

Snowy Plover Management Plan (SPMP) -2001

Status.

The beach area near Devereux Slough is a roosting site for up to 180 western Snowy Plovers. These birds were listed as Threatened by the Fish and Wildlife Service in 1993. Snowy Plovers almost always roost within the Reserve boundaries and commonly bred at this site until the area was opened to public recreation in the late sixties. No successful breeding had been observed for thirty years until June 2001, when a nesting female was seen near the main entrance to the beach and 2 chicks were found a week later. The chicks were watched from sunrise to sunset and a symbolic fence (post and rope) and signs were erected around the slough mouth to protect the chicks from disturbance. One chick was taken by a crow the same day it was found. The other fledged successfully at the end of July 2001. In the Summer of 2002, after the fences had been in place for 9 months, 8 nests have so far been recorded. Apparently, the plovers were able to evaluate the decrease in disturbance and decide to breed at COPR again.

In 1997, and again in 2001, the Santa Barbara Chapter of the Audubon Society requested that the Reserve develop a management strategy for Snowy Plovers (e.g., De Chant letter. 1997). The U.S. Fish and Wildlife Service 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 (see Coon 1997 letter). In 1999, biologists from the Ventura Field Office of the U.S. Fish and Wildlife Service visited the Reserve and determined that recreation was leading to "take" (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 1999 letter.). Instances of take are in potential violation of Section 9 of the ESA, especially if the property owner does not make satisfactory effort to prevent them. Section 9 violations are subject to \$200,000 fines per infraction. A conservative estimate of the rate of take of Snowy Plovers at the Reserve is around 150,000 incidents per year (Lafferty 2001).

The Fish and Wildlife Service (FWS) 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 FWS suggested the Reserve 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 perimeter. The University will assist the Reserve in limiting impacts from recreational activities by providing enforcement of beach regulations and parking regulations. The Reserve will offer advice to the University and the County on managing plovers in portions of the critical habitat outside of the Reserve boundaries should the County or the University seek to enact protective actions for plovers in these areas.

Lafferty (2000) reviewed the status of Snowy Plovers at Coal Oil Point in an effort to aid management decisions by the Reserve. A study also was undertaken of the types of disturbances experienced by Snowy Plovers and other shorebirds at the Reserve (Lafferty 2001a,b). Several suggestions have been put forth for managing Snowy Plovers at Coal Oil Point. Waldo Abbott, a long-time natural historian and curator of the Santa Barbara Natural History Museum has watched Snowy Plover (and other wildlife) disappear along with the urbanization of Goleta. 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", Paul Lehman noted the disturbance of shorebirds by dogs and recommended a leash enforcement plan to reduce disturbance. Fahy and Holmgren (1993) set forth as proposed protective options such as fencing potential nesting areas, beach closure between March and June, a public education campaign, enforcement of pet restrictions, habitat restoration and, if plovers were to breed, predator exclosures 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 pets) to the area of beach used by plovers. De Chant (S.B. Audubon, in. litt. 1997) asked that the University prohibit pets, provide public education, and minimizes 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 restrictions, provide public education, restrict equestrian and motor vehicle access, and investigate other access controls. Although not specifically mentioning Snowy Plovers (which were not listed until after the

Coal Oil Point Reserve

amendment was approved), the LRDP amendment to the Coastal Act requires that the University prohibit pets and restrict parking.

In 2001, the Fish and Wildlife Service released the draft Western Snowy Plover Recovery Plan, providing goals and management guidelines. Goals set for COPR are four breeding adults (with a five-year average of one fledged chick per breeding male) and protection of the wintering population from disturbance. The Reserve's Snowy Plover plan was written to be consistent with the FWS recovery plan. The Service reviewed the Snowy Plover Management Plan for COPR and provided a comment letter in October, 2001.

In November 16, 2001, the California Coastal Commission approved the developments associated with the Snowy Plover Management Plan. These were: permanent closure of the Delta Trail, interim 2-year approval for a rope fence on the beach around the plover roost, and posting of regulatory and educational signs.

The Reserve provides each user an information sheet about the Plovers and requests the users to avoid the roost. Public education is provided through field trips and a new docent program that started in June 2001. Volunteer docents protect the roost area, request compliance with beach regulations, and educate the public about the need to protect Snowy Plovers. The goal for staffing the docent program is to obtain a half time paid coordinator who will supervise the volunteer docents, a program that will operate 10 hours per day, 7 days per week (25 docents). Thus far, docents have helped to achieve compliance with beach rules and to provide effective public outreach.

The Reserve posted three informational displays on Snowy Plovers at the main entrance to Sands Beach with funds from the Shoreline Preservation Fund. Continuous monitoring of people and plovers showed that the signs increased awareness, but disturbance of Snowy Plovers did not decrease until the symbolic fence (post and rope) was erected. The Reserve held open houses in 1998 and 2000 and led local residents on tours where guides showed and discussed Snowy Plovers. At the open houses, the Santa Barbara Audubon Society presented a poster about the Snowy Plover. In 2001, the Reserve had a meeting at the Cliff House to receive public input on the Snowy Plover Management Plan. Santa Barbara Audubon has agreed to assist with the educational component of the project and is leading the new docent program. The USGS has presented results from its study (Lafferty) to the public and scientists (Cliff House, summer 2001). Regular public tours that discuss the Snowy Plover are held regularly.

Although the leash law is posted and the Reserve attempts to educate pet owners, the Reserve acknowledges this has not been effective at reducing disturbance. After the plover chick hatched in June 2001, the UCSB campus police began patrolling the beach and ticketing owners with unleashed dogs. Compliance with the leash law increased dramatically after this. It is the desire of the COPR that the public voluntarily comply with the leash regulation, and the Docent program is geared to increase public awareness of the need to have dogs on leash to protect the Snowy Plovers.

The Reserve has presented the Snowy Plover Management Plan to the UCSB Horseboarders Association and has asked them to help educate other riders that use the area. The Reserve feels that present levels of equestrian use, if moved away from the main plover roost, may sufficiently reduce horse-plover interactions such that prohibition of horse passage will not be needed.

The Delta Path that leads visitors into the center of the Snowy Plover roost has an easement for use by Devereux Santa Barbara. Devereux Santa Barbara agreed with the University's request to obtain access to Sands Beach from the main entrance instead of along their Delta Path easement (Cummins letter. 1997).

The Reserve presently allows unrestricted night access. Night use contributes disproportionately to litter, which attracts crows. The Surfrider Foundation received funding from the Shoreline Preservation Fund to remove trash from the beach. Alcohol consumption, especially underage drinking, at Sands Beach is presently high. Posting of rules is presently limited to those rules prohibiting fires.

Large amounts of *Acacia* have been removed from the dunes and restoration will continue as funding permits. The Reserve received a grant from the Shoreline Preservation Fund and removed all the remaining *Acacia* near the plover roost. It is possible that the *Acacia* removal contributed to the nesting observed in 2001 because the nesting female was observed in the dunes where the acacias were removed.

Monitoring

The UCSB Museum of Systematics and Ecology has been recording regular counts of plovers made by volunteers (Bob Hansen, Mark Holmgren, Dave Hubbard) for many years. Dave Hubbard and Jenifer Dugan began a four-year monthly monitoring effort for shore birds along the Reserve and other local beaches in 1998. The UCSB Natural Reserve

Coal Oil Point Reserve

System authorized \$4,000 for the first year's monitoring effort of plovers and, in January 1999, the Reserve implemented a monitoring plan based, in part, on the Golden Gate National Recreation Area Monitoring Plan (Stenzel et al. 1995). Recent research (Lafferty 2001b) estimates that public access to the beaches at the Reserve results in a 16 fold increase in the rate of disturbance to snowy plovers compared to protected beaches, a situation that easily explains why this population ceased breeding when the University opened the area to recreation in 1967. Annually there are approximately 356,000 disturbances (calculated by summing, over all disturbances, the numbers of birds disturbed by each event) to snowy plovers at the Reserve. Each plover is disturbed an average of 115 times per week. 75% of the disturbances are from people and pets. The remaining disturbances come from crows that, probably, are attracted to litter. Although these disturbances do not kill wintering birds, they interfere with rest and feeding at the expense of building fat reserves needed for reproduction and migration.

This research also identified ways to maximize the protection of plovers while minimizing impacts to beach recreation. After the symbolic fence was erected, the leash law was enforced and the docent program started, preliminary data indicate that disturbance decreased by 65% and intense disturbance by 90% relative to the same time period before the fence was erected. Preliminary observations also suggest that, once the symbolic fence was in place, Snowy Plovers preferentially roosted within it, rather than being dispersed over a wider area of the beach as previously. Further, other shorebirds also responded positively to the erection of a disturbance-free zone, because roosting by other species increased by a factor of four over the unprotected circumstances.

Authority

As a threatened species, Snowy Plovers are protected by the U.S. Fish and Wildlife Service which can prosecute individuals or organizations that contribute to, or permit, the take of a listed species under the Endangered Species Act (ESA). The ESA permits land managers, such as the Reserve, to close the beach area or otherwise manage public access. Via the Coastal Act, the California Coastal Commission acts to ensure that coastal development has minimal impacts on the environment and coastal access. It requires coastal communities to produce planning documents. In this context, access and preservation issues related to the Reserve are covered in the UCSB 1990 Long Range Development Plan (LRDP), which specifies that the Reserve can restrict access to protect fragile coastal resources such as dunes (e.g., LRDP 30210.17). Because the 1990 LRDP was finalized before Snowy Plovers were

listed, it does not consider their management specifically and, therefore, is out of date with respect to the Coastal Zone Management Act.

The University of California owns the Reserve Property and manages the beach along its boundary. The County of Santa Barbara has jurisdiction over the beach west of the Reserve. The Reserve's physical borders (and management authority) extend to the water's edge (D. Birnbaum, U.C. Council, pers. com.). Consistent with this management authority, the California State Lands Commission asserts no claim that the Reserve's snowy plover management plan intrudes onto sovereign lands or that it lies in an area that is subject to the public easement in navigable waters (R. Lynch, letter. 2001). Unlike many preserved public lands, the Reserve's mission is resource protection and not recreation. This makes various scenarios of year-round beach restriction and/or path closure consistent with the Reserve's Mission.

Because Reserve Staff are not authorized to enforce the law (unlike, for example, State Park Rangers), only law enforcement personnel can enforce restrictions.

Management

The Reserve will manage its official users (classes and researchers), coordinate public education, design signs, configure access ways, restore habitat and monitor the Snowy Plovers. The University will implement the enforcement of rules for recreational users and pets.

The overall management approach (below) will minimize the overlap between plovers and human activity, particularly high impact activity, to reduce disturbance. If target goals are not met, actions will be intensified and new actions may be incorporated.

If a Section 9 permit is determined to be necessary by FWS, it will require funding to be approved. The Reserve will be seeking assistance to implement this management effort from the County and University. The University has pledged to assist the Reserve and the FWS with plover management on the Reserve (Wallace, Roberts and Todd 1997).

Goals and Actions. The goals of this plan are to maintain an undisturbed wintering population of Snowy Plovers in perpetuity and provide protected habitat for four breeding adults in the summer while continuing to allow compatible public access on Sand's Beach.

Coal Oil Point Reserve

By an “undisturbed wintering population”, we mean one in which there are no disturbances caused by unleashed dogs or trespassing into protected areas used by plovers. Disturbances will still occur along the water’s edge and other areas outside the fenced area that are open to the public. Once the final fence, signs, and docent program are fully implemented, the Reserve’s goal is to reduce disturbances that cause a plover to fly from 30 disturbances/plover/week (pre management levels) to below 5 disturbances/plover/week (present levels), and to provide protected habitat for two nests per year (four breeding adults as recommended by the USFWS Western Snowy Plover Draft Recovery Plan, 2001).

The actions and new policies proposed to achieve these goals are as follows:

- Increase public education. The Reserve will continue to work with the Audubon Society to expand the docent program. The Reserve will provide tours, informational packets for the press, informational signs, and opportunities to view shorebirds.
- Reduce impacts from domestic animals by requesting the university to intensify the patrolling of the beach and enforcement of the leash law.
- Fence the main plover roost to reduce recreation in the plover roost. The Reserve will place a post-and-rope fence from east of the enchanted forest to the high-tide line and from the western dunes to the high-tide line, orthogonal to the shoreline (Fig. 7). Parallel to the beach, along the high-tide line, between the two fences, there will be signs saying “No Trespassing, Plover Habitat”. The fence will be maintained year round but moved according to the tide to always maintain a passage for pedestrians below the high tide. The location of the roost fence was determined based on actual data on people and plover distributions on the beach. The chosen area will protect 95% of the Plovers while restricting affecting only 3% of the beach users.
- Reduce impacts from official Reserve users. To reduce levels of disturbance to plovers from teaching and education, the Reserve will screen Reserve applications for potential impacts to plovers. Users will receive information on how to avoid disturbing plovers.
- Close the Delta Path. This path presently directs visitors to the center of the plover roost and creates a barrier between the plover roost and the most suitable breeding area. The entrance of the trail will be closed with a fence and the trail will be revegetated.

- Re-direct the terminus of the Dune Pond Path. To reduce traffic through the western region of the plover roost the Reserve will move the southern terminus of the trail to the west, avoiding the plover roost, dunes, and wetlands.
- Night closure. To reduce the level of disturbance to plovers at night, the University will post notice that the Reserve is closed to the public between 10 PM and 5 AM (new policy). We can close the parking lot and enforce current regulations regarding fires, camping, and unleashed dogs, but I don't think we can prevent the public from using a public beach.
- Alcohol ban on beach. To reduce Sands Beach as a destination for partying, the University and County will prohibit and enforce open container prohibitions on the beach (new policy).
- Post beach rules. To improve compliance and facilitate enforcement, the University will clearly post beach rules.
- Reduce disturbance by crows and predators. The Reserve will continue to coordinate beach clean-up efforts to reduce crow visitation. Trash receptacles at the Reserve will be covered to prevent access by crows.
- Restore dune habitat near roost. The Reserve will continue to remove any *Acacia* shrubs in the area around the roost to reduce cover for predatory mammals.
- Monitor effectiveness of actions. The Reserve will develop a Snowy Plover Monitoring Plan that will:
 - 1) Determine plover population status and trends
 - 2) Determine plover spatial and temporal distribution
 - 3) Determine breeding activity
 - 4) Follow patterns of use by people and pets
 - 5) Document levels of disturbance
 - 6) Document changes following actions
 - 7) Help guide future management
- Provide increased protection if plovers breed by providing temporary fences if pairs nest in an unfenced area and by increasing patrol by docents to keep crows away.

Coal Oil Point Reserve

- Monitor compliance. The FWS requested that the Reserve monitor compliance with restrictions. Once the Plover Plan is fully implemented (signs, education, fences in place), the Reserve will evaluate whether compliance is sufficient to achieve the plan's goals. If not, the University will be requested to provide additional enforcement and the Reserve will increase the presence of docents. Additional restrictions will also be considered if existing restrictions are not sufficient to achieve programmatic goals.

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Coal Oil Point Reserve

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Environmental Setting

Coal Oil Point Natural Reserve [i.e., Coal Oil Point Reserve (COPR)] presently covers 157 acres and is located along the South Coast of Santa Barbara County (Figs. 1 and 2), in the lower drainage area of the Devereux Creek Watershed (Fig. 8), on the West Campus of the University of California, Santa Barbara (UCSB) (Fig. 2). The Latitude and Longitude are: 34° 25' 00" N and 119° 52' 30" W, and elevations (Fig. 9) range from extreme low water along the coast to approximately 30 feet (10 meters) on marine terraces. COPR is characterized by many coastal natural resources that are recognized for their ecological importance as well as for their beauty.

Because coastal wetlands are located in one of the most desirable parts of the state in which to live, an estimated 90% have been developed and the remainder have been degraded (Ferren et al, 1996). Only 15% of the land in the Devereux watershed remains undeveloped and COPR is the largest parcel within this undeveloped land. The Reserve contains more than 10 different habitats such as a coastal lagoon-type estuary with seasonally inundated and irregularly tidally flushed salt flats and salt marsh; sandy beach; rocky intertidal zone; coastal foredunes; dune scrub; dune swale; grassland, and vernal pools. The dunes are an especially important feature of the Reserve because they have been protected from severe disturbance and are the last remnant dunes in southern Santa Barbara County. The Reserve's rich and accessible rocky intertidal areas provide educational opportunities to many students. The coastal wetlands at COPR support a multitude of marine, estuarine, and freshwater species that interact in complex food webs. Devereux Slough is characterized by closure to tidal circulation most of the time. When freshwater runoff is sufficient to breach the sand berm at the mouth of the estuary, the slough moves into a period of days to weeks of tidal circulation until the sand berm rebuilds. This variability adds to the spatial and temporal complexity of the habitat, which is reflected in the highly diverse bird communities that use the area. The beach between the slough and ocean is an important roosting site for the Snowy Plover and once supported Snowy Plover breeding (Lafferty 2000).

The environmental setting of COPR has a profound influence on the complexity of the landscape and the richness of the biological resources. Analysis of borings, seismic surveys, and field observations (Stone Geologic Services, Inc. 1965) revealed that the area is characterized by a complex geologic structure, involving Miocene and Pliocene bedrock, Pleistocene channel deposits, Pleistocene marine terrace deposits, Holocene estuarine deposits, dune sand, beach sand, and top soil (Fig. 10, 11). A complex interplay between the

erosion of uplifted mountains and changing sea level, has characterized the regional coastline into the Holocene. Complex structural geology, including two systems of intersecting faults (the east-west trending More Ranch Fault system and southeast-northwest trending Coal Oil Point Fault system) has profoundly influenced the formation of habitats such as riparian corridors, the shape of the Devereux Slough, the location of seeps and springs and the development of fault sag ponds and vernal pools (Fig. 12).

The geographic location of COPR also is of great importance to the biologic richness of the area. The Reserve occurs in the transition between the cool, moist Mediterranean climate that characterizes central California north of the Santa Ynez Mountains, and the warm, dry Mediterranean climate that characterizes southern California south of the Santa Ynez Mountains. In this transition region, many plants and animals reach northern or southern limits of their geographic ranges. This results in unique plant and animal associations and rich biological diversity.

The sand dunes and coastal marsh of COPR are remnants of habitats that were once more widely distributed along the California Coast (Fig. 13 -A) before European settlement (Fig. 13-B, C, D). The dunes are an especially important feature of the Reserve because they have generally been protected from severe disturbance. Thus the plant communities are representative of natural coastal dune vegetation. In contrast, surrounding dunes outside the Reserve have not been protected from human disturbance and have been severely affected by human activity.

Coastal wetlands (Fig. 14) are important because they support a multitude of marine, estuarine, and freshwater species that interact in complex food webs. In addition, animal and plant species living in coastal wetlands are often highly adapted to this environment and are not found in other habitats. Because coastal wetlands are located in one of the most desirable parts of the state in which to live, an estimated 90 percent of these important habitats have been lost to development (Ferren et al, 1996). The continued encroachment of urban development is threatening and degrading those coastal wetlands that remain.

The COPR wetlands of the estuary known as Devereux Slough are characterized by a complex pattern of inundation. The wetlands are influenced strongly by freshwater runoff and have only occasional tidal circulation. The basic pattern is one of closure to tidal circulation most of the time. When freshwater runoff is sufficient to breach the sand berm at the mouth of the estuary, the whole slough empties rapidly. The slough then moves into a

Coal Oil Point Reserve

period of days to weeks of tidal circulation through the entry channel until the sand berm rebuilds and seals the mouth. Thus, the salinity and inundation regimes vary within a period of days and are quite different from nearby Goleta Slough that is fully tidal and, therefore, more marine influenced. This variability adds to the spatial and temporal complexity of the habitat, which is reflected in the highly diverse bird communities that use the area. The Reserve and adjacent areas are the home or resting stops for several rare and endangered bird species, including the Black-shouldered Kite, California Least Tern, Snowy Plover, and the Belding's Savannah Sparrow. The area is used by large numbers of migrating and wintering shorebirds, and the trees around the slough are frequented by Snowy Egrets, Great Egrets, Great Blue Herons and Black-Crowned Night Herons. Kites and hawks roost in the trees year round, using the grassland areas as hunting grounds. The beach between the slough and ocean is an important resting site for the Snowy Plover and may provide potential breeding habitat for this endangered species that bred at this site historically (Holmgren, 1997). Along the coast at the Reserve, regionally uncommon rocky-intertidal areas are present and are used by many educational groups.

Overall, the Reserve is a unique and excellent natural study area, particularly because of its proximity to the University. It is used regularly for undergraduate classes from UCSB and other institutions, is visited by community schools and educational groups, and is the site of graduate and faculty research projects. The Reserve is very intensively used for education, research, and community activity, especially when the numbers of users per acre are considered. It also is a site of great natural beauty, and an important visual and aesthetic amenity for the campus and community.

History of the Coal Oil Point Reserve Area

The area now known as Coal Oil Point was first identified as Punta de Tobax on a map produced as part of the log of the frigate *Princessa* recorded by Juan Pantoja y Arrellaga on a voyage in 1782. In 1842, Nicholas Den became owner of a large area including Coal Oil Point as part of a Land Grant from the Mexican government. At this time, some of the area was heavily wooded with oaks at points along the mesa which presently contains UCSB, Isla Vista, and the Coal Oil Point area. Den called the entire grant area "El Rancho De Los Pueblos". Coal Oil Point later became part of Rincon Ranch, named for a sharp corner in the ranch road (now the junction of Storke and El Colegio) and belonged to two of Nicholas Den's sons, August and Alphonse Den. Alphonse owned the western portion of the ranch

that included the present Coal Oil Point and Devereux Slough area. A Coast and Geodetic survey conducted in 1871 labeled the location Oak Point and identified a number of major features still present today (Coast and Geodetic Survey Map 3700s bar. 445 T-1267). At some point, the property was purchased by Joseph Archambault, a speculator, and then later sold in 1912 to Jack Cavalletto for farming.

In 1919, the property was sold to retired British officer Col. Colin Campbell who planned to develop a major estate on the property. The Campbell estate eventually included many structures and features still present today, including the access road, mansion (now Devereux Santa Barbara's main building), barn, etc. The Devereux Foundation, which is now named Devereux Santa Barbara, purchased the 500-acre Campbell Ranch and opened Devereux School in 1945.

In November 1967, the Regents of the University of California purchased 236 acres from Devereux Santa Barbara. This area included dunes, an estuary, and coastal terraces. During the negotiations to acquire this property, Dr. Keneth Norris, the UC Systemwide Natural Land and Water Reserve Committee, and UCSB faculty, emphasized to the UCSB Chancellor that portions of the property had natural Reserve value. During the development of the UCSB Long Range Development Plan of 1968, the dunes on the current "West Campus" property were designated a "Natural Resources" Reserve.

In late 1969, the UCSB Natural Land and Water Reserves (NLWRS) Committee which was chaired by Dr. J. R. Haller, and the campus Physical Planning Committee, recommended that the dunes, slough, and beach be included as part of a campus ecological Reserve. The University-wide Committee for NLWRS recommended that funds be allocated from its "Establishment Funds" for fencing and to provide housing for a caretaker at the proposed Reserve. Dr. Bruce Wales of the Biological Sciences Department was instrumental in supporting the formation of the Reserve and served as the first chairman of a campus management committee for the area.

Chancellor Vernon Cheadle concurred with these recommendations and requested that the identified areas be managed under the supervision of the campus Natural Land and Water Reserves Committee. The Reserve at this point was called the Devereux Natural Reserve. The Chancellor also agreed to put forward a recommendation to the Regents to include a specific number of acres at this site in the UC wide Natural Land and Water Reserve System as a new systemwide Reserve - Coal Oil Point Reserve. Considerable

Coal Oil Point Reserve

discussion took place about the size of the Reserve, with dimensions of 42, 70, and 91 acres considered. On the one hand there was concern about the minimum size for an effective ecological Reserve; on the other, there was concern for the value of the land that the Regents had purchased with no deed restrictions.

The Regents took official action on the incorporation of the Coal Oil Point Reserve into the University-wide NLWRS at their meeting on July 17, 1970. As incorporated, the Reserve consisted of 49 acres. Four specific habitats were recognized, including the rocky reef at the Point, the slough outlet, the shoreward dunes and beach, and the stable interior dunes. Although campus personnel acknowledged that the slough would logically be a part of the Reserve at some point in time, the smaller initial size was deemed best for approval by the Regents. In 1976, the campus NLWRS Faculty Advisory Committee and the UCSB Environmental Quality Committee both endorsed a proposed expansion of the Reserve. In September of 1979, the Reserve was officially expanded to include an additional 68 acres of the West Campus property, including all of Devereux Slough and the grasslands to the west, for a total area of 117 acres. In 1998 an additional 40 acres to the west was incorporated into the COPR by action of the UC regents.

Significant changes have occurred to the natural landscape in and around the Reserve over the past 100 years (Fig. 13 A to D). Activities have included episodes of agricultural, military, private estate, institutional, residential, and commercial development affecting the lands and the watershed of Devereux Slough.

List of most common invasive exotic plant species.

- *Acacia longifolia* Golden Wattle (Mimosaceae)
- *Arundo donax* Giant Reed (Poaceae)
- *Myoporum laetum* Myporum (Myoporaceae)
- *Carpobrotus edulis* Hottentot Fig [iceplant] (Aizoaceae)
- *Cortaderia jubata* Pampas Grass (Poaceae)
- *Eucalyptus globulus* Blue Gum Eucalyptus (Myrtaceae)
- *Foeniculum vulgare* Sweet Fennel (Apiaceae)
- *Tamarix aphylla* Tamarisk (Tamaricaceae)
- *Carduus pycnocephalus* Italian Thistle (Asteraceae)
- *Tetragonia tetragonioides* New Zealand Spinach (Aizoaceae)
- *Pennisetum clandestinum* Kikuyu Grass (Poaceae)
- *Phalaris aquatica* Harding Grass (Poaceae)
- *Piptatherum miliaceum* Smilo Grass (Poaceae)
- *Populus alba* White Poplar (Salicaceae)
- *Raphanus sativus* Wild Radish (Brassicaceae)
- *Atriplex semibaccata* Australian Salt Bush (Chenopodiaceae)
- *Brassica nigra* Black Mustard (Brassicaceae)
- *Conium maculatum* Poison Hemlock (Apiaceae)
- *Bassia hyssopifolia* Five-hook (Chenopodiaceae)
- *Centaurea melitensis* Tecolote, Napa Thistle (Asteraceae)
- *Cynodon dactylon* Bermuda Grass (Poaceae)
- *Lolium multiflorum* Italian Ryegrass (Poaceae)
- *Nicotiana glauca* Tree Tobacco (Solanaceae)
- *Mesembryanthemum nodiflorum* Slender Crystalline Iceplant (Aizoaceae)
- *Opuntia ficus-indica* Indian-Fig (Cactaceae)
- *Pennisetum villosum* Feathertop (Poaceae)
- *Pittosporum undulatum* Victorian Box (Pittosporaceae)

Coal Oil Point Reserve

- *Ricinus communis* Castor Bean (Euphorbiaceae)
- *Salsola tragus* Russian Thistle (Chenopodiaceae)

Regional sensitive plants. Prepared by Cristina Sandoval and Wayne Ferren in 1997.

<i>SPECIES</i>	<i>SITE</i>	<i>STATUS</i>	<i>HABITAT</i>	<i>REFERENCE</i>
<i>Alopecurus Saccatno</i>	Isla Vista	local concern-wetland	VP	Strong, Wiskowski
<i>Anagalis minimus</i>	Isla Vista, Ellwood	local concern-wetland	VP	Strong, Wiskowski
<i>Anemopsis californica</i>	COPR	local concern-wetland	Near SM	Cowan, Clark
<i>Antirrhinum nuttalianum</i>	Dos Pueblos, Carpinteria	local concern, CNPS4, C3c	Disturbed upland	CNPS, Strong, Wiskowski
<i>Aphanisma blitoides</i>	Point Sal, Lion's Head	CNPS 1B/C2	Coastal scrub	Wiskowski, CDFG
<i>Arthrocnemum subterminale</i>	Carpinteria, Goleta	local concern-wetland	SM	Wiskowski
<i>Astragalus trichopodus ssp trichopodus</i>	Point Sal, El Capitan, Arroyo Burro	local concern	Bluffs	Strong, Wiskowski
<i>Atriplex coulteri</i>	UCSB campus, lagoon, other?	northern limit CNPS 1B	Coastal scrub	CNPS
<i>Atriplex serenana var davidsonii</i>	UCSB campus lagoon	CNPS 1B CE/C2	Coastal scrub	CNPS
<i>Atriplex watsonii</i>	Goleta Carpinteria	local concern-wetland	Edge of SM, coastal bluffs	Strong, Wiskowski
<i>Baccharis plummerae</i>	UCSB main campus, Gaviota Pass, Refugio Rd. COPR lagoon	CNPS 4		Strong, Wiskowski
<i>Boisduvalia glabella</i>	Devereux, Isla Vista	local concern-wetland	VP	Strong, Wiskowski
<i>Calandrinia breweri</i>		CNPS 4	Coastal scrub	CNPS
<i>Calandrinia martima</i>	Channel Islands, Point Sal	CNPS 4	Coastal bluff, scrub	CNPS, Wiskowski
<i>Callitriche marginata</i>	Isla Vista, Ellwood	local concern-wetland	VP	Wiskowski
<i>Centaurium muehlenbergii</i>	Ellwood	southern limit		Ferren, pers. observation
<i>Chorizanthe rectispina</i>		CNPS 1B/C2	Coastal scrub	CNPS
<i>Cordylanthus maritimus ssp maritimus</i>	Carpinteria	CNPS 1B, CE/CF	SM	CNPS, Strong, Wiskowski
<i>Crassula aquatica</i>	Isla Vista, Ellwood	local concern-wetland	VP	Wiskowski
<i>Deschampsia danthonoides</i>	Isla Vista	local concern-wetland		Wiskowski
<i>Dichondra</i>		CNPS4/C3c`	Coastal scrub	CNPS

Coal Oil Point Reserve

SPECIES	SITE	STATUS	HABITAT	REFERENCE
<i>occidentalis</i>				
<i>Elatine brachysperma</i>	Isla Vista, Ellwood	local concern-wetland	VP	Strong, Wiskowski
<i>Elatine californica</i>	Goleta	restricted habitat	Pasture	Strong
<i>Eryngium armatum</i>	Isla Vista	local concern-wetland, s-limit	VP	Strong, Wiskowski
<i>Eryngium vaseyi</i>	Isla Vista, More Mesa, Ellwood	local concern-wetland	VP	Strong, Wiskowski
<i>Hemizonia parryi ssp</i>		CNPS 1B/C2 northern limit	VP	CNPS
<i>Hordeum brachyantherum</i>	Isla Vista, Ellwood, West campus	local concern-wetland	VP	Strong, Wiskowski
<i>Hordeum intercedens</i>	Goleta?	CNPS	VP,SM	CNPS
<i>Hutchinsinia procumbens</i>	Carpinteria	local concern-wetland	SM	Strong, Wiskowski
<i>Juncus acutus var leopoldii sphaerocharpus</i>	extirpated So. Co.? Carpinteria, Goleta, Gaviota, Hollister Ranch	CNPS 4 local concern-wetland	SM, dune seeps	CNPS, Strong, Wiskowski
<i>Lasthenia conjugens</i>	Isla Vista	local concern-wetland CNPS 1B/C1	VP	CNPS, Strong, Wiskowski, CDFG
<i>Lasthenia fremontii</i>	Isla Vista	local concern-wetland	VP	Wiskowski
<i>Lasthenia glabrata spp coulteri</i>	Goleta, Carpinteria	CNPS 1B local concern-wetland rare	SM	CNPS, Strong, Wiskowski
<i>Lepidium latipes</i>	Carpinteria, Sta. Maria, Santa Cruz Island	CNPS 4	VP	Wiskowski
<i>Limonium californicum</i>	Goleta	local concern-wetland	Edge of SM	Wiskowski
<i>Malacothrix incana</i>	Goleta, Carpinteria, Sta. Maria River	CNPS 4, endemic	Dune	CNPS, Strong, Wiskowski
<i>Malacothrix saxatalis var saxatalis</i>	Bell Canyon, Ellwood Beach, Ellwood Pier, Arroyo Burro, Gaviota, Refugio	CNPS 4 endemic	Bluffs	Strong, Wiskowski
<i>Monanthochloe littoralis</i>	Carpinteria, Goleta	local concern-wetland, northern limit	SM	Strong, Wiskowski
<i>Phalaris lemmonii</i>	Isla Vista, Ellwood, More Mesa	local concern, wetland	VP	Strong, Wiskowski
<i>Pilularia americana</i>	Isla Vista	local concern-wetland	VP	Strong, Wiskowski
<i>Plagiobothrys undulatus</i>	Isla Vista, Ellwood	CA endemic, SB rare	VP	Strong

SPECIES	SITE	STATUS	HABITAT	REFERENCE
<i>Plantago bigelovii</i> ssp <i>bigelovii</i>	West Campus	local concern-wetland	VP	Strong Wiskowski
<i>Psilocarphas brevissimus</i>	Isla Vista, Ellwood	restricted habitat	VP	Strong
<i>Sanicula hoffmannii</i>	Point Sal, Jalama, Ellwood	regional endemic	Coastal woodland	Strong
<i>Solanum xantii</i> var <i>hoffmannii</i>	Isla Vista?	endemic	Coastal scrub	Strong, Wiskowski
<i>Suaeda esteroa</i>	Goleta	CNPS 4, northern limit	Coastal scrub, SM	Strong, Wiskowski CNPS
<i>Suaeda taxifolia</i>	Ellwood mesa	CNPS 4	Bluff	CNPS
<i>Triglochin concinna</i>	Carpinteria, Goleta	restricted habitat	Salt marsh	Strong
<i>Triglochin striatum</i>	West Beach (SB)	restricted habitat	Wet bluff	Strong
<i>Veronica peregrina</i> ssp <i>xalapensis</i>	Ellwood, Isla Vista	wetland	VP	Strong, Wiskowski

References for Table 3:

California Department of Fish and Game (CDFG). 1993. Natural Heritage Division, Natural Diversity Data Base. Special Plants List.

California Native Plant Society (CNPS).

Strong, L. The rare, endangered, and sensitive plant species of mainland Santa Barbara, California. B.A. thesis in Environmental Studies. University of California, Santa Barbara.

Wiskowski, T. 1988. Sensitive Plants of Santa Barbara County. Division of Environmental Review, Resource Management Department, County of Santa Barbara.

Rare vertebrate species at COPR.

Prepared by Mark Holmgren in 1996.

Species	Scientific Name	Federal	State	Other
BIRDS				
Bank Swallow Former nester east of Goleta Slough mouth, now a rare migrant.	<i>Riparia riparia</i>		CSC	
Belding's Savannah Sparrow Territorial pairs present since spring 1990; bred in 1993 and 1996. Now the most upcoast estuary for this endangered race.	<i>Passerculus sandwichensis beldingi</i>	SC	E	
Black Swift	<i>Cypseloides niger</i>		CSC	
Brewster's Willow	<i>Empidonax traillii</i>		E	
Flycatcher Common late summer, spring, and fall migrant that regularly uses COPR.	<i>brewsteri</i>			
Brown Pelican Common mid-summer to spring immediately off-shore and occasionally on beach.	<i>Pelecanus occidentalis californicus</i>	E		
Burrowing Owl Formerly a common wintering and breeding species along the coast, now only a rare fall and early winter visitor. Suitable habitat exists south of golf course.	<i>Athene cunicularia</i>	SC	CSC	Local concern
California Least Tern Former breeder, now mid-summer and fall visitor at mouth of Devereux Slough and occasionally in interior slough mud flats.	<i>Sterna antillarum browni</i>	E	E	
California Quail Despite severe declines along the coastal plain, small flocks apparently persist in the dunes.	<i>Callipepla californicus</i>			Local concern
Light-footed Clapper Rail Former rare vagrant; not seen since 1940s.	<i>Rallus longirostris levipes</i>	E	E	
Coast Horned Lark Former common breeder now almost completely absent from COPR; still breeds in small numbers on Goleta Slough runway aprons and infields.	<i>Eremophilus alpestris actii</i>	SC	CSC	Local concern
Common Loon Common along coast in winter, occasionally in slough channel during high water periods.	<i>Gavia immer</i>		CSC	

Species	Scientific Name	Federal	State	Other
BIRDS				
Cooper's Hawk A few pairs breed locally and thus seen occasionally in summer, but much more common in fall to early spring as a visitor.	<i>Accipiter cooperii</i>		CSC	
Golden Eagle Rare visitor.	<i>Aquila chrysaetos</i>		CSC	
Grasshopper Sparrow Former breeder from foothills probably to coast, now an exceedingly rare breeder in southern SB Co.; rare migrant at COPR.	<i>Ammodramus savannarum</i>		CSC	Local concern
Least Bittern Rare visitor to fresh and brackish water habitats at COPR.	<i>Ixobrychus exilis</i>	SC	CSC	
Long-billed Curlew Occurs regularly from mid-summer to April on beach and slough interior.	<i>Numenius americanus</i>	SC		
Merlin Regular visitor fall to spring.	<i>Falco columbarius</i>	FP		
Northern Harrier Regular visitor fall, winter spring.	<i>Circus cyaneus</i>		CSC	
Osprey Uncommon fall and winter visitor, more frequent in recent years.	<i>Pandion haliaetus</i>		CSC	
Peregrine Falcon Sightings increasingly common; fall, winter, spring visitor.	<i>Falco peregrinus</i>	E	E	
Prairie Falcon Rare visitor.	<i>Falco mexicanus</i>	FP	CSC	
Purple Martin Rare migrant.	<i>Progne subis</i>		CSC	
Red-shouldered Hawk Breeds at COPR, common year-round	<i>Buteo lineatus</i>	FP		
Red-tailed Hawk Breeds at COPR, present year-round	<i>Buteo jamaicensis</i>	FP		
Rough-legged Hawk Rare winter visitor.	<i>Buteo lagopus</i>	FP		
Sharp-shinned Hawk Common visitor fall through spring	<i>Accipiter striatus</i>		CSC	
Short-eared Owl	<i>Asio flammeus</i>	FP	CSC	Local

Coal Oil Point Reserve

Species	Scientific Name	Federal	State	Other
BIRDS				
				concern
Rare fall and winter visitor to coastal grassy mesa and wetlands. Wintering population declining and absent in some years. Not recently seen at COPR, but present on Goleta Slough and More Mesa.				
Snowy Plover	<i>Charadrius alexandrinus nivosus</i>	T	CSC	
Regular visitor from July through April. Principal wintering locale for southern S. B. Co.				
Southwestern Willow Flycatcher	<i>Empidonax traillii eximius</i>	E	E	
Difficult to distinguish from other races of this species and no evidence that this race migrates through this portion of the coast.				
Tricolored Blackbird	<i>Agelaius tricolor</i>	SC	CSC	Local concern
Formerly more common as a breeding and wintering species, now an uncommon and very local breeder in Santa Barbara County. Rare at COPR.				
Virginia Rail	<i>Rallus limicola</i>			Local concern
Until recently bred in the Goleta and Devereux systems. Now a visitor late summer to spring.				
White-faced Ibis	<i>Plegadis chihi</i>	SC	CSC	Local concern
(rookery only) Historically bred in former freshwater marsh, now the golf course. Now rare spring, winter, fall visitor.				
White-tailed Kite	<i>Elanus caeruleus</i>	FP		Local concern
Occasionally breeds, year-round occupant.				
Wilson's Warbler	<i>Wilsonia pusilla</i>		CSC	Local concern
Former breeder in coastal riparian and willow wetlands along the South Coast of S.B. Co., now very common migrant and rare wintering species.				
Yellow Warbler	<i>Dendroica petechia</i>		CSC	Local concern
Almost extirpated as a local breeder; very common migrant through COPR.				
Yellow-breasted Chat	<i>Icteria virens</i>		CSC	Local concern
Former breeder in dense coastal riparian and willow wetlands along the South Coast of S.B. Co., now very rare migrant at COPR.				
MAMMALS				
Badger	<i>Taxidea taxus</i>		CSC	

Species	Scientific Name	Federal	State	Other
BIRDS				
Burrows found at COPR as late as the mid-1980s. Now largely extirpated from even the foothills near Goleta and Santa Barbara.				
Pallid Bat Probably present at COPR.	<i>Antrozous pallidus</i>			
San Diego Black-tailed Jackrabbit Extirpated from the Goleta Slough system in the 1980s, COPR probably lost its population prior to that.	<i>Lepus californicus bennettii</i>	SC	CSC	Local concern
Townsend's Big-eared Bat Probably present at COPR, but never confirmed.	<i>Plecotus townsendi</i>	SC	CSC	
AMPHIBIANS AND REPTILES:				
Red-legged Frog Presence in the dune pond or dune swale (the only possible habitats in which it could occur) has never been determined.	<i>Rana aurora draytoni</i>	T	CSC	Local concern
California Legless Lizard Annotated record on dunes	<i>Anniella pulchra</i>	E		
FISH				
Tidewater Goby Extirpated for several years, but could be reintroduced.	<i>Eucylogobius newberryi</i>	E	E	

Key:

Federal _____	State _____
E=Endangered	E
T=Threatened	T
SC=Species of Concern	CSC=Calif. Species of Special Concern
FP=Federally Protected	This list has not received
(pertains to otherwise	sanction by the Calif. Dept. F&G
undesignated Birds of Prey)	

Coal Oil Point Reserve

Partial list of sensitive invertebrates of Coal Oil Point Reserve.

Prepared by Cristina Sandoval in 2000.

Common name	Scientific name	Location	Status	Comments
Wandering Skipper	<i>Panoquina errans</i>	Marsh edge	G2 (imperiled globally because of rarity)	Candidate for listing in 1974. Larvae feed on salt grass only. Have been observed at the mouth of the slough. Large population on at southern edge of dune pond
Western Pigmy Blue	<i>Brephidium exile</i>	Marsh edge	G5 (globally secure)	Larvae feed on chenopods on slough margin.
	<i>Lutica maculata</i>	Foredunes	rare	
Sand Tiger Beetle	<i>Cicindella hirticollis grvida</i>	Beach in front of slough mouth		Larvae burrow along wet margin of estuary. Adults feed on flies along high tide by slough mouth
Globose Dune Beetle	<i>Coelus globosus</i>	Foredunes	Category 2 FWLS	Found under sand around roots of foredunes plants.

Birds of Coal Oil Point Reserve.

Prepared by Mark Holmgren in 2001

Red-throated Loon	Black Swift
Pacific Loon	Vaux's Swift
Common Loon	White-throated Swift
Pied-billed Grebe	Black-chinned Hummingbird
Horned Grebe	Broad-billed Hummingbird
Eared Grebe	Anna's Hummingbird
Western Grebe	Costa's Hummingbird
Clark's Grebe	Calliope Hummingbird
American White Pelican	Rufous Hummingbird
Brown Pelican	Allen's Hummingbird
Double-crested Cormorant	Belted Kingfisher
American Bittern	Acorn Woodpecker
Least Bittern	Red-breasted Sapsucker
Great Blue Heron	Nuttall's Woodpecker
Great Egret	Downy Woodpecker
Snowy Egret	Hairy Woodpecker
Little Blue Heron	Northern Flicker
Tricolored Heron	Olive-sided Flycatcher
Cattle Egret	Western Wood Pewee
Green-backed Heron	Willow Flycatcher
Black-crowned Night Heron	Least Flycatcher
White-faced Ibis	Hammond's Flycatcher
Roseate Spoonbill	Gray Flycatcher
Wood Stork	Western Flycatcher
Fulvous Whistling-Duck	Black Phoebe
Tundra Swan	Say's Phoebe
Greater White-fronted Goose	Vermilion Flycatcher
Brant	Ash-throated Flycatcher
Canada Goose	Sulphur-bellied Flycatcher
Wood Duck	Tropical Kingbird
Green-winged Teal	Cassin's Kingbird

Mallard	Western Kingbird
Northern Pintail	Eastern Kingbird
Blue-winged Teal	Scissor-tailed Flycatcher
Cinnamon Teal	Horned Lark
Northern Shoveler	Purple Martin
Gadwall	Tree Swallow
Eurasian Wigeon	Violet-green Swallow
American Wigeon	Rough-winged Swallow
Canvasback	Bank Swallow
Redhead	Cliff Swallow
Ring-necked Duck	Barn Swallow
Greater Scaup	Western Scrub-Jay
Lesser Scaup	American Crow
Oldsquaw	Plain Titmouse
Surf Scoter	Bushtit
White-winged Scoter	Red-breasted Nuthatch
Bufflehead	White-breasted Nuthatch
Hooded Merganser	Brown Creeper
Red-breasted Merganser	Rock Wren
Ruddy Duck	Bewick's Wren
Turkey Vulture	House Wren
Osprey	Winter Wren
Black-shouldered Kite	Marsh Wren
Bald Eagle	Golden-crowned Kinglet
Northern Harrier	Ruby-crowned Kinglet
Sharp-shinned Hawk	Blue-gray Gnatcatcher
Cooper's Hawk	Western Bluebird
Red-shouldered Hawk	Mountain Bluebird
Red-tailed Hawk	Hermit Thrush
Rough-legged Hawk	Swainson's Thrush
Golden Eagle	American Robin
American Kestrel	Varied Thrush
Merlin	Wrentit
Peregrine Falcon	Brown Thrasher
Prairie Falcon	Northern Mockingbird

California Quail	California Thrasher
Clapper Rail	White Wagtail or
Virginia Rail	Black-backed Wagtail
Sora	Red-throated Pipit
American Coot	American Pipit
Common Moorhen	Cedar Waxwing
Black-bellied Plover	Phainopepla
Lesser Golden-Plover	Loggerhead Shrike
Snowy Plover	European Starling
Semipalmated Plover	Solitary Vireo
Piping Plover	Yellow-throated Vireo
Killdeer	Hutton's Vireo
Mountain Plover	Warbling Vireo
Black-necked Stilt	Red-eyed Vireo
American Avocet	Tennessee Warbler
Greater Yellowlegs	Orange-crowned Warbler
Lesser Yellowlegs	Nashville Warbler
Solitary Sandpiper	Virginia's Warbler
Willet	Lucy's Warbler
Wandering Tattler	Northern Parula
Spotted Sandpiper	Yellow Warbler
Whimbrel	Magnolia Warbler
Long-billed Curlew	Yellow-rumped Warbler
Marbled Godwit	Myrtle's Warbler
Ruddy Turnstone	Audubon's Warbler
Black Turnstone	Black-throated Gray Warbler
Surfbird	Townsend's Warbler
Red Knot	Hermit Warbler
Sanderling	Yellow-throated Warbler
Semipalmated Sandpiper	Palm Warbler
Western Sandpiper	Bay-breasted Warbler
Least Sandpiper	Blackpoll Warbler
Baird's Sandpiper	Black-and-white Warbler
Pectoral Sandpiper	American Redstart
Sharp-tailed Sandpiper	MacGillivray's Warbler

Dunlin	Common Yellowthroat
Stilt Sandpiper	Hooded Warbler
Short-billed Dowitcher	Wilson's Warbler
Long-billed Dowitcher	Yellow-breasted Chat
Common Snipe	Summer Tanager
Wilson's Phalarope	Western Tanager
Red-necked Phalarope	Rose-breasted Grosbeak
Red Phalarope	Black-headed Grosbeak
Parasitic Jaeger	Blue Grosbeak
Little Gull	Lazuli Bunting
Bonaparte's Gull	Indigo Bunting
Common Black-headed Gull	Painted Bunting
Heermann's Gull	Green-tailed Towhee
Mew Gull	Spotted Towhee
Ring-billed Gull	California Towhee
California Gull	Chipping Sparrow
Herring Gull	Clay-colored Sparrow
Thayer's Gull	Brewer's Sparrow
Western Gull	Vesper Sparrow
Glaucous-winged Gull	Lark Sparrow
Glaucous Gull	Lark Bunting
Black-legged Kittiwake	Savannah Sparrow
Caspian Tern	Belding's Savannah Sparrow
Royal Tern	Grasshopper Sparrow
Elegant Tern	Fox Sparrow
Common Tern	Song Sparrow
Forster's Tern	Lincoln's Sparrow
Least Tern	Swamp Sparrow
Black Tern	White-throated Sparrow
Rock Dove	Golden-crowned Sparrow
Band-tailed Pigeon	White-crowned Sparrow
Spotted Dove	Harris' Sparrow
White-winged Dove	Dark-eyed Junco
Mourning Dove	Bobolink
Common Barn-Owl	Red-winged Blackbird

Great Horned Owl	Tricolored Blackbird
Burrowing Owl	Western Meadowlark
Long-eared Owl	Yellow-headed Blackbird
Short-eared Owl	Brewer's Blackbird
Lesser Nighthawk	Great-tailed Grackle
	Brown-headed Cowbird
	Orchard Oriole
	Hooded Oriole
	Northern Oriole
	Purple Finch
	House Finch
	Red Crossbill
	Pine Siskin
	Lesser Goldfinch
	Lawrence's Goldfinch
	American Goldfinch
	Evening Grosbeak
	House Sparrow

Common fishes of Coal Oil Point Reserve.

Scientific name	Common name	Habitat
<i>Girella nigricans</i>	Opaleye	intertidal
<i>Gibbonsia montereyensis</i>	Crevice kelpfish	intertidal
<i>Heterostichus rostratus</i>	Giant kelpfish	intertidal
<i>Alloclinus holderi</i>	Island kelpfish	intertidal
<i>Gibbonsia metzi</i>	Striped kelpfish	intertidal
<i>Oligocottus snyderi</i>	Fluffy sculpin	intertidal
<i>Hypsoblennius gilberti</i>	Rockpool blenny	intertidal
<i>Clinocottus analis</i>	Woolly sculpin	intertidal
<i>Fundulus parvipinnis</i>	California killifish	Slough
<i>Mugil cephalus</i>	Mullet	Slough
<i>Leptocottus armatus</i>	Staghorn sculpin	Slough
<i>Gillichthys mirabilis</i>	Longjaw mudsucker	Slough
<i>Hypsopsetta guttulata</i>	Diamond turbot	Slough
<i>Atherinops affinis</i>	Topsmelt	Slough
<i>Eucyclogobius newberryi</i> * (extirpated)	Tidewater goby	Slough

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