Natural Reserve System

Campus Advisory Committee

2014-2015

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Executive Summary

The Coal Oil Point Reserve (COPR, the Reserve) is one of the few Reserves in the University of California Natural Reserve System (UCNRS) with a dune system and seasonally tidal estuary. Its proximity to the University of California, Santa Barbara (UCSB) campus provides excellent opportunities for use by campus researchers and classes. The purpose of the COPR Management Plan (COPR MP) is to guide the Reserve in managing its sensitive resources in the public trust and to aid COPR in enhancing its value as a research and educational facility. The COPR MP should describe previous and future management actions in sufficient detail to create a record of what has been accomplished and what will be done in the future.

The COPR MP contains “Programs” grouped into five areas: Users, Conservation, Stewardship, and Administration, and Infrastructure and Facilities. Additional detailed plans have been developed to describe larger projects that are maintained by the Reserve (see Appendices). These include the Access Plan, the Snowy Plover Management Plan, the Restoration Plan, and the Infrastructure Plan. The Access Plan and the Snowy Plover Management Plan have been fully implemented. The Restoration Plan is ongoing, and the Infrastructure Plan is a new plan.

The first COPR MP was written in 2004. In the last 10 years, most actions proposed in the 2004 plan have been implemented. These are described in the Status section of each program. The Policies and actions section describes policies that affect particular programs such as local ordinances, NRS User Guidelines, and policies in the 2010 UCSB Long Range Development Plan and actions proposed in the future.

The goal of this revision of the COPR MP is to update the status and policies of the Reserve programs described in 2004 and to identify new plans for the future. For example, since 2004, the Reserve received two new full-time staff and a building to support the Reserve’s programs. These changes create new opportunities for the future which are described in the 2015 plan.

This plan has been reviewed by the UCSB NRS, the UCSB administration (Office of Research), and the UC NRS System-wide Office. The COPR MP requires an amendment to the 2010 UCSB
LRDP and is subject to the California Environmental Quality Act (CEQA) and to California Coastal Commission review and approval.

**Summary of Programs**

*A- Reserve Users and Visitors*

Each year the Reserve supports about 20 research projects, 20 college level classes, and several thousand visitors who attend public tours or participate in volunteer activities. Visitors use the Reserve for their own planned activities or they join an activity provided by the Reserve staff such as guided tours, K-12 field trips, restoration work days for volunteers, and a docent program. There is an Access Plan that guides the approaches and policies for Reserve access (Appendix 1).

*B- Habitat Conservation*

To preserve its natural resources, the Reserve maintains active Restoration and Endangered Species Programs. Routine activities include (1) mapping natural resources, (2) managing access to protect sensitive habitats, (3) controlling and eradicating exotic weeds, (4) restoring degraded habitats, and (5) managing endangered species and public access.

The COPR Snowy Plover Management Plan (Appendix 2) was proposed in 2001 and it has been fully implemented. The Plan aims to reduce disturbance by beach users by increasing public awareness of snowy plover issues, and keeping foot traffic away from core roost and nesting areas. This program has been hugely successful and has resulted in the recovery of the breeding population of the threatened Pacific coast population of the Western Snowy Plover (WSP) at the Reserve. The Snowy Plover management program has received prestigious awards and increased the Reserve’s profile with the community and outside agencies. This program is planned to continue in its present form for the foreseeable future.

Occasionally, priorities for conservation and restoration goals are in conflict, making it difficult to determine what is more important. This COPR MP includes the following new guidelines to help resolve these conflicts: 1) threatened and endangered species have priority over non-listed species,
2) native habitats and species have priority over exotic habitats and species, and 3) historical native habitats are restored to a condition prior to European disturbance to the extent possible (as in the official definition of “Restoration Ecology”). These guidelines give general directions for management. Exceptions may be justified for biological, cultural, or historical reasons.

The Reserve has a Restoration Plan (Appendix 3) that guides the restoration activities. The most invasive weed species, including Acacia, pampas grass, and Myoporum, have been eradicated from the Reserve over the past 10 years. The area covered by iceplant has been greatly reduced and the remaining iceplant will be eradicated in the near future.

The Reserve plans to replace senescing exotic trees such as Eucalyptus and Cypress with native oak trees and shrubs. Tree canopies of Eucalyptus and Cypress are used by birds as perching and nesting sites. When the trees are die off, native oaks will replace this bird habitat. The planting of 350 sapling Coast Live Oaks was initiated on 2014 and will be completed by the end of 2016.

The Reserve staff maps and monitors natural resources to track changes over time. Maps of vegetation, geology, topography, history, restored habitats, and research projects are available in the Reserve’s website. Surveys of water quality, birds, fish, insects, and plants have been conducted and species lists are also available. These surveys have been periodically repeated when a potential change or impact is predicted. The Reserve will seek funds to repeat these surveys at regular intervals as these data can be valuable for evaluating the impact of climate change in the Reserve. The Reserve plans to improve the vegetation maps by creating maps on a smaller spatial scale than they are currently available.

C- Stewardship

The University of California holds its lands in the public trust and manages the NRS lands in a manner that preserves their natural resources for future generations. Balancing the protection of native habitats with the need to provide coastal access to the public for recreation has been a central focus of stewardship at COPR. The Reserve has implemented the Access Plan (Appendix 1) and no changes are planned for the future. Portions of the beach, perimeter trails and an internal
pedestrian nature trail (the Dune Pond trail) are open to the public for nature study and passive recreation (such as walking and jogging), and these visits do not require a formal application. The Reserve manages these trails to maintain effective boundaries, ensure safety, and preserve the natural resources and their educational value. The Reserve has provided two vehicle turnouts for bird watchers along Slough Road. The public can access Sands Beach from 3 points: (1) adjacent to the eastern boundary of the Reserve near the Cliff House, (2) through the Dune Pond trail from Venoco Road, and (3) at the western boundary of the Reserve adjacent to the Ellwood Bluffs. Sands Beach is also accessible by walking along the beach from the east or west. With guidance from the UCSB Police Department, the Reserve has posted no trespassing signs along the perimeter of the Reserve, and signs at the beach access points and on the Reserve's public trails with notices of the Santa Barbara County ordinance requiring dogs be kept on a leash.

To ensure that the Reserve is managed within the larger context of its watershed, the Reserve Director and the UCSB NRS Associate Director attend a quarterly meeting with representatives from the City of Goleta, the County of Santa Barbara, and the UCSB campus, and consult with local agencies such as the Environmental Defense Center, Urban Creeks Council, Santa Barbara Channel Keeper, and the Santa Barbara Audubon Society. The Reserve Director is a member of the UCSB North Campus Open Space Committee which will discuss the future plans for the restoration of the North Campus Open Space (NCOS). Participation by the Reserve Director as such ensures that the NRS is represented as potential impacts of this large scale restoration project adjacent to the Reserve are considered. The main objective in NRS representation is to ensure that impacts of the NCOS restoration on the Reserve are minimized and that any impacts that cannot be avoided are appropriately mitigated. In addition, the Reserve can provide valuable information about the Devereux ecosystem for this important project.

The continued growth of the surrounding urban areas in the City of Goleta and development on the UCSB campus will potentially cause additional impacts to the natural resources of the Reserve. The Reserve and the UCSB NRS will work with the University and the entities that develop and approve new projects in the area to ensure that the potential impacts to COPR are mitigated appropriately. The COPR Reserve Director and the UCSB NRS administration will consult with the University to ensure that potential impacts are considered and appropriate mitigation measures
are in place. In the case of University development projects, the University will bear the cost of the evaluation of the impacts and implementation of required mitigation measures which may include dedicated enforcement, Reserve staff support, habitat protection and/or restoration. When development is by non-University stakeholders, COPR and the UCSB NRS will consult with the University to engage the stakeholders on behalf of the Reserve to evaluate impacts and implement mitigation measures as needed.

Several aspects of the development and restoration of the adjacent North Campus Open Space (NCOS) may affect the Reserve. Ideally the NCOS will be designed in ways to improve or buffer the Reserve. The Reserve Director will work with the chair of the NCOS Science Advisory Committee to consider potential impacts and mitigation measures.

The COPR Reserve Director will work with the University to create a West Campus Natural Areas Committee comprised of the COPR Reserve Director and the managers of the various open spaces and grounds overseen by University groups. The ecosystem and habitats of the West and North Campus areas are more or less connected and must be jointly protected. Activities that occur in one area of West and North Campus can impact biological, cultural, and archeological resources the other nearby areas. This committee will provide the opportunity to coordinate projects and activities to ensure an effective overall management strategy. The committee will meet twice a year or more often if needed to share updates and coordinate planning.

The Reserve Director will work with the University to develop an enforcement program. A dedicated UCSB enforcement officer on the beach may be necessary to enforce Santa Barbara County ordinances, UC Property Use policy, and the California Education Code governing conduct on UC property at the Reserve and the adjacent UCSB open space. Drones are becoming an issue at Reserves because they disturb people and wildlife. The UC Office of the President is working with FDA to create rules about drone use in Reserves.

_D- Administration_
The administration of COPR and the other six reserves managed by UCSB is the responsibility of the UCSB NRS campus administration office with some assistance from the Marine Science Institute. The UCSB NRS Director heads the campus NRS administrative office and reports to the UCSB Vice Chancellor of Research. The UCSB NRS Advisory Committee, which is appointed by and reports to the UCSB Vice Chancellor for Research, advises the UCSB NRS Director on goals, policies and operations for the seven UCSB Reserves. The COPR Faculty Advisor and the COPR Faculty Representative are members of the Advisory Committee who work with the COPR Reserve Director to advocate for the Reserve and provide advice about management and operational issues at the Reserve. The COPR Reserve Director lives at the COPR field station and is responsible for the day-to-day Reserve operations and programs. The Reserve Director oversees the use of the Reserve by all researchers, classes, volunteers and public visitors. The Reserve Director supervises staff at COPR, and reviews and approves applications for use of the Reserve through the UC NRS Reserve Application Management System (RAMS). The Reserve has modest an annual recurring budget. Extramural grants and donations provide additional funds for restoration, internships, and infrastructure.

A release form signed by Reserve users protects the University from various liabilities and serves as a means to inform users of potential hazards. Recent safety improvements that have been implemented include a serviced porta-potty adjacent to the beach entrance and split rail fencing along cliff edges. COPR works with the UCSB campus to improve safety for visitors and users and seeks help from the UCSB campus to enforce regulations and manage recreation on the beach. The Reserve follows UCSB campus guidelines with respect to rapid–response protocols for potential catastrophic natural events.

**E- Infrastructure and Facilities Program**

The Reserve has eight small buildings and greenhouses clustered at the Field Station on Coal Oil Point near the entrance to Sands beach, and is in the process of renovating a building on the Devereux Campus adjacent to the Reserve to serve as a new headquarters facility and Nature Center (herein the Center). The proximity of the Center to the Reserve will provide much-needed
support for Reserve users without building new infrastructure at the field station on Coal Oil Point. When the building is renovated to fit the Reserve’s needs, it will include a small laboratory, offices for staff and researchers, classrooms, a meeting room, a library, and public restrooms. The Center will be used by staff, docents and volunteers as a base of operations, researchers working on projects, University and K-12 students attending lectures, classes and field trips, and visitors seeking information about the natural resources of the area (Appendix 4).

**Introduction to the Reserve and its importance**

The University of California (UC) Natural Reserve System (NRS) manages 39 sites representing nearly all the State's major natural ecosystems. The NRS protects California’s natural heritage for the public trust and provides protected natural areas for research and teaching to contribute to the understanding and wise management of the Earth and its natural systems. The ecosystems and facilities offered by the 39 Reserves are available to faculty, students, and the public from institutions throughout the world. UC Santa Barbara (UCSB) manages seven of the 39 NRS reserves under the Office of Research. The administration of the seven reserves is the responsibility of the UCSB NRS campus administration office, which is associated with the Marine Science Institute.

The COPR consists of 165.3 acres of protected coastal habitats along the south coast of Santa Barbara County in the lower drainage area of the Devereux Creek Watershed, adjacent to the UCSB West Campus and UCSB North Campus Open Space (Figures 1 and 2). The diversity of habitats and wildlife at the Reserve is striking and some of these are now rare along the coast. For example, the COPR beach is breeding habitat for the threatened Pacific coastal population of the Western Snowy Plover. The Belding savanna Sparrow breeds on the pickleweed habitat at Devereux Slough. Rare invertebrates such as the Globose Dune Beetle, the Dune Spider, and the Sand Tiger Beetle share the beach and dunes with the snowy plovers. The Reserve has one of the most pristine remnants of dunes and Coastal Dune Scrub in Santa Barbara County, and contains a number of rare plant species. Several types of wetlands such as vernal pool, dune swale, salt flat and salt marsh are part of the 5% remaining coastal wetland in California. In a short walk, visitors
can observe all these habitats and learn why it is important to preserve them. Perhaps the most unique aspect of this coastal reserve is that its natural resources and ecology are well known, thanks to the various research and college class activities in the Reserve, and owing to the secondary school students who visit with their teachers in class field trips.

Though small, COPR receives many users. Because of its proximity to UCSB, undergraduate classes from the campus use the Reserve regularly. Students from other institutions, community schools, and educational groups visit frequently as well. It is also a site for graduate student and faculty research projects ranging from field tests of ecological theory to investigations into the management of endangered species.
Figure 1. General location map of the Coal Oil Point Reserve (not to scale)
In addition to providing research and educational opportunities, COPR is unusual among the 39 NRS reserves in that a trail and portions of the beach are open to the public. This access to the Reserve’s great natural beauty provides a visual and aesthetic amenity for the campus and community. For example, amateur naturalists often visit the Reserve’s Devereux Slough because it is among the top ten birding areas in the Western United States. Such forms of access provide a valued public service and offer opportunities for the Reserve to foster public education.
Mission of the University of California Natural Reserve System

In 1965, the UC Board of Regents established the NRS to provide protected environments representing California’s natural habitats for research, education and public service. In the 50 years since its formation, the NRS has grown from seven to 39 Reserves that encompass over 750,000 acres. The Reserves also serve as a gateway to more than a million acres of public lands. The NRS is a UC-wide program that serves the overall UC Academic Affairs. Each Reserve is assigned to one of nine UC campuses for administration. The office of the UCSB NRS manages the COPR and six other UC Natural Reserves.

The mission of the Natural Reserve System is to contribute to the understanding and wise management of the Earth and its natural systems by supporting university-level teaching, research and public service at protected natural areas throughout California.
A. USER PROGRAMS

For over forty years, the COPR has attracted a number of users who engage in research, field studies for university-level classes, and field trips for K-12 and adult environmental education. The following three user programs provide direction for supporting COPR’s and UCSB’s missions. Present uses are listed in Table 1 below.

Table 1. Use of COPR in the 2013-2014 UCSB academic year.

<table>
<thead>
<tr>
<th></th>
<th># visitors</th>
<th># visitor days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research</td>
<td>136</td>
<td>843</td>
</tr>
<tr>
<td>College Class</td>
<td>647</td>
<td>1,192</td>
</tr>
<tr>
<td>K-12, tours,</td>
<td>1,361</td>
<td>4,873</td>
</tr>
<tr>
<td>Volunteers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2,144</td>
<td>6,908</td>
</tr>
</tbody>
</table>

All users must fill out an application and receive notice of approval before commencing any activity on the Reserve. Online applications are available at http://coa.loilpoint.ucnrs.org. The Reserve Director reviews user applications for consistency with the UC NRS User Guidelines.

The Reserve is also used by the public for recreation in specific areas (Appendix 1, Access Plan). Reserve staff and volunteers have been “enforcing” ordinances, regulations and policies governing use of the Reserve that protect the Reserve’s natural resources. When staff and volunteers contact the public about non-compliance with ordinances, regulation and policies, they are put at risk of confrontation and are distracted from other important duties. Enforcement of the Santa Barbara County leash ordinance for dogs, the UC Property Use policy, and the California Education Code governing conduct on UC property must improve, and is the responsibility of UCSB administration and police department. The Reserve would benefit from more frequent UCSB patrols.

1. Research Program

Status. The COPR is an important research facility for faculty and graduate and undergraduate students, with an average of 20 projects being conducted each year. The history of research in
this area predates the Reserve. One example is the research done by Frederic E. Clements, botanist and ecologist, on vegetation and plant communities in the Coal Oil Point area in the 1920’s and 1930’s. Areas of research conducted at COPR have included climate, food webs, parasitology, anthropology, mineral resources, geology, oceanography, various natural history surveys, and art. Several reports, theses, and scientific publications document the research activities conducted at COPR and together provide a database of knowledge about the Reserve. These documents are available at the Reserve and are referenced in the Reserve’s online bibliographic database http://coaloilpoint.ucnrs.org. The Reserve staff routinely maps all research projects and stores the maps in a GIS database to ensure that research and class projects do not interfere with one another, and to provide a history of land use for Reserve users.

Policies and Actions. Research is a mandated activity of the UC NRS. Therefore, supporting researchers is a high priority for the Reserve. The NRS manages its lands in the public trust and thus seeks to conserve its natural resources. Therefore, the Reserve Director evaluates each research application to determine if it complies with the UC NRS guidelines and with applicable government regulations such as, for example, the Endangered Species Act and California Coastal Act. Examples of the criteria that are used to evaluate each project are:

a) The percent of the habitat or local population of a species that will be destroyed or impacted by the project. For example, observation and collections are allowed in most areas but the amount of sampling allowed will depend on the size of the population, the rarity and official status of the species, and the general sensitivity of the habitat. Only a very small percent of a population can be collected each year.

b) The duration of project impacts and the time it will take for the affected habitat and species to revert to pre-experimental conditions. Manipulative research that permanently impacts natural areas is not allowed. However, if the experiment is to be conducted in an area that is already heavily degraded, then it may be allowed in conjunction with some restoration.

c) The impact of the project on other ongoing research. Ongoing research projects have priority over new projects. Projects that require exclusive use of a habitat will be evaluated for their interference with future projects.

d) Only very limited manipulations will be allowed in the Western Snowy Plover (WSP) protected area, and no manipulations will be allowed during the breeding season. During
the breeding season, research is restricted to management, observation and monitoring of the WSP.

e) Researchers must remove all of their equipment, cages, flags, and similar research supplies at the end of an experiment.

f) Introduction of exotic genotypes to the Reserve (e.g. for transplantation experiments) is not allowed.

To support research activity at COPR, the Reserve will continue to update resource inventories and monitoring databases, which are available to Reserve users on the website.

2. Class use (University/College-level)

Status. The COPR Education Program includes many levels of educational opportunities and experiences. Several UCSB courses (e.g. Walking Biology, Natural History of COPR, Ecology, Environmental Studies, Ichthyology, Vertebrate and Invertebrate Zoology) and classes from other universities and colleges regularly use the Reserve as an outdoor laboratory. The Reserve provides an excellent opportunity for students to study field research methods and learn about the local fauna and flora. Students from UCSB can bike to the Reserve from campus, which makes regular visits for class projects easier. The Reserve Director and staff mentor undergraduate interns from various departments through internships.

Policies and Actions: Educational support for University level classes is a mandated responsibility for the Reserve. Activities that are likely to interfere with ongoing class programs are not allowed. Class use that damages natural resources is not permitted. Class use of the Reserve is allowed on the perimeter of the Reserve and Dune Pond trail, the beach outside the plover roost area, and in some fenced areas if approved by the Reserve Director. Restricted areas include the Snowy Plover fenced area, the dunes, and the back dunes east of the Dune Pond trail. Class participants must remove all experimental structures, markers, etc., after sampling activities or experiments have ended. A faculty member, instructor, or teaching assistant (TA) must accompany
the students. If a student wants to conduct an independent project, he/she must request approval from the Reserve Director and fill out a separate research application as required of all researchers.

3. Public Service Program

**Status.** Several organizations such as the Santa Barbara Audubon Society and the Santa Barbara Museum of Natural History lead trips to COPR as part of their educational programs. Local K-12 classes also visit the Reserve for field trips in a variety of capacities. For example, the "Kids In Nature" program brings students to the Reserve for educational activities. In 2012, the Reserve implemented its own elementary school education program that engages UCSB student interns to teach 4th-6th graders about ecology and nature appreciation. Many of the field trips and classes are self-guided, but the Reserve also offers docent-led tours monthly, and by appointment. Docent-led tours are open to the public and often requested by community and campus groups. Docents are members of the local community or UCSB students who learn about the Reserve’s resources and are trained to interact with the public. The Snowy Plover Docent Program has increased the opportunities for public guided tours of the plover area. The Reserve created a self-guided tour available along the official public Dune Pond trail through the Reserve by installing interpretive signs with an accompanying educational pod-cast accessible on the web with a mobile phone app.

**Policies and Actions.** Where appropriate, the Reserve supports educational activities by K-12 classes, community groups, and qualified non-profit organizations. Educational and outreach activities that damage natural resources are not permitted. Field trips are permitted on approved trails and the beach outside of the Snowy Plover fenced area. K-12 groups visiting the nesting area during the Snowy Plover breeding season (March 15 to September 15) must be guided by a Reserve staff member to avoid disturbance to breeding snowy plovers.

The upper size limit for a class visiting the Reserve is 30 individuals including the students and teachers. The minimum student/adult ratio for K-3rd grades is one adult for each 5 students; the ratio for 4th-12th grades is 1 adult for each 10 students. Larger, well-organized, groups may be allowed in consultation with the Reserve Director. Field trips are for educational opportunities;
recreation by participants is not permitted on the Reserve, including the beach area. Individuals doing a self-guided tour on the Dune Pond trail or around the perimeter of the Reserve are not required to fill out an application. Groups of individuals are required to submit an application.
B. CONSERVATION PROGRAMS

The Reserve has a number of habitat types within a relatively small area (Figure 3). The Reserve actively enhances natural habitats through weed control, restoration, re-introduction of extirpated species, control of nuisance predators attracted to the Reserve by public activities, trash removal, and management of public access and pets.

Figure 3. Habitat types at COPR.

1. Restoration Program
Status. Federal and State legislation and University of California policies aim to protect sensitive habitats and rare and endangered species. The Reserve has made significant progress in the last 10 years in reducing impacts to natural areas with restoration, education, fences, and signs.

The Reserve has a Restoration Plan (Appendix 3) that was approved by the California Coastal Commission (CCC) (NOID 4-07) in 2007, and the Reserve staff routinely implements its proposed actions as grants are secured to fund the projects. For example, over the past 10 years, a number of exotic and invasive species have been eradicated or controlled as proposed in the previous COPR MP. The Reserve staff also restored seven vernal pools on the UCSB West Campus (external to the Reserve) with approval from the CCC in 2000 (NOID 2-00). All plants used in the restoration projects are grown in the Reserve’s greenhouse and shade huts.

There are many trees that are non-native species around the field station site on Coal Oil Point and in some areas of the Reserve. The trees can provide important habitat for birds, but exotic species can also remove ground water (which dries out wetlands), shade the understory preventing the growth of native plants, and promote soil toxicity which inhibits native plant growth (e.g. allelopathy by Eucalyptus). Monterey Cypress trees that were planted in the field station area about a century ago are now senescing. Trees that are in danger of falling on trails or structures and present a public safety hazard will be removed.

In 2014, Goleta Valley Beautiful and COPR staff planted 150, 5-7 foot native oak trees in the northern section of the Reserve. As these trees grow, they will replace the ecological functions of exotic trees that will die naturally or will be removed as a result of restoration activities. An additional 200 oak tree seedlings will be planted in an adjacent area in 2015 and 2016. The oak trees will eventually form a dense canopy that will provide a refuge and corridor for wildlife moving between the Slough and the pond near the Ellwood Marine Terminal.

It is anticipated that the Ellwood Marine Terminal will soon be removed and the area restored, which will provide additional wildlife habitat. In the last 10 years, a mountain lion, a bear, coyotes and bobcats have been sighted on the Reserve. Attracting these large top predators to the Reserve will help reestablish the web of interactions among the flora and fauna that is characteristic of
natural areas that have not been heavily impacted by human development. Currently there are too few top predators and too many meso-predators (raccoons and skunks) on the Reserve, which has resulted in negative impacts on populations of small mammals and birds such as the Western Snowy Plover.

COPR does not manage the marine intertidal habitats adjacent to the Reserve; this area is under the authority of the California State Lands Commission. In 2014, the California Department of Fish and Wildlife (CDFW) declared the ocean in front of the Reserve as a Marine Protected Area (MPA), which prohibits take of marine organisms, except for authorized uses that require a CDFW permit. COPR staff and docents assist the CDFW by reporting illegal activities in the MPA.

**Policies and Actions.** The Reserve will restore habitats that have been degraded by past human activity following the guidelines in the Restoration Plan approved by the CCC in 2007. The guidelines for deciding restoration priorities are: 1) endangered species have priority over non listed species, 2) native habitats have priority over exotic habitats, and 3) disturbed habitats should be restored to a condition similar to undisturbed similar habitats. As per these guidelines, exotic trees will be replaced with native trees at a 1:3 ratio to replace the tree canopy habitat lost when exotic trees are removed. Exotic trees will be removed gradually and removals will be timed to limit disturbance to nesting birds (in accordance with LRDP policies). To protect the integrity of the Reserve’s genetic stocks, the Reserve will use, and require, neighboring restoration projects to use only local sources of native plants, and will avoid replanting in areas where natural reseeding is sufficient to restore the habitat after weed removal. To avoid impacts to research projects, the Reserve provides maps of restored sites to researchers.

Exotic and non-local native species of trees will be eradicated or controlled except when: (a) they provide desired visual screening or landscaping for buildings, (b) they have been used as active nest sites for birds of prey in the prior 2 years, and (c) they have scenic value as long as they do not conflict with the primary function of the preservation or restoration of native species. Native trees such as oaks or other shrubs that replace exotic trees will be planted in areas that can better support arboreal habitat such as the northern part of the Reserve. To enhance the Reserve’s grassland, the Reserve will evaluate methods, such as controlled fire, and mowing as tools to
reduce the cover of exotic annual grasses and promote the growth of native bunch grasses. Revegetation with native species will be used to restore degraded habitats.

2. Endangered and Threatened Species Program

**Status.** The Endangered Species Act requires the development and implementation of recovery plans for listed species. For the purposes of the COPR Management Plan, the Endangered and Threatened Species Program includes various sensitive plant and animal species within the Reserve that have federal or state protection as endangered, threatened, or special-status species. It also includes those that are listed as endangered or possessing special status by the California Natural Diversity Database, the California Native Plant Society, and/or the Audubon Society. COPR maintains a list of species found on the Reserve that require special protection, including plants, vertebrates, and invertebrates. Maps of the locations at COPR of these species are also available (Figure 4). UCSB has mapped the open space that surrounds the Reserve including ESHA (Environmentally Sensitive Habitat) (Figure F. 2 2010 LRDP).

The listed species at COPR that receives the most attention is the Pacific coast population of the Western Snowy Plover. Plover nesting and overwintering habitats occur on the foredune and upper beach areas of Sands Beach on the Reserve and, as a result, plovers are easily disturbed when the beach is used for recreation. COPR has been designated a critical habitat for this species by the US Fish and Wildlife Service (USFWS). The Reserve prepared and implemented a Snowy Plover Management Plan that has been approved by the CCC (Appendix 2) and requires approval every five years (CDP 4-08-007). The Plan provides for the protection of the plover habitat from disturbance by beach users. Other species of special status have benefitted from the protections instituted for plover populations. California Least Terns nested at Sands beach before 1970 but were absent from the area until plover protection measures were in place. Least Terns are now intermittently breeding within the protected area.
Coal Oil Point Reserve

The Reserve is also actively involved in research to promote the recovery of the Ventura Salt-Marsh Milkvetch, a plant that has only a few individuals left in the wild. There is no record that shows this species is native to the Reserve. Its known distribution is south of the mouth of the Ventura River where it occurs on the edges of coastal wetlands. The Reserve was chosen as a research site because it has suitable habitat for this species to survive.

Policies and Actions. Activities that may harm, harass, pursue, hunt, shoot, wound, kill, trap, capture or collect endangered or threatened species are prohibited as per the Endangered Species Act. The Reserve will contribute to the recovery of rare and endangered species to the extent that funds are available.
Figure 4. The locations of sensitive species occurring at COPR in 2014. Note: the Salt Marsh Milkvetch was introduced to assist its recovery and the Santa Barbara Honeysuckle was planted in various locations from its original population (at the back dune scrub, see arrow).

3. Animal Damage Control Program

Status. Ground-nesting birds in estuaries, beaches and dunes are vulnerable to predation because of the openness of the habitat. Natural predation is part of a functioning ecosystem, but in many urban areas the natural ecosystem has been altered by changes in the types and number of predators. For example, coyotes can maintain a rich bird community by preying on mid-level predators that prey on birds, but coyotes are vulnerable to urban development and habitat fragmentation. Pets (dogs, domestic and feral cats), native urban predators (raccoons, skunks,
Coal Oil Point Reserve

crows) and exotic animals (opossums and red foxes) can increase predation, causing the decline of native animals. The UCSB 2010 LRDP does not permit unleashed dogs in the Reserve but enforcement is generally only available when the docents call campus police to deal with a noncompliant dog owner. Santa Barbara (SB) County has an ordinance that requires dogs be kept on a leash at all times in all public places. Dogs are not permitted on the Reserve including on the Pond Trail which provides public access through the Reserve to the beach. Signs have been posted at the entrances of the Pond Trail, but the signs are not effective in excluding dogs from the trail. This is an ongoing problem for the Reserve that can cause major negative impacts to wildlife, particularly birds. For example, in 2013, an unleashed dog that was on the Pond Trail was observed killing a Black Necked Stilt chick from a nest at the edge of the Slough. This was the only active nest of this species ever observed on the Reserve.

**Policies and Actions.** Dogs must be on leash on Sands beach and other trails surrounding the Reserve (SB County ordinance). Dogs are not allowed on the Pond Trail. Horses are not allowed on Sands Beach or on the Pond Trail. The campus will collect trash from the beach, which should help reduce the presence of predatory species attracted to refuse, especially crows. To reduce the population of urban, exotic and domestic predators, the Reserve will implement methods to discourage their presence in sensitive habitats. To reduce disturbance from dogs, the Reserve has posted the Santa Barbara County leash ordinance and the UC regulation governing dogs on University property, and continue to engage the UCSB Police Department and the UCSB campus administration to improve enforcement of the ordinance and regulation. In the future, as growth in the area continues, mitigation of development impacts may require support from developers for a dedicated enforcement officer for the area adjacent to the Reserve, including the NCOS. The Reserve Director and the NRS campus administration will consult with UCSB administration to ensure projects include an evaluation of the potential impacts on the Reserve and implementation of mitigation measures as needed (see section D.5 Cooperative Management Program).
C. STEWARDSHIP PROGRAMS

1. Public Access Program

Status. The Reserve has implemented an Access Plan (Appendix 1) to provide public access and protect research and natural resources. The Access Plan was approved by the CCC in 2010 (NOID 1-10). Sands Beach is open to the public, except for the fenced Snowy Plover area. The Dune Pond Trail is also open to visitors. Access points to the Reserve include: (1) from the UCSB West Campus Beach east of the Reserve, (2) from the bluff at the Sands Beach entrance near the Cliff House, (3) from the south terminus of the Dune Pond Trail, (4) from the bluff between the Reserve and Ellwood Bluffs, and (5) from Ellwood Beach, west of the Reserve. Other trails or access points are not officially recognized and are in the process of being closed and eliminated. The University provides metered parking at nearby lots on the UCSB West Campus (Devereux) property. The Reserve provides parking for approved users and volunteers in a parking lot at the COPR field station. The Reserve will post a sign at the gate with information for handicapped users who wish to park inside of the gate.

The interpretive Dune Pond trail bisects the Reserve from Venoco Road at the northern Reserve boundary to Sands Beach at the southern boundary. The COPR trails and property needs to be strictly regulated to ensure their use is consistent with the NRS Mission of supporting university-level teaching, research, and public service. A number of improvements were made to the Dune Pond trail in 2012-2014 that increase the protection of native habitats while providing public coastal access through the Reserve, and also provide educational experiences for Dune Pond trail users. These improvements include rerouting sections of the Dune Pond trail to divert traffic around sensitive areas and at the same time taking advantage of the Reserve’s diverse habitats, and installing a small boardwalk over the wetland and dune swale areas near the Dune Pond.

To clearly delineate the boundaries of the Reserve, the north and portions of the western boundaries were fenced. To encourage visitors to stay on the trails, a 3-5 meter buffer zone along the northern and western perimeter fences is being restored with native vegetation. The resulting dense band of shrubs acts as a living barrier. No Trespass signs are posted and maintained along the entire perimeter of the Reserve.
**Policies and Actions.** The Reserve manages internal trails and access within its boundaries. Passive recreation that does not harm natural resources or affect research and teaching is allowed on Sands Beach and the Dune Pond trail. Access to Sands Beach from adjoining beaches and via a passage near the Cliff House will remain open for pedestrians and appropriate recreational uses, except when there is a need for the protection of fragile coastal resources from uncontrolled public events (e.g. Floatopia, or Fiesta bikers).

As growth in the area continues, trespass on the Reserve may become a larger problem. If this occurs, the Reserve will consult with UCSB campus administration and the UCSB Police Department to improve enforcement of subsection (k) of section 602 of the California Penal Code which deals with trespass on “posted lands”, and UC regulations and policies that govern passage of non-University affiliates on University property.

**2. Inventory and Monitoring Program**

**Status:** The Reserve has an impressive list of over 1,000 species cataloged. Half of those are insects. Since the creation of the Reserve, researchers have intermittently monitored water quality and the occurrence of animal species, particularly birds, and intertidal invertebrates. Species lists are available at the COPR website (http://coaloilpoint.ucnrs.org). There is also a complete botanical species list with preserved reference specimens that are available to researchers and classes. A survey of insects was conducted by the Santa Barbara Museum of Natural History and the vouchers are available in the museum. All species collected were photographed and used to create a field guide for the insects in the Reserve. The Reserve Director collects natural history notes from casual observers. Reserve staff regularly monitors the Western Snowy Plover population.

**Policies and Actions.** The Reserve staff maintains a database of information on the natural resources of the Reserve, including species lists, abundance surveys, WSP breeding success,
vegetation maps, etc. The Reserve will collaborate with organizations and researchers to maintain data loggers and make the data available to researchers via the website.

3. Vector Control Program

**Status.** Many species of mosquitoes are native to COPR and have an important function as food for a variety of other insects, birds, fish and amphibians. Because of public health concerns and nuisance issues, the Mosquito and Vector Management District of Santa Barbara County (MVMD) monitors Devereux Slough, Devereux Creek, and other bodies of water on the Reserve for mosquito larvae and treats various sites to reduce or eliminate mosquitoes as needed. MVMD personnel have agreed to treat the areas of standing water on the Reserve with a biological control agent, Vecto-Bac, (active ingredient is *Bacillus thuringiensis*). In general, vector control practices in wetlands are viewed as negative impacts on wetland resources. The Reserve staff members are working with the MVMD to use practices that reduce impacts to wetland resources.

**Policies and Actions.** The Reserve Director and UCSB Environmental Health and Safety will work with the MVMD to ensure that the mosquito control methods used on the Reserve have the least harmful effect upon non-target organisms. Wetlands shall not be drained for this purpose, nor shall non-native larval predators be introduced to control mosquitoes.

4. Watershed Management Program

**Status.** COPR is in the lower part of the Devereux Watershed (Figure 5) and activities that take place on adjacent properties and surrounding properties within the watershed can affect the Reserve ecosystem. In 2014, the Ocean Meadows Golf Course was purchased and transferred to UCSB for restoration and management as the NCOS. The Reserve Director is a member of the Project Committee and will work closely with the Science Advisory Committee to consider potential impacts to the Reserve and avoid or mitigate such impacts. More details about the
collaboration about the NCOS and the Reserve are described in the Cooperative Management Program.

**Policies and Actions.** The Reserve Director will coordinate with, and encourage action by, the County of Santa Barbara, City of Goleta, and the Regional Water Quality Control Board and the Cheadle Center for Biodiversity and Ecological Restoration (CCBER) to see that adjacent land use guidelines are established and implemented in a manner that will sustain biological productivity and diversity. The campus shall support the implementation of measures to protect and promote enhancement of the biological functions of the Devereux Slough as outlined in the 2010 LRDP. The Reserve Director, by participating as a member of the North Campus Open Space Committee, will set as a high priority assessing the need for and securing resources from UCSB and similar stakeholders to address (mitigate and/or prevent) any pressures of increased development and restoration that could negatively impact the Reserves.
5. Flood Control Program

Status. Large areas of intensively developed lands above the Devereux Slough are subject to flooding, erosion, and the subsequent deposition of sediment and debris. Factors exacerbating flooding and sediment deposition in the slough and surrounding lands include large winter storm...
events, erosion of land in the lower watershed (Figure 5), fire and development in the upper watershed, and reduced drainage capacities in the Slough. In addition, obstruction of the estuary inlet by sand temporarily prevents the drainage of sediment-laden floodwaters to the Pacific Ocean. In 2002 the Santa Barbara County Flood Control District (District) conducted the first flood control project at Devereux Creek to remove sedimentation in the Creek. The District conducts flood control annually. The area immediately north of the Reserve, NCOS (the former Ocean Meadows Golf Course), is now owned by UCSB and is designated as open space in the 2010 LRDP; it is managed by CCBER. This area will be restored in the near future.

**Policies and Actions.** The UCSB campus and COPR projects shall be designed to minimize soil erosion and, where possible, to direct surface runoff away from coastal waters and wetlands. Sediment removal will implemented using best practices and methods that will minimize disturbance to wildlife and wetland habitats. To the degree that sediment buildup is amplified by activities occurring outside (e.g. upstream) of Reserve boundaries, the Reserve Director will work with UCSB and associated stakeholders to ensure that resources are provided by responsible parties to mitigate impacts and provide for sediment removal above current demands.

**6. Climate Change Program**

The Reserve has one mile of coastline which is home for threatened and endangered species such as the Pacific coast population of the Western Snowy Plovers and California least Terns. Climate Change will affect these species as the ocean level rises by reducing the amount of beach and dunes. The Reserve Director will work with other agencies and experts in the field of Climate Change to stay abreast of predicting these impacts, and look at solutions to the extent possible. The buildings at the Reserve are 30 ft above current sea level and should not be affected by sea level rise with the exception of possible increases in the rate of coastal erosion due to impacts of climate change on ocean currents, local changes in tidal flux, and the intensity of waves striking the shore.
D. ADMINISTRATIVE PROGRAMS

The Reserve operates within the mission and policies of the University of California and the UC Natural Reserve System. Coordination between the Reserve Director and the UCSB NRS office ensures that the Reserve is in agreement with general campus policies in relation to management of budgets and personnel, maintenance of infrastructure, and attention to health and safety issues. The system-wide NRS Office provides support and coordination of: (a) real estate, environmental, legal, and business matters as they affect any or all of UC NRS Reserves, (b) acquisition of new reserves, (c) periodic Reserve reviews; and (d) development of system-wide Reserve policies and practices.

1. Reserve Administration Program

Status. The UCSB NRS Director heads the campus NRS administrative office and oversees, with assistance of the UCSB NRS Associate Director, the six reserve directors who manage seven Reserve sites. The UCSB NRS reports to the UCSB Office of Research. The UCSB NRS campus administrative staff provides administrative support for the UCSB reserves with assistance from the Marine Science Institute. The UCSB NRS Advisory Committee, which is appointed by and reports to the UCSB Vice Chancellor for Research, advises the UCSB NRS Director on goals, policies and operations for the seven UCSB Reserves. The Advisory Committee includes two faculty members per Reserve. The COPR Faculty Advisor and the COPR Faculty Representative work with the COPR Reserve Director to advocate for the Reserve and provide advice about management and operational issues at the Reserve. The COPR Director, who lives on site, is in charge of day-to-day Reserve operations, and is responsible for approving users, overseeing the Reserve staff, creating programs, managing grants and budget, and seeking funds to implement Reserve programs. The Reserve presently has an annual budget to cover maintenance, operations, and the salaries and benefits for the Reserve Director and two full time staff. Extramural grants and donations have provided funds for restoration, internships, and the future Nature Center.
The Reserve Director informs, protects, and assists users and evaluates their applications. A release form signed by Reserve users protects the University from various liabilities and serves as a means to inform users of potential hazards. Recent safety improvements that have been implemented include a serviced porta-potty adjacent to the beach entrance and split rail fencing along cliff edges. COPR works with the UCSB campus to improve safety for visitors and users and seeks help from the UCSB campus to enforce regulations and manage recreation on the beach.

Policies and Actions. The Reserve Director has primary responsibility for approving applications, and will coordinate management and all other uses of the Reserve. In consultation with the UCSB NRS Director, the UCSB NRS Associate Director, the UCSB NRS Faculty Advisors, and the COPR Advisory Committee, the Reserve Director will address use conflicts and Reserve policy.

2. Fiscal Program

Status. UCSB funds a resident full-time Reserve Director, two staff positions, and a recurring annual budget for maintenance and to maintain the Snowy Plover Program. The recurring budget is augmented by extramural grants and donations acquired by the Reserve Director. The Restoration Plan and the proposed Nature Center are funded primarily by grants and donations. The improvements underpinning the Access Plan (Appendix 1) were funded by UCSB and by the California Coastal Conservancy. The Coastal Fund, an UCSB student organization, regularly funds internships for students who assist in various programs.

Existing Policies. The Reserves may establish an appropriate fee structure for use of the Reserve’s facilities by users for research, instruction and public outreach (NRS Use Guidelines). COPR will establish a rate structure for use of the Nature Center facilities when the building is completed.

3. Health and Safety Program
**Status.** The release form signed by formally-authorized Reserve users protects UCSB from various liabilities and serves as a means to inform users of potential hazards. Slough Road is a narrow road heavily used by pedestrians. The risk of accidents in this road will be eliminated when Slough Road is closed to vehicle traffic as stipulated in the UCSB 2010 LRDP as a condition for development of the North Knoll of the UCSB West Campus Devereux property by UCSB. A portable public restroom was placed at the Coal Oil Point Reserve to improve sanitation.

**Policies and Actions.** Applications to use the Reserve will be evaluated for safety. Noise will be kept below 60 db. Fires and barbecues are not permitted on Sands Beach. To continue to provide appropriate health and safety procedures for COPR and maintain reasonable physical conditions of safety, the Reserve will: (a) make emergency kits available to users; (b) inform COPR staff of possible hazards associated with working at the Reserve and, when applicable, train them in safety procedures; (c) develop and post the COPR Reserve Emergency Operations Plan; (d) provide necessary safety equipment to workers and volunteers where needed; (e) support efforts to improve speed control along Slough Road until it is closed to vehicle traffic; (f) post fire policies at beach entrances; and (g) work with the campus police to improve compliance with the Santa Barbara County leash ordinance and UC regulations.

**4. Catastrophic Event Response Program**

**Status.** COPR is potentially subject to catastrophic events from flooding, tsunamis, oil spills and toxic gases associated with adjacent oil operations. The site is within an active tectonic zone, where a strong earthquake could cause damage to oil facilities nearby and generate a tsunami.

**Policies and Actions.** The Reserve will be consistent with the UCSB Campus Catastrophic Event Response Program. Permanent structures will not be placed on faults or bluffs. The Reserve will assist other agencies working to develop and implement response protocols in the area. The Reserve will develop a specific rapid-response protocol for potential catastrophic natural events that dovetails with UCSB campus guidelines.
5. Cooperative Management Program

**Status.** The Reserve is surrounded by developed urban areas and open spaces. Management and activities in these areas can impact the Reserve. The Reserve has worked with CCBER and UCSB Facilities Management to ensure that other University-owned properties adjacent to the Reserve are managed in a way that do not infringe on the Reserve practices, procedures and policies. The City of Goleta and the UCSB campus are growing and attracting more people who visit the Reserve. This creates additional impacts and burden on the management of the Reserve. New technologies such as drones and motorized bicycles, threaten unprecedented impacts. The Reserve needs new policies to deal with these impacts.

**Policies and Actions.** The Reserve will consider the campus requests for COPR to manage the north and south fingers of the Devereux Slough and to cooperate with management efforts in other sensitive areas adjacent to the Reserve. Restoration in surrounding UCSB open space shall use native genotypes from seeds collected in the Reserve.

Several aspects of the development and restoration of the adjacent North Campus Open Space (NCOS) may affect the Reserve. The restoration itself should be done in such a way as to enhance or expand the biological functions of the Devereux Slough, but not impact it through changes in hydrology or sedimentation, for example. The design of the NCOS should consider wildlife corridors through the open space that connect the Reserve with pathways to other nearby open space areas such as the Goleta Slough and Ellwood. The NCOS may also be designed to serve as a buffer of impacts from sea level rise by creating habitats that would replace future flooded habitats.

The Reserve Director is a member of the NCOS Project Committee which will work with the consultants to develop the detailed design for the restoration and access plan of the NCOS. The Reserve Director will also work with the chair of the NCOS Science Advisory Committee to consider potential impacts and mitigation measures. Participation by the Reserve Director as such ensures that the NRS is represented as potential impacts of this large scale restoration project adjacent to the Reserve are considered. The main objective in NRS representation is
ensure that impacts of the NCOS restoration on the Reserve are minimized and that any impacts that cannot be avoided are appropriately mitigated. Overall, this project is expected to provide great benefits to the Reserve by increasing the size the wetlands in the slough and restoring adjacent habitat.

The COPR Director will work with the University to create a West Campus Natural Areas Committee comprised of the COPR Reserve Director and the managers of the various open spaces and grounds overseen by University groups. The ecosystem and habitats of the West and North Campus areas are more or less connected and must be jointly protected. Activities that occur in one area of West and North Campus can impact biological, cultural, and archeological resources the other nearby areas. This committee will provide the opportunity to coordinate projects and activities to ensure an effective overall management strategy. The committee will meet twice a year or more often if needed to share updates and coordinate planning.
E. INFRASTRUCTURE AND FACILITIES PROGRAM

**Status.** The COPR Infrastructure Plan (Appendix 4) describes the existing infrastructure in detail. Existing infrastructure at the Reserve includes buildings, greenhouses, utility lines, communications, culverts, fences, trails and roads, and research equipment. The buildings, greenhouses and utilities are located at the COPR field station on Coal Oil Point within the Reserve. The infrastructure provides crucial support for operations, maintenance and programs at the Reserve. In addition to these structures, the COPR Reserve Director lives at the field station, as a condition of employment. The Reserve Director’s residence has an adjacent fenced yard with a garden, small greenhouse and animal enclosure that are for the private use of the Reserve Director and the Reserve Director’s family.

The Reserve will retain and maintain all existing infrastructure located at the Reserve, including all buildings, and does not propose to construct any new buildings within the Reserve boundary. The Reserve will renovate a building on UCSB’s Devereux property to serve as the COPR Nature Center. This facility will not replace existing infrastructure at the Reserve field station, but will provide additional space that COPR has long-needed to support its current research, education and administrative programs, and to provide opportunities for enhanced programs in the future.

**Policies and Actions.** The management plan will identify the optimum allowable facilities for resident staff, researchers, classes, and public outreach programs (UC NRS Guidelines). In general, existing and new infrastructure will be minimal, consolidated, and adjacent to the Coal Oil Point Reserve. The existing infrastructure at the Reserve shall remain and be maintained. The confined animal enclosure will support animal keeping (LRDP Policy LU-34 (c)).
2010 LRDP Policies Applicable to the COPR

Policy LU-33 – Within two years of the effective date of certification of the 2010 LRDP, the University shall prepare and submit a Coal Oil Point Reserve Coastal Management Plan to the Coastal Commission as an amendment to the 2010 LRDP. No new structures shall be approved on the Reserve until the Plan is certified by the Coastal Commission.

The purpose of the Plan shall be to comprehensively identify existing and planned development, maintenance, and programs at the Reserve that are consistent with coastal resource protection under the Coastal Act and the certified LRDP. The COPR Coastal Management Plan shall specifically identify: a baseline of all existing development on the Reserve (including confined animal facilities); the development’s date of installation; permitting history; existing Reserve programs (e.g., the snowy plover management, wetland restoration, native plant species cultivation); existing maintenance operations such as location, timing and methods of fuel modification; and status of habitat restoration activities.

The Plan shall provide a detailed description of all development, maintenance, and programs that are proposed to continue on the Reserve. The Plan shall augment the biological resource mapping (Figure F.2) effort on campus, both on and off the Reserve, based on current (within 1 year) and historic resource surveys for all areas within 300 feet of proposed Reserve development, maintenance, or management programs. The Plan shall evaluate the consistency of the proposed development and activities with the Coastal Act.

Policy LU-34 – At the Coal Oil Point Reserve Field Station site the following standards shall apply:
A. No new structures shall be approved within the Reserve Field Station until the Coal Oil Point Reserve Coastal Management Plan is certified by the Coastal Commission pursuant to Policy LU-33.
B. Vehicular access to the site shall be from West Campus Point Lane after vehicular restrictions are placed on Slough Road consistent with Policy TRANS-12.
C. (Proposed new policy) A Confined Animal Facility (CAF) and Animal keeping at the Reserve Director’s residence shall require a Notice of Impending Development. The CAF shall house no more than 10 adult animals, up to 20 youth or newborn animals and not to exceed 30 total animals at any time. A manure waste management plan shall be required. Animal grazing is prohibited on the Reserve or in adjacent Open Space areas without a grazing plan approved by the Coastal Commission.

Policy ESH-07 – Construction noise levels shall not exceed state standards of 65dB(A) at property lines except at Coal Oil Point Reserve where the maximum allowable construction sound levels shall be more restrictive and shall not exceed 60 decibels on the A-weighted scale.

Policy ESH-10 – The University shall use mosquito control methods with the least effect upon non-target organisms and shall use environmentally sensitive pesticides (such as VectoBac®). Wetlands shall not be drained for this purpose, nor shall native wetland vegetation be removed, nor shall non-native larval predators be introduced.
Policy ESH-26 – Motor vehicles and dogs shall be prohibited in campus wetlands. Motor vehicles (except for service and emergency vehicles) and unleashed dogs shall be prohibited on campus beaches; Dogs shall be leashed and kept on designated trails where such trails are routed through open space or environmentally sensitive habitat areas. Swimming shall be prohibited in the Campus Lagoon and Devereux Slough. Signs restricting such access and activities shall be posted.

Policy ESH-28 –
A. The routine trimming and/or removal of trees on campus necessary to maintain campus landscaping or to address potential public safety concerns shall be exempt from the requirement to obtain a Notice of Impending Development (NOID), unless otherwise required pursuant to subparagraph B, below, and provided that the trimming and/or removal activities are carried out consistent with all provisions and protocols of the certified Campus Tree Trimming and Removal Program in Appendix 2, except that the following shall require a NOID:
1. Trimming and/or removal of trees located within ESHA or on lands designated Open Space as covered in Policy ESH-29,
2. The removal of any tree associated with new development, re-development, or renovation shall be evaluated separately through the NOID process as detailed in subparagraph C, below;
3. The removal of tree windrows, and
4. Trimming and/or removal of egret, heron, or cormorant roosting trees proximate to the Lagoon.

B. All tree trimming and tree removal activities, including trimming or removal that is exempt from the requirement to obtain a Notice of Impending Development, shall be prohibited during the breeding and nesting season (February 15 to September 1) unless the University, in consultation with a qualified arborist, determines that:
1. Immediate tree trimming or tree removal action by the University is required to protect life and property of the University from imminent danger, authorization is required where such activity would occur in ESHA or Open Space through an emergency permit,
2. Trimming or removal of trees located outside of ESHA or Open Space areas during June 15 to September 1, provided where a qualified biologist has found that there are no active raptor nests or colonial birds roosts within 500 feet of the trees to be trimmed or removed, or
3. Is part of a development or redevelopment approved pursuant to a Notice of Impending Development.

C. To preserve roosting habitat for bird species and monarch butterflies, tree(s) associated with new development, re-development, or renovation that are either native or have the potential to provide habitat for raptors or other sensitive species shall be preserved and protected to the greatest extent feasible. Where native, or otherwise biologically significant, trees are retained, new development shall be sited a minimum of five feet from the outer edge of that tree’s canopy drip-line. The removal of such trees shall be evaluated pursuant to the Notice of Impending Development for the new development. Prior to the removal of any native and/or sensitive tree for development purposes, the University shall conduct biological studies to show whether the tree(s) provide nesting, roosting, or foraging habitat for raptors and sensitive bird species, aggregation or significant foraging sites for monarch butterflies, or habitat for other sensitive biological resources. The Commission may condition the subject Notice of Impending Development to secure the seasonal timing restrictions and mitigation requirements otherwise set forth in the Campus Tree Trimming and Removal Program in Appendix 2.
Policy ESH-29 – Trees located within ESHA or designated Open Space shall not be trimmed or removed unless determined by a certified arborist to pose a substantial hazard to life or property and authorized pursuant to an emergency permit, or where the proposed removal is part of a Commission-approved habitat restoration plan, and shall require a Commission-approved Notice of Impending Development. All tree trimming and removal activities shall be consistent with the seasonal timing restrictions and mitigation requirements set forth in the Campus Tree Trimming and Removal Program in Appendix 2. The following Open Space areas shall be subject to the requirements for routine campus tree trimming and removal practices and shall not be considered as “Open Space” for the purposes of this policy: Commencement Green, UCEN lawn, and Pearl Chase Garden.

Policy ESH-45 – The University shall provide, on an ongoing basis, for one full-time equivalent (FTE) steward for the South Parcel nature park area, and an FTE Coal Oil Point Reserve Snowy Plover Coordinator position.

Policy ESH-47 – The water quality of the Devereux Slough shall continue to be monitored by the Coal Oil Point Reserve, including salinity, nutrient loading and identification of upstream sources of sedimentation. Botanical, invertebrate, and vertebrate monitoring and data analysis shall be conducted periodically.

Policy ESH-50 – The University shall continue to implement the Commission-approved Beach Access and Snowy Plover Management Plan for the term authorized in the applicable Coastal Development Permit. An updated Plan shall be prepared by a qualified biologist or environmental resource specialist to renew authorization of the program through the coastal development permit process. Any changes to the Plan shall require Coastal Commission review and approval. The plan shall allow for continued public access at Sands, Ellwood, and West Campus Beaches while providing protection of snowy plovers and other sensitive bird species from human-associated disturbances.

A. Any developments or changes to the Beach Access and Snowy Plover Management Plan, including in use of parking, trails, accessways, or facilities in the vicinity of Coal Oil Point, and Sands, Ellwood, and West Campus beaches, shall consider and mitigate impacts on populations of snowy plover and other sensitive bird species in the area.

B. Horses shall not be allowed on beach and trail areas with active nesting or over wintering populations of Snowy Plover, including but not limited to Sands and Ellwood beaches, as well as spur trails leading from Coal Oil Point and the Coastal Trail to these beaches. Dogs shall be leashed in these areas. Future use of these areas by horses may be allowed pursuant to approval of the Beach Access and Sensitive Species Management Plan or other plan that ensures that such activities will not have an adverse impact on snowy plover or other sensitive species.

C. The University shall coordinate with Coal Oil Point Reserve Staff, docents, and campus police to continue to implement the Enforcement Program to ensure that the above-mentioned habitat protection measures and plan are enforced.

Policy FIL-2 – Where restoration of Devereux Slough includes dredging, then sediment removal and spoils disposal activities shall be planned.
Policy MAR-05 - Wetland and riparian vegetation enhancement shall be conducted, to the maximum extent feasible, along Devereux Creek and Devereux Slough, including the areas known as the North and South “Fingers” of the slough.

Policy TRANS-12 - In order to prevent adverse effects to the Coal Oil Point Natural Reserve, the following roadway and circulation measures shall apply on West Campus:
A. Vehicular access to West Campus shall be from the intersection of Storke and El Colegio Roads. The Campus shall coordinate and contribute to the installation of traffic control devices and other improvements at that intersection;
B. Slough Road shall be converted exclusively to use by pedestrians, bicyclists, and essential emergency vehicles and shall not be expanded beyond its existing footprint. All West Campus development shall utilize West Campus Point Lane for vehicular access. Vehicular access to Coal Oil Point Reserve (the Reserve) and the ADA coastal access parking spaces at Coal Oil Point shall utilize West Campus Point Lane, but shall be allowed to merge onto Slough Road through the Devereux South Knoll site in order to reach the applicable destination. The conversion of Slough Road shall be completed prior to occupancy of the first redevelopment project or other significant construction of 10,000 GSF or greater on West Campus at either the West Campus Mesa or North Knoll site.
C. The existing West Campus Point Lane crossing of the North Finger of Devereux Slough, from West Campus Mesa to North Knoll, shall be replaced with a bridge, or alternative crossing that retains a natural open connection, to maximize wetland connectivity and avoid fill of wetlands. The construction of the new bridge or crossing shall be completed no later than prior to occupancy of the new residential construction on the North Knoll of the Devereux property. However, the bridge, or crossing, shall be installed earlier if significant structural changes or roadway modifications are necessary to accommodate traffic in the area of the Slough crossing prior to North Knoll development
D. Emergency vehicle, bicycle and pedestrian access may be provided from the existing Isla Vista streets of Fortuna or Pasado Roads; and
E. Where deemed to be biologically beneficial, the University will replace the wetland crossings on Slough Road with crossings that are designed to restore the connection between the North and South Fingers to Devereux Slough and to avoid fill of existing and historic boundaries of the wetland to the maximum extent feasible. The replacement will occur as funding is available. The University will pursue potential University and non-University funding options to implement this project.

Policy TRANS-21 - Pedestrian access to the beach shall be maintained from North and West Campus. Vertical access to the beach shall at a minimum be provided at the following locations:
A. A new stairway along West Campus Bluffs midway between Camino Majorca and Coal Oil Point;
B. A boardwalk/stairway at the Sands Beach entrance from Coal Oil Point;
C. The Dune Pond Trail through Coal Oil Point Reserve; and
D. A trail from the coastal access parking lot at the west terminus of Phelps Road via a trail along the western boundary of North Campus that outlets to the beach. Trail access up-coast along the bluff top should be marked with appropriate directional information and cautions against intrusion down the steep bluff face.
Policy TRANS-24 - Public access shall be allowed within and around the Coal Oil Point Reserve, consistent with the Coastal Access Program and Trails Maps (Figures E.3 and E.4). Fences, signs and information maps delineating the perimeter of the Reserve shall be provided and maintained to restrict unauthorized access by pedestrians, dogs, motor vehicles and off-road bicycles (except essential service and emergency vehicles) for the purpose of protecting the Reserve’s sensitive resources by encouraging and directing the public to remain on the authorized trails. Restrictions placed on coastal access, such as limits on timing or location of access, require authorization pursuant to an LRDP Amendment, except for temporary closures for emergencies or to protect fragile coastal resources consistent with Policy PA-06.

Policy TRANS-26 - Any changes to the development and implementation of open spaces, public access and trails planning for North and West campuses, including the Coal Oil Point Reserve, shall be coordinated with the City of Goleta, the County of Santa Barbara, and the California Coastal Commission.
F. APPENDICES TO THE COPR MP
Appendix 1. Coal Oil Point Reserve Access Plan

The Coal Oil Point Reserve recognizes the value of the public experiencing and appreciating the Reserve’s unique habitats. Its relatively liberal access policies are an exception to general Natural Reserve System policy and represent an opportunity for the Reserve to promote its education and outreach missions. Implementation of the Access Plan provided appropriate forms of public access while protecting sensitive habitats. For example, in 2000, the Reserve created 1,500 feet of new interpretive trails along the Devereux Slough margin to promote environmental education and increase pedestrian safety while planting the margin of the slough with native vegetation. Benches and interpretive signs have enhanced the public’s experience and their understanding of the Reserve’s fragile ecosystems.

The public can access the beach from West Campus Beach and Ellwood Beach and from 3 access points on the bluffs, at the eastern boundary of the Reserve near the Cliff House, at the southern terminus of the Dune Pond trail, and at the western boundary of the Reserve adjacent to Ellwood Bluffs (Figure 1). The eastern bluff access point near the Cliff house has been improved with a new split rail fence. There is a control gate that restricts access to pedestrians and inhibits access by motorized vehicles, bicyclists and equestrians. Visitors proceed down the cliff along a trail that follows the edge of the foredunes and reaches the beach near the plover area.

Status. The Access Plan (NOID1-10) has been fully implemented. In summary, the northern and western boundaries of the Reserve were partially fenced, old chain link fences were replaced with Woodcrete fences, and unauthorized trails were closed and restored.
In June of 2011, an electric gate was installed at the main entrance to the Reserve. The small parking area (up to 15 cars) inside the reserve is restricted to approved Reserve users. Restricting the parking access has helped limit inappropriate recreational use of sensitive habitats on the Reserve. Public parking has been created on the Devereux Campus.

Foot traffic and leashed dogs are allowed on the beach except within the dry sand areas of the plover roost and nesting areas, which are designated by a post and rope fence and signs (see Snowy Plover Management Plan). The post and rope fence surrounding the roost area in winter
will be extended during the breeding season to also protect nesting birds. Horses are not allowed on the beach to avoid disturbance to plovers and other shorebirds. A beach corridor is provided so that lateral movement of people along Sands Beach is not impaired. Docents will staff the beach area and provide information to the public about plover protection measures. The Delta path has been permanently closed to reduce foot traffic through the plover roost as per the Coastal Commission decision of November 16, 2001 (NOID 1-01). Group recreational activities that may cause disturbance to shorebirds, such as Frisbee, football, kite flying, and surf contests, are not allowed on the beach. The Reserve works with the campus police to achieve compliance with restrictions on alcohol intoxication and prohibitions of fires and camping in the Reserve (including the beach area), and to reduce vandalism, litter and trespassing. The Reserve will also work with campus police to achieve compliance with the Santa Barbara County leash ordinance. Lack of compliance with beach regulations that causes harm to the Reserve’s natural resources, including snowy plovers, will cause access on Sands Beach to be re-evaluated and additional measures will be put in place to ensure protection of the Reserve and the plovers.

**Policies and Actions.** Public access and leashed dogs are permitted on the beach except in the designated snowy plover roost and nesting areas delineated by a post and rope fence. The public is also permitted in the Dune Pond Trail but dogs and horses are not. When there is a conflict between conservation of natural habitats (or research areas) and access, access will be modified to accommodate the conservation priorities. The Reserve will manage internal trails and access within the Reserve boundaries to protect natural resources and research projects. The Reserve retains the right to request termination of an activity that harms natural resources, including wildlife. Surf contests and try-outs and launching of kite surfing from the beach are not allowed because of the great disturbance they cause to wildlife.
Figure 1. Map of access points at COPR.
Appendix 2. Western Snowy Plover Management Plan

Snowy Plover Management Plan
Updated 2015

Summary.
UC Santa Barbara's Coal Oil Point Reserve (COPR) manages 170 acres of coastal habitats including the beach to the mean high tide. Sands Beach near the Devereux Slough mouth is a wintering and breeding site for the threatened Western Snowy Plover (WSP), and occasionally the endangered California Least Tern.
The Reserve is the first site to recover a historical breeding site of plovers that was terminated from human disturbance. Breeding of WSP had stopped at the Reserve when the beach became open to the public in the late 1960s. Evidence suggests that increased public use caused intense disturbance and contributed to the cessation of breeding. In 2001, the Reserve proposed a plan to reduce the disturbance to the wintering population. The plan was approved by the California Coastal Commission on November 16, 2001. The plan included the following actions: (1) installation of educational and regulatory signs, (2) closure of the Delta path that terminated in the plover roost area, (3) installation of a post and rope fence along a 400 meter stretch of beach above the mean high tide, (4) creation of a program to enlist docents to monitor plovers on the beach and educate the public about plovers, and (5) implementation of actions to reduce disturbance by official Reserve users, the public (e.g. direct public activities away from the roost area), domestic animals (e.g. increase compliance with leash rules and ordinances), and predators (e.g. reduce crow activity by cleaning up trash).

Immediately after the implementation of these actions, the plovers began breeding at the Reserve again. To accommodate for the new breeding population, the symbolic fence was extended to the west during the breeding season, and a predator control program started in 2008.

This program was hugely successful but a fast growing population in Goleta and on the UCSB campus creates new challenges for the protection of the beach. This plan identifies the need for new funds to maintain the Reserve and protect its beach from overuse. We plan to achieve these objectives through increased education efforts, a dedicated enforcement program, and a predator control program.

**Rationale**

The Pacific population of WSP is listed as threatened by the US Fish and Wildlife Service (USFWS) under the Endangered Species Act (ESA). The beach that extends from the western edge of Isla Vista to the middle of the Ellwood Mesa area, including Sands Beach at UCSB Coal Oil Point Reserve has been designated as critical habitat by the USFWS. Protective management of plovers at Sands Beach is necessary because the beach is open to the public. Public recreation has been one of the main causes of breeding site degradation and plover decline along the Pacific
Coal Oil Point Reserve

Coast. People unknowingly disturb wintering plovers and may trample eggs or chicks during the breeding season. Because the UC Natural Reserve System’s mission is to protect natural areas for research, education, and public outreach, COPR has the opportunity and responsibility to be engaged in an active and creative plover management plan.

History

Lafferty (2000) reviewed the status of snowy plovers at Coal Oil Point in an effort to aid management decisions by the Reserve. A study of the types of disturbances experienced by snowy plovers and other shorebirds at the Reserve was also undertaken (Lafferty 2001a, b). These studies suggested several actions for managing snowy plovers and shorebirds at Coal Oil Point. Waldo Abbott, a long-time natural historian and former curator of the Santa Barbara Natural History Museum had watched snowy plovers (and other wildlife) disappear from Goleta beaches. In a 1972 interview, he reflected on the link between increased public access and losses of sensitive wildlife and, in particular, the importance of prohibiting dogs on the beach at Coal Oil Point (Kellogg and Yokota 1972). In “Recommendations for the Future Management of Environmental Lands: West Campus”, ornithologist Paul Lehman recommended a leash enforcement plan to reduce disturbance. The 1990 Long Range Development Plan (LRDP) required that the UCSB prohibit dogs on campus beaches and restrict parking at COPR, although in the past, the campus did not enforce the prohibition of pet dogs in the area. The 2010 LRDP prohibits dogs on campus beaches. Fahy and Holmgren (1993) proposed fencing potential nesting areas, beach closure between March and June, a public education campaign, enforcement of pet dog restrictions, habitat restoration and, if plovers were to breed, predator enclosures around nests and predator removal. They also suggested considering the reintroduction of large predators such as coyotes and bobcats to control the introduced red fox. Meeker (1996) recommended greater restrictions on access (especially for pet dogs) to the area of beach used by plovers. De Chant (S.B. Audubon, in. litt. 1997) asked that the University prohibit pet dogs, provide public education, and minimize access points near the roost. Coon (letter, 1997) acknowledged the willingness of the Reserve to experimentally close the beach, use volunteers to reduce disturbance, enforce existing pet dog restrictions, provide public education, restrict equestrian and motor vehicle access, and investigate other access controls. There is a current Santa Barbara County ordinance that requires dogs to be on leash on all public lands, but this law is rarely enforced in the county.
In 1997, and again in 2001, the Santa Barbara Chapter of the Audubon Society requested that UCSB develop a management strategy for snowy plovers (e.g., De Chant letter, 1997). The USFWS expects local management entities, such as COPR, to develop successful management plans and in 1997 asked for the Reserve's participation in the recovery plan process (Coon letter, 1997). In 1999, biologists from the Ventura Field Office of the USFWS visited the Reserve and determined that recreation was leading to "take" (i.e. harm, harass, pursue, hunt, shoot, wound, kill, trap, capture, or collect any threatened or endangered species) of plovers as defined by the Endangered Species Act (D. Noda letter, 1999). Instances of take are in potential violation of Section 9 of the ESA, particularly if the property owner does not make satisfactory efforts to minimize them, and can result in a $200,000 fine for each infraction. An estimate of the rate of "take" of snowy plovers at the Reserve was around 150,000 incidents per year in 1999 before management began (Lafferty 2001).

The USFWS requested that the University apply for an incidental "take" permit, pursuant to section 10(a)(1)(b) of the ESA (Noda letter, 1999). An incidental "take" permit allows a landowner to legally proceed with activities that would otherwise result in an illegal "take" of a listed species. An incidental "take" permit is legal protection for a landowner in case a listed species is "taken" despite the owner's best efforts. The necessary components of a completed permit application are a standard application form and a low-effect Habitat Conservation Plan (HCP).

Subsequently, in lieu of an incidental "take" permit, the USFWS suggested that UCSB develop a management plan to reduce disturbance. The Reserve has taken the lead in developing a management strategy for plovers and has management authority within its boundaries. The campus assists the Reserve in limiting impacts from recreational activities by providing police and parking services enforcement of beach and parking regulations.

In 2001, the USFWS released the draft Western Snowy Plover Recovery Plan, providing goals and management guidelines. Goals set for COPR were four breeding adults (with a five-year average of one fledged chick per breeding male) and protection of the wintering population from disturbance. Because the plover recovered so well at the Reserve, the recovery goal was increased
Coal Oil Point Reserve

to 25 in 2007. The Reserve’s SPMP was written to be consistent with the USFWS recovery plan. The Service reviewed the COPR draft SPMP and provided a comment letter in October, 2001. In this letter, the Service suggested additional efforts to reduce trash and crows and more restrictive actions if goals were not met.

Status of implementation of the Snowy Plover Management Plan at the Reserve

1. Public Education

The Reserve instructs its users to avoid the plover area, leash their dogs, and walk along the ocean edge. Public education is provided through monthly field trips, slide shows, and a docent program that started in June 2001. The docent program has been a huge success in educating beach users and improving compliance with the leash law and restricted areas. The volunteer docents are recruited in the community and at UCSB. In addition, the Reserve seeks funds from grants for paid interns to fill shifts that are not chosen by the volunteers. The docent program staffs the beach approximately 3,000 hours per year (Figure 1), during daylight hours, 7 days a week. The Reserve is in the process of creating a Nature Center which will provide more ways to educate the visitors, such as exhibits and short films. More education needs to be done to target specific audiences such as freshman students living in the UCSB housing, particularly the new dorms close to the Reserve.
Figure 1. Average number of hours worked by snowy plover docents per year.
2. *Fencing during the Winter*

The Reserve continues to fence the main roost area during the winter to reduce disturbance to plovers (Figure 2). Beach erosion in the last 4 years has taken down the symbolic fence making the protection of plovers more challenging. There are several weeks each Winter when the plover population is not protected with fences because of beach erosion and high surf.

Figure 2. Map of Sands beach and COPR showing the locations of the symbolic fence to protect WSP during the breeding and winter season and the nests recorded in 2014. Note that the Winter fencing is often smaller than depicted in the figure because of beach erosion.

3. *Fencing during the breeding season*

Each breeding season, the Reserve extends the symbolic fence to the west end of the Reserve. Ideally the symbolic fence is installed on March 1st but beach erosion has forced us to wait until later to install the fence. The Western Snowy Plover habitat at COPR has narrowed substantially because of beach erosion, reducing the carrying capacity of the system for plovers. This makes it difficult to protect the plovers from disturbances because people recreating on the beach are now
closer to the plovers, increasing the chances of disturbances to nests and chicks. As a result, nests have been less common east and west of the slough mouth and are now concentrated at the mouth of the slough and the slough mudflats (so long as the water level in the slough is low). We will continue to monitor the population of plovers and work with researchers studying beach erosion to attempt to understand and monitor these changes to the plover habitat.

4. Enforcement of beach use rules
The beach is open to the public for recreation. Despite the efforts of the docent program, not everyone complies with the regulations aimed at reducing disturbances to the plovers. Enforcement of the leash law has been the main regulatory problem that still exists. The Reserve posted the leash regulation on signs at all entrances of the Reserve. The docents talk to pet owners and request compliance with the leash law. Docents carry leashes to distribute to pet owners who do not have leashes. The docents also restrain dogs without owners and, if they cannot find the owner, they call County Animal Control to remove the dog from the beach. Docents call campus police if dog owners refuse to comply with the leash regulations. The number of unleashed dogs on the beach has declined since these measures have been implemented (Figure 3). Yet 40% of dogs (Figure 4) arriving at the beach are unleashed and this poses a risk to plover nests and chicks. Many unleashed dogs come from Ellwood beach, where there is no enforcement.

Figure 3. Number of dogs at Sands Beach per hour.

![Figure 3. Number of dogs at Sands Beach per hour.](image)

Figure 4. Proportion of dogs off leash per hour
Horses are not permitted at the beach on COPR and Ellwood. Some horses still access the reserve through Ellwood bluffs and Access D.

Trespassing has decreased over the years (Figure 5) but it still occurs occasionally (about one per day). The docents talk to the trespassers or call the campus police.

The Reserve Director will work with campus Administration to get dedicated enforcement authority such as a CSO at the beach to deal with all of the public enforcement issues. The plover docents are meant to be educators and not enforcement officers. New funds from the University need to be allocated for this purpose as enforcement of beach recreation is not the Reserve’s responsibility.
Figure 5. Number of trespassers into the plover area per hour.

5. Signage

Signs showing a map of the plover area and the beach regulations were posted at all entrances of the Reserve. Along the plover fence, additional signs request that users stay along the ocean’s edge (Figure 6).

Figure 6. Sign posted at the beach entrance and near plover area.
6. Monitoring of plovers

Reserve staff and trained volunteers monitor plover nests and chicks a minimum of 3 times per week during the breeding season. Although chicks are not banded at the Reserve, the small area makes it possible to determine the fate of each brood until the chicks fledge. The Reserve is required to submit an annual report to the California Coastal Commission and the US Fish and Wildlife Services. A summary of the breeding success is shown in Figure 7, 8, and 9.

Figure 7. Number of adults of WSP counted in the breeding window surveys.

![Breeding Window Survey](chart1.png)

Figure 8. Number of WSP nests that successfully hatched each year at COPR.

![Number of nests that hatched](chart2.png)
Figure 9. Number of fledged chicks of WSP at COPR

![Fledged Chicks at COPR](image)

7. Monitoring of beach use

The docents count the number of people on the beach and in the ocean at the beginning of each docent shift (2 hours) (Figure 10). They also record the numbers of leashed and unleashed dogs on the beach and the number of trespassers. They note whether the interaction with the dog owner or trespasser is positive and compliant.

Figure 10. Year average of the number of beach users counted during snapshot surveys. At the start of every shift, each docent does a count of all people present on the COPR beach (sunbathing, jogging, bird watching, etc).

![Average Count of Beach Users per Survey](image)
Figure 8. Year average of the number of people using the ocean during snapshot surveys. At the start of every shift, each docent does a count of all people in the ocean at COPR (surfing, swimming, etc).

8. Predator Control

Coal Oil Point Reserve has contracted USDA Wildlife Services at since 2008 to conduct predator management activities in the plover nesting area during the breeding season. USDA traps and removes mammalian predators that are found in the nesting area. New funds need to be identified for this effort as the Reserve does not have a recurrent budget for controlling predators.

To reduce crows, the Reserve replaced all trash cans and dumpsters with ones having secured lids. Also, the docents scare off crows that approach the protected area. Crow use of the beach has declined, but constant vigilance and removal of individual crows that prey on nests is still required to protect plover eggs and chicks.
Appendix 3. Coal Oil Point Reserve Restoration Plan

Prepared by Cristina Sandoval, Reserve Director, and Tara Longwell, COPR Restoration Specialist

BACKGROUND

The UC Natural Reserve System is charged with the stewardship of and preservation of native habitats. Therefore, degraded habitats should be restored and exotic species removed. The Coal Oil Point Reserve (COPR or the Reserve) contains about 170 acres of diverse coastal habitats. Approximately 1/4 of this area has been impacted from agricultural practices before it became a reserve. The Reserve’s goal is to restore degraded habitats to a close proximity of their historical condition while contributing to the recovery of endangered and rare species, when appropriate.

Restoration at the COPR includes 3 main types of work: a) control of exotic weeds, b) revegetation with native species of the appropriate habitat type, and c) replacement of exotic trees with native trees.

A. CONTROL OF EXOTIC WEEDS

The most important exotic species (other than trees) that have been removed or are still being removed include acacia, myoporum, tamarix, fennel, thistles, harding grass, pampas grass, german ivy, iceplant, and annual grasses.

The removal of small herbs and grasses is primarily accomplished by hand-removal, mowing, solarization, and/or herbicide application (in the case of harding grass and fennel). There is no grading or excavation used, except for the holes made to insert the seedling in the ground. The soil is not tilled. Exotic perennial shrubs and trees are cut at the base and herbicide (Glyphosate) is applied on the base to kill the roots so they do not sprout again. Whenever possible, exotic trees and shrubs are chipped and left on site as mulch.
An annual exotic grassland was mowed in 2012 on the north west corner of the reserve to control annual grasses. In the following year, a number of *Lupinus bicolor* and California poppy grew in the mowed area. Mowing with a hand mower or small tractor is now used routinely to control exotic grasses and annual weeds.

An accidental fire occurred in the western portion of the Reserve in June of 2014 and burned 20 acres. By September of 2014, several burned areas had already grown back with native vegetation, including the edges of the dune pond (photos on the right). Such disturbances (mowing and fire) had positive effects on the control of weeds and the establishment of native vegetation. Prescribed disturbances such as mowing, raking, and fires, may be used in the future for restoration in the reserve, when appropriate.

**B. REVEGETATION**

In 2003, a panel of specialists has been consulted about the restoration of the grasslands at the Reserve. This plan is available upon request. The panel suggested that research and education be encouraged in conjunction with the implementation of restoration projects to the extent possible.

The plant species used in restoration depends on habitat and soil type. The proportion of each plant species and how they are distributed spatially are characteristics of each plant community, which the Reserve staff seeks to replicate in restoration projects. Areas of the reserve that have not been disturbed in the past have been used as templates for the restored sites.
Plants for the re-vegetation are propagated in the reserve’s greenhouse from seeds collected in the reserve. Plant species that don’t occur in the Reserve but occur at similar habitats nearby, are sometimes introduced to the Reserve, under the assumption that they were extirpated from the Reserve by past human activities.

Planting is done by staff and volunteers. Watering is done as needed using a portable water tank pulled by a truck and a portable irrigation system. Mulch is applied during planting to control weeds and maintain soil moisture.

Monitoring using transects, quadrats, and photos is done before and after each restoration project. A record of the number of each plant species planted is maintained for all restoration projects.

The Reserve maintains a GIS map of the restored areas (Figure 1) and description of each restoration project (Table 1). Most restoration projects are conducted as funds become available. Habitats near wetlands have been the focus of the last 20 years. The future areas to be restored are mostly grasslands and coastal scrub (Figure 2).

**C. TREE REPLACEMENT**

The Reserve contains several eucalyptus and cypress trees that were planted approximately 70 years ago (Figure 3, Table 2). We propose to slowly replace these exotic trees with native species such as elderberry and coastal live oak because the native trees provide a more valuable habitat for many bird species. For example, oaks produce acorn which is eaten by many species, including Acorn Woodpeckers. Elderberries produce abundant berries that are eaten by frugivorous birds. They also support a number of insect species that are eaten by birds.

In addition, exotic trees can be detrimental to the Reserve’s rare ecosystem when planted in the wrong place. For example, eucalyptus is known to remove ground water and can dry wetlands. Trees near the beach and the slough attract raptors and crows which have been observed to prey on threatened and endangered birds (Western Snowy Plovers and California Least terns). The beach and mudflats are typically safe habitats for shorebirds to nest as they allow a wide view of
the surrounding giving them enough time to escape from an approaching predator. When trees are planted near these habitats, it impacts shorebirds by attracting birds of prey. The shorebirds do not have time to escape from a bird of prey hiding and observing from a nearby tree. At the Reserve, crows have been observed eating plover eggs and chicks, Great Horned Owls ate adult Western Snowy Plovers, and Red-tailed Hawk ate plover chicks and mistakenly took away a California Least Tern decoy. Thus, the removal of large exotic trees from a 500 m zone from the beach is a critical step to protect these listed shorebird species.

Trees are important habitat for birds and they may have occurred in the northern part of the Reserve and the North Campus Open Space before human disturbance in the early 1900’s. The Reserve’s goal is to increase the current canopy area occupied by exotic trees but use native species and at appropriate locations instead. To do this, the exotic trees will be replaced with native trees at a ratio of at least 1:1. Exotic trees will be removed gradually and removals will be timed to avoid disturbance to nesting birds (only between September 1 and February 15). The gradual removal will allow the birds of prey to become used to the change in habitat and find other trees to nest. Trees are actively being used (or have been used in the last 2 years) as a nesting site for raptors, Great Blue Herons, egrets, or cormorants, will not be removed. A raptor survey was performed in August 2007, February 23 2015, March 17 2015, and May 20 2015. No raptor nests were observed in the Reserve trees or the trees surrounding the EMT oil tanks in these surveys. These surveys were part of a bi-monthly bird survey that started in 2015 and will continue in the future.

If a tree or shrub needs to be removed for safety reasons and it is during nesting season, a bird nesting survey will be performed by a qualified biologist, at a minimum one week before removal or trimming. If active nests are located in the survey, a 250-foot buffer will be placed around the nest until the young have fledged. A qualified biologist will be on site during the entire duration of construction to ensure protection of any sensitive species encountered during the course of the project. All tree trimming and removal will follow applicable LRDP Policies and protocol in LRDP Appendix 2, Tree Trimming and Removal Program.

Figure 1. Completed restoration projects at Coal Oil Point Reserve. See Table 1 for a description of each project.
Figure 2. Areas to be restored in the future. The different colors correspond to vegetation types that these areas will be restore to. The dune scrub is currently occupied by iceplant and the oak woodland and grassland/coastal scrub mix areas are occupied by exotic annual grasses.
Figure 3. Location of exotic trees at COPR. Each point is a tree added to the map using their GPS coordinates. These trees were inspected in 2015 and their height, diameter, and condition were recorded (Table 2).
Table. 1 Description of restoration projects already completed. See Figure 1 to see the location of the projects.

<table>
<thead>
<tr>
<th>Title</th>
<th>Year</th>
<th>Project Description</th>
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<tbody>
<tr>
<td>1.</td>
<td>1980s</td>
<td>This project is located on the west boundary of the Reserve in the 40 acres that were added to the Reserve in 1998. The area was replanted in the 1980’s after a remediation project to clean up the soil. The origin of the plants used to replant the area is unknown, but it is clear that they came from a variety of locations. For example, the <em>Lupinus arboreus</em> has a yellow-flower and is native to Monterey. The coastal golden bush is much taller than the variety native to the Reserve and has a different leaf shape. These plants that originated from non-local populations can hybridize with the Reserve’s natural populations and alter the local gene pool. Ideally the vegetation in this area should be removed and the site restored with local genotypes.</td>
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<td>2.</td>
<td>1987</td>
<td>The vernal pool was created in 1987 as a mitigation project for the UCSB West Campus Faculty Housing project. It was the first vernal pool reconstruction project attempted by the UCSB Museum of Systematics and Ecology. Currently, the deep areas of the pool function as a vernal marsh that rarely dries up, and the shallower edges function as a vernal pool that dries up seasonally.</td>
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<td>3.</td>
<td>1998 to 2002</td>
<td>This site is located on the south-east corner of the Reserve, adjacent to the reserve’s field station. Before it was restored, the site was dominated by <em>Acacia longifolia</em> and there were almost no native species on site except for some nightshade, willows, and a small patch of <em>Scirpus mexicanus</em>. When the acacia was removed, the bare area revealed a complex landscape with dune and sandy loam soils. The dunes were planted with seeds collected from plant species found on the dunes on the west side of the slough. On the sandy loam soil seedlings of coastal scrub species were planted to mimic the vegetation growing on the west side of the slough. Project done by volunteers and donated service by arborists from McPherson Tree Care.</td>
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<td>4.</td>
<td>1999-2001</td>
<td>The project included restoration of the slough margin and 7 vernal pools on west campus, and planting of vegetation to screen buildings south of the reserve’s field station. The slough margin was dominated by iceplant that was killed by covering it with black plastic for 8 weeks. The thatch was removed by hand and taken off-site. None of the natural plant community endemic to this degraded site remained to provide a model for restoration. We used the plant communities found at nearby wetland sites (e.g. Hollister Ranch and Carpinteria Salt Marsh Reserve), which are similar to COPR but less degraded, to determine which species to plant. Funded by the Santa Barbara Coastal Enhancement Program.</td>
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<td>5.</td>
<td>2000</td>
<td>The main goal of this project was to eradicate pampas grass from the Reserve. One acre of pampas grass was removed from the dune pond margin using a backhoe and disposed off-site. Isolated clumps of pampas grass were sprayed with glyphosate and left on-site to decompose. Small plants were removed by hand. Volunteers also removed curly dock and cockle burr by hand. No revegetation was conducted as the area already had native plants to spread to the space left by the pampas grass. Funded by the Santa Barbara Coastal Enhancement Program.</td>
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<td>6.</td>
<td>2000-2004</td>
<td>The project began in 2000 when a large meleleuca tree was removed from the wetland edge. This tree was the site of a homeless encampment that was a problem for the Reserve. The project was supported by a grant from the Wetlands Recovery Project and it was implemented by the Santa Barbara Audubon.</td>
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<td>7.</td>
<td>2002</td>
<td>This site is located immediately south of the bridge over the Devereux slough channel. The project area was dominated by a number of exotic shrubs such as acacia, myoporum, and large eucalyptus trees. Some native species such as coastal live oak (<em>Quercus agrifolia</em>), mugwort (<em>Artemisia douglasiana</em>), and California brome (<em>Bromus carinatus</em>) occurred in the gaps and edges of the thick exotic vegetation. The goal of the project was to restore the area with native coastal scrub species, improving the views from the public trail while visually screening the Devereux Foundation buildings. All exotic brush species were removed, eucalyptus trees were trimmed to within 2 meters from the ground, and coastal scrub species and oak trees were planted. All plants used in this restoration project, except the California sunflower and lemonade berry, were propagated from seeds collected from plants found on the Reserve, and were grown in the Reserve greenhouse. Seeds of the California sunflower were collected at Goleta beach and lemonade berries were collected at the UCSB’s north bluff because there was no source of seed for these species on the Reserve. A professional arborist removed the trees and shrubs and the area was planted with natives with help of numerous volunteers of the Santa Barbara Chapter of the Audubon Society. A wood fence replaced a degraded barbwire fence along the slough margin at the completion of the project. Funded by the UCSB’s Shoreline Preservation Fund.</td>
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<td>8.</td>
<td>2004-2006</td>
<td>This area was dominated by iceplant and restored in 2000 by students from the Goleta Family School under the supervision of the Reserve Director. Students removed the iceplant by hand and hauled it off-site. They collected seeds of native plants on the Reserve and cultivated them in the Reserve’s greenhouse. Funded by the Wetlands Recovery Project and implemented by the Santa Barbara Audubon.</td>
</tr>
</tbody>
</table>

This project created a vegetated zone to function as a buffer zone between the northern boundary of Reserve and the road. The Reserve calls this the “green fence”. Funded by the UCSB’s Shoreline Preservation Fund.

### 10. 2007-2008

This project removed ½ acre of iceplant, and plants of white poplar, myoporum, acacia and pittosporum. Native dune plants were planted in the dead iceplant mulch. Funded by the Important Bird Area program (Audubon California) and implemented by the Santa Barbara Audubon.

### 11. 2008

A 6 acre area was burned in 2006 from a faulty power line. The enhancement of 1 acre that burned included the removal of pampas grass and myoporum shrubs, fennel, annual weeds, and some iceplant. Seeds of native plants were planted in the grassland area to complement the bunchgrass and Blue-eyed grass. Funded by the Coastal Fund and implemented by the Santa Barbara Audubon.

### 12. 2007-2010

This project focused on the restoration of the western margin of the Devereux Slough. 7 acres of exotic shrubs and annual non-native species were removed (acacia, myoporum, tamarisk, and pittosporum and trees were limbed at the lower branches (eucalyptus and Monterey cypress). Other invasive species removed included wild radish, black mustard, fennel, Himalayan blackberry, New Zealand spinach, Italian ryegrass, harding Grass, and Italian thistles. Following the removal of exotic species, a total of 31 native species and 5,743 native plants were installed in the project area. Six sensitive species were planted: Hordeum bracheantherum, Lasthenia glabrata subspp. Coulteri, Anemopsis californica, Lonicera subspicata var. subspicata, Stephanomeria elata, and Astragalus pycnostachyus var. lanosissimus (Ventura marsh milkvetch). 15 of the 167 plants of Ventura marsh milkvetch survived to produce flower and seeds. Lasthenia glabrata subspp. Coulteri was propagated from seeds collected at Goleta Slough. Funded by the Wildlife Conservation Board.

### 13. 2009-2010

This project focused on enhancing habitats surrounding the dune swale pond and the vernal pool on the western side of Devereux Slough. Non-native invasive plants such as tamarisk, harding grass, fennel and thistles were removed from the wetland edges and the area was re-vegetated with native species. An informal trail east of the freshwater pond was closed to reduce disturbance to wetland habitats. Willows, mulefat and native grasses were planted in the closed trail, and allowed for the expansion of the rhizomatous wetland plants into the trail from both sides. Funded by the Goleta Valley Land Trust and implemented by the Santa Barbara Audubon.

### 14. 2011-2013

The main goal of this project was to eradicate cape ivy from COPR. The largest infestation, totaling 0.4 acres, in the north-east corner of the Reserve was cleared by hand.
### Coal Oil Point Reserve

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The second goal was to enhance a coastal poppy population, a subspecies of the common California poppy by clearing weeds and mulching around the poppies. About 200 seedling of the poppies were planted and another 200 plants of coast goldenbush, California fuchsia, purple needlegrass and California sagebrush. Funded by Goleta Valley Land Trust and through the Santa Barbara Audubon.</td>
<td></td>
</tr>
<tr>
<td><strong>15.</strong></td>
<td>2011-2013</td>
<td><em>This project enhanced the eastern margin of the slough by removing weeds such as iceplant and New Zealand spinach and planting native species (671 plants) such as coast goldenbush, California sagebrush, mugwort, beeplant, California brome, coast morning glory, California fuchsia, California buckwheat, western goldenrod, arroyo willow, wood mint, alkali ryegrass, Santa Barbara honeysuckle, and California sunflower. In addition, 2 populations of Western goldenrod, <em>Euthamia occidentalis</em>, were planted from seeds collected at the Goleta Slough. Funded by the Wetlands Recovery Project.</em></td>
</tr>
<tr>
<td><strong>16.</strong></td>
<td>2014-2015</td>
<td>The planting of 150 coast live oak (<em>Quercus agrifolia</em>) on the northwest corner of the reserve aimed to provide new habitat for wildlife. The location of the new oaks, in the northern section of the Reserve are far enough from the beach that they raptors perching on them will not see the plovers on the beach. The restoration will also function as a wildlife corridor linking 2 wetlands, the Devereux Slough and the fresh water pond at the Ellwood Marine Terminal. Plants were grown by Goleta Valley Beautiful from seeds collected in the Devereux and San Jose Creek watersheds. Implemented and donated by the Goleta Valley Beautiful.</td>
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<tr>
<td><strong>17.</strong></td>
<td>2011-2015</td>
<td>The mail goal of this project was to implement the Access Plan of the Coal Oil Point Reserve. The project involved extensive restoration along trails, to a natural “green fence” composed of native plant species to encourage people to stay on trails. Funded by the California Coastal Conservancy.</td>
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Table 2. List of trees at COPR and their size and condition.

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<tr>
<th>ID</th>
<th>Location</th>
<th>Species</th>
<th>DBH (ft)</th>
<th># Trunks</th>
<th>HT (ft)</th>
<th>Condition</th>
<th>Notes</th>
<th>Date Inspected</th>
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Appendix 4. Infrastructure Plan for Coal Oil Point Reserve

“3.5 Administrative Areas. Each Reserve management plan will identify a projected "build-out" location that specifies the optimum allowable facilities for resident staff, researchers, classes, and public outreach programs to ensure minimal impacts on the natural systems (e.g., carrying capacity based on the ecosystem responses or biodiversity). These locations may in some cases overlap with disturbed areas.” (Extracted from the UC Natural Reserve System Use Guidelines.)

Overview:
The goal of the Coal Oil Point Reserve (COPR) Infrastructure Plan is to describe current and future infrastructure needed to support the core functions of the Reserve (research, education, and outreach) while protecting the fragile ecosystems of the Reserve, particularly the beach, dunes, and the Devereux Slough. In summary, the Reserve proposes to maintain all current buildings and renovate an existing building on West Campus. No new buildings are proposed in the Coal Oil Point Area.

About 20 research projects and 20 university classes use the Reserve annually. In the 2013-2015 fiscal year, the Reserve supported over 2,000 users for a total of 6,908 user-days, including a large group of volunteers who assist with management of the threatened snowy plover, restoration projects, and public environmental education programs. COPR has facilities located at the field station at Coal Oil Point (Figure 1) that support Reserve operations and programs. The Reserve located its field station at Coal Oil Point because the site provides an excellent visual vantage point for monitoring the Reserve, and the area was already highly disturbed, having been the site of various facilities that were developed to support a variety of uses over the past 100 years. The COPR field station is surrounded by dunes to the north and west and grasslands to the east. These areas had been denuded of native vegetation due to activities in the area before the Reserve was established in 1970. Reserve staff and volunteers have fully restored the dune and grassland habitats adjacent to the field station and the areas now function as a buffer zone to protect ESHAs in the Reserve.
Historical use of the COPR field station site:
The location of the COPR field station at Coal Oil Point was the site of a summer camp more than 50 years ago. The summer camp facilities included the Cliff House, which housed the kitchen, dining area and restrooms, and a number of rustic wooden cabins that were used as bunkhouses for campers. The area was cleared of vegetation and built up with about 1 foot of dirt fill in preparation for the construction of the summer camp facilities. The cabins were constructed on concrete slab foundations. Water and electricity were extended to Coal Oil Point from Isla Vista and a septic system was constructed adjacent to the Cliff House to serve the restrooms. The grounds of the summer camp and about 20 acres surrounding the facilities were landscaped with *Acacia longifolia*, an exotic invasive shrub that grows very quickly, produces large quantities of seed, and spread into adjacent native habitats in the Reserve.

By the late 1960’s the summer camp had ceased operations and the wood frame cabins were not being used. At the same time, the dunes to the west of Coal Oil Point and the Devereux Slough were recognized as important coastal habitats by faculty and researchers at UCSB who were using the area for research and field courses. Research and teaching use was facilitated by the proximity to campus. The UC Natural Reserve System (UC NRS) had been established in 1965 (then known as the Natural Lands and Water Reserves System) and was adding reserves throughout California to support research and teaching. The Coal Oil Point Reserve was established and incorporated into the UC NRS in 1970. UCSB hired a Reserve caretaker who lived at the Reserve field station in a mobile home and the Reserve took over the use of the wood frame cabins for storage and office space.

Originally the Reserve was 117 acres and included dunes, upland habitats and the Devereux Slough. Fifty-three acres of additional dune and upland habitat were subsequently added adjacent to the northwest boundary of the Reserve; the total area of the Reserve is now 170 acres. COPR has one of the most active conservation and restoration programs in the UC NRS system.

Current Facilities
In its current configuration, the COPR field station at Coal Oil Point has seven buildings that provide key support for the Reserve's operations and programs (Figure 2, Table 1). The buildings include a residence, an older wood frame cabin used for office space, and five newer sheds that replaced aged wood cabins and are used for storage and a workshop. All sheds sit on concrete slabs that were constructed in the 1960s as part of the facilities for a summer camp. An additional building, the Docent Office (Table 1, Figure 3G), is used by the Reserve to support the snowy plover management program, but it not located within the COPR Field station. It is just outside the field station, on the bluff next to the Cliff House, and it is small block building from the 40’s. In addition to the buildings, infrastructure elements at the field station include a greenhouse and shade hut for the native plant nursery, a parking area, and wood and Woodcrete fencing. The Reserve Director’s residence has an adjacent yard (Figure 2) that is used by the Reserve Director's family.

**Reserve Director’s residence and yard:** There has been a Reserve caretaker or director living in a residence at the COPR field station since the Reserve was established in 1970. Initially, the reserve caretaker lived in a 1960’s-style mobile home located adjacent to the public entrance to Sand’s beach on Coal Oil Point. In 1999, the mobile home was in extremely poor condition and safety issues precluded using the structure as a residence for the Reserve Director and her family. It was demolished and replaced with a new manufactured home. The new residence was moved from the original mobile home site to its current location in the northwest corner of the field station (Figure 2, Figure 4A). The new location was chosen to separate the residence from the main public access to the beach for the privacy and safety of the Reserve Director’s family, and to open up the view of the Reserve from the residence to improve surveillance of the protected areas in the evenings and on weekends.

The COPR Reserve Director is required as a special condition of employment to live on site at the Reserve. The current Reserve Director and her family live at the COPR field station full time. The residence includes a fenced yard area for the family’s personal use (Figure 2). The septic system for the residence, a greenhouse and a domestic animal pen that is used for the Reserve Director's domestic pets are located in the yard.
The current septic system for the three-bedroom residence has a 1,500 gal septic tank with a single infiltrator-type leach line. When the manufactured home was installed it was hooked up to the septic system that had served the original mobile home. However, after about 18 months, the original septic system failed. The current system was installed in 2000 as an emergency measure. The septic tank must be pumped more often than a well-functioning system should require. The system should be improved by either expanding the leach field with a second infiltrator-type leach line or installing a greywater system to divert the laundry and shower wastewater from the septic system. This improvement is planned for the future and will require review by the California Coastal Commission.

The greenhouse in the residence yard was installed in 2000 on a concrete pad that was originally used as the foundation for a summer camp cabin. The residence greenhouse is sometimes used to grow native plants for the Reserve’s restoration projects when the native plant greenhouse is full. The domestic animal pen in the residence yard was constructed in 2004. It is enclosed by a fence and has a number of small animal shelters that are easily moved around within the pen. The site of the domestic animal pen was chosen because it was highly disturbed area; the site was utilized by the summer camp and had been cleared of native vegetation more than 50 years ago. The Reserve Director has kept goats in the pen since it was installed. A project description for a “confinement animal facility” for up to 10 adult goats has been approved by the UCSB NRS and the UCSB Office of Research and will be submitted to the Coastal Commission for approval. The animal enclosure and goats are the personal property of the current Reserve Director and will be removed when she leaves her position as director.

**Sheds:** The COPR field station has five sheds (Figure 2) that are used to support Reserve staff and users. Four of the sheds are used to store equipment and supplies. The plover and garden sheds provide storage for the snowy plover management program and the native plant nursery. Sheds #1 and #2 provide storage for maintenance supplies and equipment for Reserve operations. Shed #3 is a workshop that is used by Reserve staff and research users for repairs and small construct projects. The plover and garden sheds were installed in 2008 and the other three sheds were installed in 2014. All of the new sheds replaced old wood frame cabins that were built for the summer camp more than 50 years ago and had been used by the Reserve since it was
established in 1970 for storage and workspace (Figures 3B, 3C, 3D, 3E, and 3F). The replacement sheds were all installed on the existing foundations of the original sheds.

**Staff Office:** The building that is currently used for staff offices is located in the south east corner of the field station (Figure 2). It is an aged wooden structure that was built more than 50 years ago for the summer camp. In the future, the Reserve proposes to move the staff offices to a different location. The building will then be available to researcher groups, such as the whale migration monitoring program, who would benefit from office space adjacent to the ocean.

**Docent Office:** The cinder block building next to the Cliff House on the bluff is outside the COPR field station footprint but is used, with the University’s permission, by the Reserve’s Snowy Plover docents as the headquarters for their operations on the shore (Figure 3G). The building, which was constructed in the 1940’s, provides an excellent observation post for viewing the Reserve’s protected plover habitat.

**Greenhouse and shade hut:** The Reserve has a greenhouse and a shade hut that are used exclusively to propagate native plants (Figures 2 and 4A). Seeds are collected in the Reserve and sprouted in the greenhouse. Seedlings are then transferred to the shade hut to acclimate before being used in restoration projects. The greenhouse was not installed on a permanent foundation but rather on railroad ties that are staked into the ground. The shade hut is constructed of a metal pipe frame covered with shade cloth.

**Fences:** A wood fence surrounds the field station and protects the Reserve’s structures. The wood fence was installed in 2012 to replace an aged chain link fence that was in poor condition. A small section of the original chain link fence has not yet been replaced with wood fencing. The Reserve will complete the fence replacement project in the near future.

A Woodcrete fence (comprised of concrete “boards” textures and painted to resemble wood) was installed on the bluff edge by the Reserve in 2013 to replace the chain link fence that was in poor condition. This fencing is on UCSB property that is not within the boundary of the COPR field station. The project was completed with the cooperation of UCSB to improve safety to visitors.
A Woodcrete fence was also installed on the western boundary of the Reserve as a barrier to trespass by mountain bikers and pedestrians who were trampling fragile dunes and wetlands in the southwestern section of the Reserve. A small section of woodcrete fence was also installed at the northern entrance to the Pond Trail to define the entrance and restrict access to the trail by bicycle traffic. These fences are described in more detail in the Access Plan (Appendix 1 of the COPR Management Plan). The Access Plan was approved by the California Coastal Commission in 2011 (NOID 1-10).

Roads: Coal Oil Point Reserve is located one mile west of the UCSB campus on Coal Oil Point. Access to the Reserve is via Slough Road (Figure 1), which runs along the eastern edge of the Devereux Slough. Slough Road is owned by UCSB and provides access to the University’s Devereux School property as well as Coal Oil Point. In the future this road will be restricted to pedestrian and emergency vehicles only. Reserve staff and users will access the Reserve through the Devereux property (Policy TRANS 12-B, 2010 LRDP).

There is a short section of road that connects with Slough Road and provides access to Coal Oil Point (Figure 1). This road provides access to the COPR field station and the Cliff House area, and can be used by maintenance and emergency vehicles. The first section of the road as it comes off Slough Rd. is paved, and the second section that leads to the Cliff House is a dirt road. The paved section of road is not within the boundary of the COPR field station, but COPR maintains the road since it is primarily used for Reserve functions.

Parking: Parking on Coal Oil Point has always been restricted to staff and users of the Reserve and the Cliff House. However, illegal parking was frequent and vehicular traffic led to habitat destruction and facilitated uses of the beach that were incompatible with protection of populations of threatened bird species that live and nest on the upper shore. To reduce illegal parking, an electronic gate was installed at the end of Slough road in June 2011 (Figure 1) and the old gravel parking lot on the Point was closed. The gate has successful in eliminating illegal parking, damage to vernal pools by off road vehicles, and the occurrence of activities on the beach, such as camping, BBQs, bonfires, fireworks and parties, that disturb populations of threatened birds and damage fragile dunes. Coastal access parking is now provided on the UCSB Devereux property adjacent
to the Point. The gate does not restrict pedestrian access; pedestrians and bicycles can pass by the
gate and access the Point and beach on roads and trails. The gate is not within the boundaries of
the COPR field station, but the Reserve maintains it.

The old gravel parking area on the Point that was adjacent to the COPR field station but not within
its boundaries of the Reserve was restored with native coastal scrub and grasses in 2012. The area
has since been overgrown by coyote bush, the most common species of native vegetation in the
area.

Reserve staff and users currently park in a designated area within the field station that has been
resurfaced with gravel to prevent erosion (Figure 4B). The area can accommodate up to 15 parking
spaces. The Reserve will add a sign at the gate to inform handicap visitors to call the office and
obtain the gate code to park in the Reserve’s parking area. The Reserve has two trucks and a water
tank that are parked next to the greenhouse. Parking for Reserve users in this lot has been adequate
to support current Reserve use.

No new public access development is planned within the Reserve boundary.

**Auxiliary equipment for research and education**

Research equipment to measure environmental parameters is routinely used by researchers at the
Reserve. Current equipment includes:

- **Weather stations**: The Reserve has two weather stations, both owned and maintained by research
groups. A large weather station owned by NOAA provides weather data online via satellite. The
NOAA station is part of a large network of identical stations established throughout the United
States to monitor global climate change. A smaller station is owned by the Geography lab at
UCSB and is used by researchers and students to learn techniques for environmental monitoring.

- **USGS earthquake antenna**: The antenna is owned & operated by UCGS and is used to monitor
ground disturbances caused by earth movement.
Coal Oil Point Reserve

Internet radios: The Reserve has three small radios that are located throughout the Reserve. The radios create a mesh for internet connectivity that is used by researchers when they are working out on the Reserve and by remote cameras set up to monitor Reserve sites.

New infrastructure proposed for the future at Coal Oil Point

Infrastructure located within the Reserve and the COPR field station:

- No new buildings are proposed at the field station
- The septic tank that serves the director’s residence will be improved by extending the existing leach line or adding a second leach line.
- Approximately 120 ft. of the old chain link fence around the field station will be replaced with wood fencing that will match the existing wood fence.
- An existing 14 by 16-foot concrete slab that was once used as a foundation for a summer camp cabin will be enclosed with a 6-foot wood fence to hide materials such as pipes and lumber stored on the site.
- The UCSB Art Studio (Figure 2) is currently used by UCSB faculty. In the future it will be allocated for Reserve use and will be renovated to function as a garage for Reserve vehicles and large equipment. Renovations will include adding a garage door and painting the exterior a brownish color to match other Reserve buildings.
- Future requests for installation of temporary research equipment and instrumentation in the Reserve will be granted by the Reserve Director if they do not cause impacts to natural resources.

Infrastructure located in areas adjacent to the COPR field station but not within its boundaries:

- The Reserve will replace four old picnic tables in front of the Cliff House with new ones.
- A new public drinking fountain will be installed adjacent to the docent building near the access to Sands beach. This project will be completed by UCSB, not by COPR.
- COPR proposes to renovate a 5,390 square foot building located on the UCSB Devereux property adjacent to the Reserve (Figure 5) that will function as a headquarters and education and conservation center to support Reserve programs and operations. The proposed facility will meet crucial needs, provide continued support for current Reserve
users and programs, including conservation programs, and promote additional outreach programs, including nature-based educational programs for K-12 students and the public. The Center will have a meeting room, classroom, small laboratory, library, conference room, offices, restrooms and a small kitchen. The facility will also eliminate the need for future facility development at the COPR field station site on the Point.
### Table 1 - List of facilities at the COPR field station on Coal Oil Point.

<table>
<thead>
<tr>
<th>Building</th>
<th>Size (sq ft)</th>
<th>Function</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director’s Residence</td>
<td>1,246</td>
<td>Residence for Reserve Director’s family</td>
<td>Replacement in 1999 for old condemned</td>
</tr>
<tr>
<td>Staff Office</td>
<td>416</td>
<td>Office for Reserve staff; researchers, volunteers, and interns</td>
<td>Built in the 1960 as a storage shed for summer camp.</td>
</tr>
<tr>
<td>Plover shed</td>
<td>120</td>
<td>Support of snowy plover management program</td>
<td>Installed in 2008 on a concrete slab that was the foundation for an old summer camp cabin</td>
</tr>
<tr>
<td>Shed #1</td>
<td>224</td>
<td>Storage</td>
<td>Old cabin was replaced with new shed in 2014 on original concrete slab</td>
</tr>
<tr>
<td>Shed #2</td>
<td>224</td>
<td>Storage</td>
<td>Old cabin was replaced with new shed in 2014 on original concrete slab</td>
</tr>
<tr>
<td>Shed #3</td>
<td>480</td>
<td>Workshop</td>
<td>Old cabin was replaced with new shed on original concrete slab in 2014</td>
</tr>
<tr>
<td>Garden shed</td>
<td>120</td>
<td>Storage of restoration supplies</td>
<td>Installed in 2008 on a concrete slab that was the foundation for an old summer camp cabin</td>
</tr>
<tr>
<td>Docent Office</td>
<td>300</td>
<td>Office for docent program staff &amp; volunteers</td>
<td>NOT located on the Reserve. Built in the 1940's.</td>
</tr>
</tbody>
</table>

### Additional infrastructure

<table>
<thead>
<tr>
<th>Building</th>
<th>Size (sq ft)</th>
<th>Function</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenhouse - plant nursery</td>
<td>220</td>
<td>Grow native plants for research &amp; restoration</td>
<td>Built in 2013 - NOT on a permanent foundation</td>
</tr>
<tr>
<td>Shade hut</td>
<td>900</td>
<td>Grow native plants for research &amp; restoration</td>
<td>Temporary structure with metal poles &amp; shade cloth roof</td>
</tr>
<tr>
<td>Septic system - residence yard</td>
<td>1,500 gallons</td>
<td>Serves the residence</td>
<td>Installed in 2000 to replace old system located near beach entrance that failed.</td>
</tr>
<tr>
<td>Greenhouse – residence yard</td>
<td>240</td>
<td>Used by Reserve Director’s family</td>
<td>Built in 2000 – sit on concrete pad</td>
</tr>
<tr>
<td>Animal pen – residence yard</td>
<td>33 ft x 65 ft</td>
<td>Used by the Director’s family for their animals</td>
<td>Temporary structure that will be removed when the Director leaves</td>
</tr>
<tr>
<td>Woodcrete fence on bluff edge</td>
<td>910 linear ft</td>
<td>Protect Reserve and bluff edges</td>
<td>Replaced chain link fence in 2012</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------</td>
<td>--------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>Wood fence around field station</td>
<td>245 linear ft completed</td>
<td>Protect field station buildings</td>
<td>Replaced original chain link fence in 2012. (120 ft to be completed in future)</td>
</tr>
<tr>
<td>Parking area</td>
<td>Parking space for reserve users</td>
<td>Gravel surface</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 1.** Topographic map of Coal Oil Point Reserve showing the location of the Reserve’s field station area.
Figure 2. Map of Coal Oil Point Reserve field station area, showing existing buildings. The white line represents the COPR boundary. The green line delineates the residence yard and the blue line shows the animal pen within the yard. Note that the Art Studio is used by UCSB faculty and is not currently within the COPR field station. Image is from Google Earth.
Figure 3. Photos of existing facilities at the field station.

A. Reserve Director's residence

B. Plover shed was installed atop a concrete slab that formerly supported an old cabin

C. Old cabin #1 (left) was demolished and replaced with Shed #1 (right) using existing concrete slab. Shed #1 is used for storage.

D. Old cabin #2 (left) was demolished and replaced with Shed #2 (right) using existing concrete slab. Shed #2 is used for storage.
E. Old cabin #3 (left) was demolished and replaced with Shed #1 (right) using existing concrete slab. Shed #3 is used as a workshop.

F. Porta-potty Garden shed. Shed was installed atop a concrete slab that formerly supported an old cabin.

G. Docent office

**Figure 4.** Additional facilities at the COPR field station.

A. Greenhouse used to propagate native plants for restoration & research.
B. Parking area at Coal Oil Point Reserve field station
Figure 5. Location of proposed new headquarters building adjacent to the eastern boundary of COPR.