSAs on a very aggressive schedule, which was necessary to keep the delisting on track. Based on the analyses in the SSAs and additional management measures committed to by the Navy, USFWS concluded that delisting was warranted for all five species, even with the significant expansion of training. The delisting was published in January 2023. ***Decades of diligent and innovative conservation work by the team laid the groundwork for this delisting, and focused efforts over the past two years secured this historic delisting.***

Delisting is supported by the Post-Delisting Monitoring Plan for Five SCI Taxa, which the Nominee Team prepared in 2022 and refined and implemented in 2023.

Organization: The Nominee Team consists of dedicated professionals from a multitude of federal and state agencies, non-profit organizations, academic institutions, and contract partners. The team was led by Kimberly O'Connor, PACFLT Conservation Program Manager. Ms. O'Connor provided coordination and strengthened lines of communication with OPNAV, Commander Naval Installations Command (CNIC), NAVFAC, and USFWS. SCI Wildlife Biologist Melissa Booker worked as the Navy technical expert for the San Clemente Bell's sparrow, and NBC Botanist Bryan Munson served as the technical expert for SCI plants. Sandy Vissman, Bradd Bridges, and Scott Sobiech from the USFWS CFWO worked closely with the Navy by attending frequent meetings, communicating with the USFWS chain of command, and providing technical and policy guidance. Tiffany McFarland from the Texas A&M NRI was the senior research associate to SSA preparation. The expertise, passion, and collaborative efforts of this dedicated team was essential to accomplishing the delisting. These efforts were intensive throughout 2022 and into 2023, shifting to a focus on the refinement and implementation of post-delisting monitoring once the species were delisted.

Summary of Accomplishments

Mission Enhancement: *Delisting directly benefits the military's mission at SCI.* Delisting eliminates requirements to consult with the USFWS over actions that may affect the species. Formal consultations have a 135-day timeline and require preparation of Biological Assessments. Because the ranges of several of the delisted species cover much of the island, formal consultation was required for almost all training and construction projects on SCI, hindering the Navy's ability to respond quickly to evolving training needs. Removing this requirement shortens timelines and reduces costs of implementing new actions, including military training and construction projects. Additionally, after the nine-year post-delisting monitoring period ends, conservation program costs associated with monitoring will decrease, saving already-limited financial resources.

In addition to conserving Navy resources, delisting illustrates that endangered species recovery can be achieved in concert with military training activities. The delisting was achieved on one of the most heavily used and strategically significant DoD training ranges, with one of the highest densities of listed species. The accomplishment represents DoD's achievement of an oftentimes challenging balance between conservation of natural resources and the continued mission of training Sailors and Marines to ensure sustained mission readiness and the capabilities needed to respond to changing threats around the world. *The accomplishment sets a valuable precedent and standard of conservation and military readiness for other DoD installations.*

Finally, the delisting has strengthened the Navy's partnership with USFWS and increased USFWS's confidence in the Navy's commitment to stewardship, which will benefit future consultations and recovery efforts across the Navy and DoD.

Invasive Species Control and Pest Removal: Between 1977 and 1991, the Navy removed approximately 29,000 goats from the island through the federal grazer eradication program. After the removal of goats from SCI, focus shifted to management of invasive plant species and non-native predators (cats and rats). To manage these threats, the NR Management Team partnered with IWS for endangered species predator management and with SDSU, ACS Habitat Management, and volunteers for invasive non-native plant species control. Both projects were

key to achieving the delisting, as supported by analyses in all five SSAs, and both are being implemented on an ongoing basis to ensure species recovery is sustained.

Habitat Restoration & Management:



Team botanists Sula Vanderplank (left) and Bryan Munson (right) conduct rare plant surveys on SCI

Habitat restoration and management are essential components to the recovery of listed species on SCI. Such programs were key to the delisting and are being implemented on an ongoing basis to sustain recovery. Since the removal of feral goats, the Navy team has worked to reverse the significant damage to native vegetation. Due to the large size of the island and the widespread nature of the impacts, the SCI NR Managers, under the botanical guidance of Kimberly O’Connor, Bryan Munson, and Chris Gillespie, have partnered with a diverse team of scientists from consulting firms, non-profit institutions, and universities to resolve management challenges. SDSU collected and propagated native seed and established restoration sites, and under the technical expertise of Leslie Bolick of NIWC developed a vegetation classification system and updated the island’s vegetation map, which served as the basis for numerous GIS-based threats analyses in the 2022 SSAs. SDSU, Tierra Data, Inc., and Gulf South Research Corporation conducted listed and sensitive plant species surveys that were used by the Nominee Team to assess impacts, model suitable habitat, and model future scenarios in the 2022 SSAs. The University of South Dakota conducted genetic research on listed plant species, and Tierra Data, Inc., implemented long-term vegetation trend analysis, which also were cited in the SSAs in support of delisting.

Table 1: Listed Plant Species Population at Time of Listing and Delisting

Species	Data Closest to Time of Listing			Current Data (2023)	
	Occupied Locations	Number of Individuals	Year	Occupied Locations	Number of Individuals
Bush-mallow	18	290 total	1996–1997	222	5,611
Larkspur	2	1 at 1 location, unknown at other	1979	74	18,956
Lotus	9	1,340	1980	249	21,251
Paintbrush	-	1,000	1984	601	48,181

Table 1 illustrates the success of these efforts in recovering SCI lotus, paintbrush, larkspur, and bush-mallow populations. ***Through the innovative and diligent work of the Nominee Team, San Clemente Bell’s sparrow and SCI bush-mallow, larkspur, lotus, and paintbrush experienced significant increases in range and population size that directly contributed to the delisting.***

Wildland Fire & Soil Management: As the largest threat to the now delisted species, wildland fire and its effective management were a major focus of the 2022 SSAs. Live-fire training on SCI creates a risk of wildfire, and the 2021 proposed expansion of live fire into new areas heightened the risk of catastrophic wildfire. Currently managed under the 2009 SCI Wildland Fire Management Plan, which was developed collaboratively between the Navy and USFWS and was the subject of formal consultation, implementation of the program is achieved through

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partnerships and contracts. ACS and Aspen Helicopters provide ongoing support for fuel break installation and aerial fire suppression, respectively, and SDSU provides mapping, assessment, and monitoring of wildfire impacts.

In 2022, the Nominee Team conducted extensive GIS analyses to assess wildland fire threats, model future scenarios, and identify ways to minimize the risk sufficiently to support the USFWS decision that delisting was warranted for all five species.

Additionally, in 2022 and 2023, the Navy worked with the Bureau of Land Management to upgrade all weather stations on SCI to provide reliable, real-time, automated data reporting and thereby facilitate the scheduling of suppression assets during live-fire training. SCI land management also includes soil erosion monitoring and control, which is implemented on an annual basis in partnership with SDSU. Erosion control was also a key threat considered by the

Core Team in the 2022 SSAs, with robust geospatial analyses concluding that the Navy's management was sufficient to support the delisting. ***The team's successful fire management and erosion control efforts on SCI have supported safe military readiness activities alongside the recovery of the now delisted species.*** Kimberly O'Connor, Bryan Munson, Chris Gillespie, Dawn Lawson, and Lisa Ordoñez provided the technical expertise to lead these efforts.



Fuel break installation



San Clemente Bell's sparrow

Fish and Wildlife: The Navy team partnered closely with USFWS to recover the San Clemente Bell's sparrow with the support of the IWS, which provided monitoring, management, and technical support for the San Clemente Bell's sparrow program. Under this program, the former PACFLT Conservation Program Manager (Jacque Rice) and the Installation Biologist (Melissa Booker) initiated all-island surveys that confirmed San Clemente Bell's sparrows were breeding in areas not previously considered suitable habitat, and population size estimates based on surveys of only historically used habitat were likely underestimated. Ms. Rice and Ms. Booker revised the San Clemente Bell's sparrow monitoring protocol, which has been implemented on an ongoing basis since 2013. Under the revised protocol, the Bell's sparrow population size was estimated to be four times that of previous estimates, with a far broader distribution, documenting biological

recovery. Under the collaboration and innovation of this program, the San Clemente Bell's sparrow population increased from 38 in 1984 to an average of 5,429 from 2013 to 2018. Additionally, the birds' range expanded from 10,000 acres to 33,000 acres.

The Bell's sparrow data provided the basis for the Core Team to develop a robust threats analysis and forecast changes in population size under different future scenarios in the 2022 SSA. The analysis and forecasting, in turn, allowed the Core Team to identify management areas crucial to the sustained recovery of the Bell's sparrow and informed the 2023 preparation of a Conservation Agreement that formalizes conservation measures built into SSA scenarios.

Community Outreach and Education: ***The historic delisting has received national attention and is helping to showcase the Navy's commitment to conservation and environmental stewardship.*** This accomplishment has been the subject of multiple local and national news articles and broadcast stories and is to be featured in an upcoming documentary. Members of the

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Nominee Team have given presentations at multiple conferences held by professional organizations at the local, state, and national levels, including the following:

- 10th Annual Santa Barbara Botanic Garden Conservation Symposium, February 2023, “Recovery on San Clemente Island: Largest group delisting in 50 years of the Endangered Species Act”
- Southern California Botanists 49th Annual SCB Symposium, October 2023, “Group delisting of rare plants on San Clemente Island: A success story”
- 10th California Islands Symposium, November 2023, “Delisting of the San Clemente Island Bell’s Sparrow: 25 years of monitoring tracks population recovery”

Such exposure increases public awareness of the ongoing conservation efforts on SCI and demonstrates the Navy’s broader commitment to conservation across all the lands it manages.

Awards and Notables:

In 2022, USFWS recognized several members of the Nominee Team (Kimberly O’Connor, Bryan Munson, Melissa Booker, Sandy Vissman, Clark Winchell, and Susan Meiman) for their collaboration, innovation, and success in the recovery of listed species. The team was honored as the 2022 Recovery Champions – Pacific Southwest Region. This prestigious award brought national attention to the Navy’s dedication to stewardship.



San Clemente Island

Future Conservation and Monitoring

Conservation and monitoring of the five species does not end with delisting. Delisting begins the next regulatory phase under ESA. The Navy and USFWS conservation partnership will continue under the 2023 Post-Delisting Monitoring Plan, the 2023 San Clemente Bell’s Sparrow Management Plan, and the 2023 Conservation Agreement, which is currently pending signature.

In coordination with the USFWS, the Navy will fund and implement management, monitoring, and research objectives based on monitoring triggers to prevent future declines.

The Navy team will continue to manage the San Clemente Bell’s sparrow and SCI bush-mallow, larkspur, lotus, and paintbrush under the SCI Integrated Natural Resource Management Plan, and these species will benefit from ongoing island-wide natural resources management activities. The delisting frees up limited resources that can now be reallocated to focus on species that require more active management to recover, such as the Santa Cruz Island rockcress (*Sabara filifolia*), SCI woodland star (*Lithophragma maximum*), and San Clemente loggerhead shrike (*Launius ludovicianus mearnsi*).

Conclusion

The historic delisting accomplished by the collaboration between the U.S. Navy, USFWS, and many professionals from federal, state, and local agencies represents the culmination of more than 40 years of innovation, dedication and determination. More importantly, it demonstrates that the Navy’s environmental stewardship can thrive even on one of DoD’s most heavily used live-fire training ranges located on a remote island.