

CALIFORNIA COASTAL COMMISSION

45 FREMONT STREET, SUITE 2000
SAN FRANCISCO, CA 94105-2219
TELEPHONE (415) 904-5200
FAX (415) 904-5200

RECORD PACKET COPY

**W 11b****STAFF REPORT AND RECOMMENDATION****ON CONSISTENCY DETERMINATION**

Consistency Determination No.	CD-089-02
Staff:	JRR-SF
File Date:	12/6/2002
60th Day:	2/4/2003
75th Day:	2/19/2003
Commission Meeting:	1/8/2003

FEDERAL AGENCY: Department of the Air Force**DEVELOPMENT****LOCATION:**

Vandenberg Air Force Base, Santa Barbara County
(Exhibit 1-4)

DEVELOPMENT**DESCRIPTION:**

2003 Interim Snowy Plover Management Plan

SUBSTANTIVE

FILE DOCUMENTS: (See Page 18)

EXECUTIVE SUMMARY

The Air Force submitted a consistency determination for an interim beach management plan for the 2003 snowy plover nesting season, which provides for restrictions to beach access on Vandenberg Air Force Base (Vandenberg) in order to protect the western snowy plover, a federally listed threatened species. The Air Force proposes to re-implement the previous year's interim plan with two revisions. The Air Force proposes that the following beaches remain open for recreational use: (1) general public access to 0.5 mile of Surf Beach in the vicinity of Surf Station; (2) military personnel and limited civilian (by pass only and for fishing purposes) access to the northernmost 0.25 mile of Wall Beach; and (3) military personnel access only to Minuteman Beach. The interim beach management plan also provides for beach closure enforcement, plover monitoring, public education, predator control, and exotic plant removal. For this year, the Air Force has modified its plan to: 1) allow the placement of four temporary shelters on open beaches to provide cover for enforcement personnel; and 2) increase the number (from 25 to 50) of violations allowed on Surf Beach before completely closing it.

The Air Force has been working with the Fish and Wildlife Service (Service) and the Commission staff for a number of years on the conflict caused by plover habitat protection and recreational use of the beach. Both of these needs are critical along this stretch of coast. Vandenberg provides very valuable nesting habitat for the plover and is vital to the recovery of the species. However, Vandenberg is located on a stretch of coast that has limited public access opportunities.

In reviewing similar restrictions in the past, the Commission has found these restrictions to be consistent with the public access and recreation (Sections 30210, 30213, and 30214) and the habitat (Section 30240) policies of the Coastal Act. Past monitoring data indicated that the snowy plover population has been unstable over the past few years and the Air Force determined that it is necessary to implement measures that are more protective of the plover. The closures are a necessary component of the Air Force's habitat management plan, and therefore, the plan is consistent with access policies of the Coastal Act, which allow habitat protection to be a basis for limits on access and recreation opportunities.

The sandy beaches on Vandenberg support nesting snowy plovers, a federally listed threatened species. In addition, the Service has designated these beaches as "Critical Habitat" for the snowy plover. Therefore, the snowy plover habitat on Vandenberg is an environmentally sensitive habitat area (ESHA). The plan allows the Air Force to minimize human disturbances to plover nests by restricting public and military access. In addition, the plan provides for predator management to reduce plover losses from coyotes, small mammals, crows, ravens, raptors, and other predatory birds. The plan includes measures to reduce predation and remove predators, using both non-lethal and lethal techniques, in manner that protects the area's ecology. The management plan will not significantly disturb the habitat and is consistent with ESHA policy of the CCMP (Coastal Act Section 30240).

STAFF SUMMARY AND RECOMMENDATION:

- I. **Project Description.** The Air Force proposes restrictions on beach access (including military personnel) at beaches where snowy plovers nest on Vandenberg Air Force Base in northern Santa Barbara County. The closures will occur during the plover's nesting season, March through September. Under this interim plan, the Air Force proposes to provide recreational access during the nesting season to three separate areas:
 - Public access to 0.5 mile of Surf Beach in the vicinity of Surf Station, using the existing access trail and a trail from Ocean Beach County Park along the back dunes. The southern boundary of the closure will be just south of the Surf Station access route. The northern boundary will be established to avoid the cluster of several nests that typically occurs on the northern edge of this beach segment (Exhibit 2).
 - Military access and civilian fishing access (subject to Vandenberg pass) only to the northernmost 0.25 mile of Wall Beach (Exhibit 3).

- Military access only to the northernmost 0.5 mile of Minuteman Beach, on the bluff-backed beach north of the existing access trail where snowy plover nesting has not been known to occur to date (Exhibit 4).

The Air Force's enforcement program provides for the use of, at least, three enforcement officers. One person will be stationed at Surf Beach, another at Ocean Park, and a third person will patrol both Wall and Minuteman Beaches. The Air Force will also conduct periodic night patrols. In addition, the Air Force proposes to limit its enforcement staff to foot or horseback and to restrict them to the wet sand in closed areas to the maximum extent possible. The Air Force's enforcement staff will use "all terrain vehicles" only for emergency purposes and will remain on the wet sand to the maximum extent possible.

The plan provides for full closure of open beaches if adequate enforcement staff is not hired or if the number of identified violations exceeds the following:

- 50 violations of the closed area of Surf Beach;
- 10 violations of the closed area of Wall Beach;
- 5 violations of the closed area of Minuteman Beach.

The 50-violation limit is an increase over last year's 25-violation limit. The Air Force justifies this increase because it has greatly increased its efficiency and effectiveness at detecting and verifying violations. All other beach areas on Vandenberg supporting nesting snowy plovers would be closed from March 1 through September 30, 2003. In all, 11.25 miles (90 percent) of nesting habitat on Vandenberg would be protected during the nesting season.

In addition, the plan provides for the management of coyotes, small mammals, crows, ravens, raptors, any other potential predators. The Air Force proposes to implement the predator management plan that was previously approved by the Commission, with one minor modification: the Air Force will not contract with Department of Agriculture, Wildlife Services, to assist in the predator management, but rather rely on existing consultants to assist. Some of the major components of this predator management plan include the following:

- Beach clean up and carrion removal to eliminate debris that attracts these predators to the beach.
- Lethal and non-lethal removal of predators from the snowy plover nesting habitat.
- No lethal removal of species that are listed by federal or state agencies as Threatened or Endangered (e.g., peregrine falcon).
- Lethal removal of species for which non-lethal management techniques are determined to be infeasible or not available and where individual animals are identified as being directly responsible for predation.

- Lethal removal will cease once it is confirmed that the identified predation problem in the area has ceased.

The Air Force is also proposing to place four pre-constructed temporary shelters on open beaches to provide cover for enforcement personnel. These structures will be placed on the beach prior to the beginning of the nesting season and removed after the end of the season.

II. Status of Local Coastal Program. The standard of review for federal consistency determinations is the policies of Chapter 3 of the Coastal Act, and not the Local Coastal Program (LCP) of the affected area. If an LCP that the Commission has certified and incorporated into the CCMP provides development standards that are applicable to the project site, the LCP can provide guidance in applying Chapter 3 policies in light of local circumstances. If the Commission has not incorporated the LCP into the CCMP, it cannot guide the Commission's decision, but it can provide background information. The Commission has certified Santa Barbara County's LCP and incorporated it into the CCMP.

III. Federal Agency's Consistency Determination. The U.S. Air Force has determined the project to be consistent to the maximum extent practicable with the California Coastal Management Program.

IV. Staff Recommendation. The staff recommends that the Commission pass the following motion in support of its action:

I move that the Commission concur with consistency determination CD-089-02 and that the project described therein is fully consistent, and thus is consistent to the maximum extent practicable, with the enforceable policies of the California Coastal Management Program (CCMP).

Staff recommends a **YES** vote on the motion. Passage of this motion will result in an agreement with the determination and adoption of the following resolution and findings. An affirmative vote of a majority of the Commissioners present is required to pass the motion.

A. Resolution To Agree With Consistency Determination. The Commission hereby concurs with the consistency determination by U.S. Air Force, on the grounds that the project described therein is fully consistent, and thus is consistent to the maximum extent practicable, with the enforceable policies of the CCMP.

V. Findings and Declarations

The Commission finds and declares as follows:

A. Public Access and Recreation. Section 30210 of the Coastal Act provides for maximizing public access and recreation opportunities, providing that such activities take into account natural resource protection needs. Section 30213 provides for protection of lower cost visitor and recreational facilities. Section 30214 elaborates on access management considerations, providing that:

(a) The public access policies of this article shall be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending on the facts and circumstances in each case including, but not limited to, the following:

...

(2) The capacity of the site to sustain use and at what level of intensity.

(3) The appropriateness of limiting public access to the right to pass and repass depending on such factors as the fragility of the natural resources in the area....

The access policies of the Coastal Act clearly provide for managing public access and recreational opportunities in order to protect natural resource areas. However, in order to understand the significance of the impact of the proposed restrictions, the Commission must analyze these access restrictions in the context of the existing access resources in the area. Access to the northern Santa Barbara County coast is one of the more limited areas of the California coast. Between Gaviota and Point Sal is a 64-mile stretch of coastline that is only fully open to the public at two locations: Surf Beach and Jalama Beach. There are some other limited access opportunities on Vandenberg, which require permits from the Air Force Base and are limited to fishing. All of these beaches are subject to temporary closures during missile launches at Vandenberg.

The Commission has a long and extensive history of concern over the limitations on public access to this area of the coast, including the Hollister and Bixby Ranch areas. Its concerns include insuring consistency of new development with the public access provisions of the Coastal Act in the review of permits and LCPs. Although the Santa Barbara County LCP contains public access requirements that may be triggered by development at Bixby Ranch, such development has not occurred and that area remains inaccessible. In addition, the Commission concurred with a consistency determination (CD-21-82) by the Air Force for the construction of a Space Shuttle launch facility, in part, because it included additional public access at Ocean Beach and north of Jalama Beach. In another consistency determination (CD-5-89), the Commission staff recommended objection (the Air Force withdrew the project at the hearing) to a proposal to construct a new launch facility because of impacts, including closures, to the use of Jalama Beach. Finally, the Commission objected to a consistency determination (CD-65-90) for the Air Force's proposed acquisition of development rights on Bixby Ranch, because it affected the local government's ability to implement the access provisions of its LCP. These actions demonstrate that protecting existing and ensuring new access opportunities in this area of the coast is a high priority for the Commission.

Although Vandenberg provides critically needed public access opportunities in an area where access is limited, it is equally, if not more, critical to the survival of the snowy plover. As discussed in the ESHA section below, Vandenberg provides important habitat that is necessary for the survival and recovery of the bird. Because of the historic and geographic limitations on public access to the shoreline, snowy plover issues on publicly open beaches on Vandenberg are complex and difficult issues for the Commission. The Commission is forced

to balance protecting snowy plover habitat that the Service has identified as critical to the survival and recovery of the species and ensuring maximum public access to the shoreline.

In its biological opinion for the Air Force's 2001 interim beach management plan, the Service describes this impact from the public recreational use of the beach as follows:

*The Pacific coast population of the western snowy plover has experienced widespread loss of nesting habitat and reduced reproductive success at many nesting locations due to urban development and the encroachment of European beachgrass. Human activities such as walking, jogging, unleashed pets, horseback riding, and off-road vehicles can destroy the western snowy plover's cryptic nests and chicks. Indirect impacts from these activities include disturbance of western snowy plover adults to the extent that they abandon nests or interference with incubation to the point that eggs become buried by sand or fail to hatch because of exposure to cold or heat (Warriner et al. 1986). Western snowy plovers do not usually abandon their nests because of wind without another compounding factor such as human disturbance (Page, pers. comm.). Human activities can also interfere with foraging activities by disrupting the ability of adults and chicks to get to the wet beach to feed and return to the dunes or their nest (Burger 1993). Chicks can also become separated from their parents as a result of human disturbance of broods. Such disturbance could cause or contribute to chick mortality by interfering with essential chick-rearing behaviors or by causing intolerable stresses directly to the chicks (Cairns and McLaren 1980). For example, separation of chicks and their parent can lead to lethal exposure to wind and cold temperatures or disturbance that interferes with foraging could result in the starvation of western snowy plover chicks. In some instances, disturbance associated with these types of recreational activities is expected to temporarily flush western snowy plovers and not affect the birds in such a substantial manner. In other cases, such disturbance could interfere with the metabolism and thermoregulation of western snowy plover chicks and migrating or wintering adults such that they starve or egg production is impaired during the subsequent nesting season (Cairns 1982). The available information regarding the energetics of western snowy plovers is inadequate to assess the likelihood that such injury or mortality would result. In 1998, a pattern of increased chick loss over weekends (when increased human use of beach areas occurs) was observed by western snowy plover researchers at Point Reyes National Seashore. In response to this observation, a protocol for collecting data on chicks was standardized in 1999 and 2000. Chicks were observed on Fridays and then again on Mondays (or the day after a holiday). Chick loss over weekends was over 1.5 times the weekday loss. Data from 1999 and 2000 show almost identical trends (Page, pers. comm.).*¹

Additionally, since 1996 (when regular monitoring of fledging success began), the monitoring reports for snowy plovers on Vandenberg have documented that increased restrictions to recreational use corresponds with increases in fledging success.

¹ Biological Opinion for Beach management and the Western Snowy Plover on Vandenberg Air Force Base for the 2001 Breeding Season (1-8-01-F-13).

Table 1: Chick fledging rate by beach segment on Vandenberg, 1997 to 2002.²

Year	North Beaches ³	Purisima Beaches ⁴	South Beaches ⁵	Base Wide
1997	33-34%	23-27%	12%	24-26%
1998	0%	--	12%	6%
1999	53%	--	53%	53%
2000	32%	--	30%	31%
2001	48%	--	45%	47%
2002 ⁶	25%	50%	52%	41%

These monitoring data generally show that fledging success improved after the Air Force implemented its closures. These data seem to indicate that recreational use adversely affects fledging success.

The monitoring reports also provide some data on nest hatching success on Vandenberg.

Table 2: Percent hatch rate of known fate nests by beach segment on Vandenberg, 1994-2002⁷

Year	North Beaches	Purisima Beach	South Beaches	Base-wide
1994	28	75	28	31
1995	31	100	46	43
1996	57	93	48	55
1997	22	93	11	19
1998	42	50	29	37
1999	78	78	36	54
2000	47	0	28	32
2001	51	83	53	53
2002	45	80	48	47

² Western Snowy Plovers on Vandenberg Air Force Base, 2000 final Report, Thomas E. Applegate and Sandra J. Schultz, January 2, 2001, p. 22.

³ Includes Minuteman, Shuman, and San Antonio Beaches.

⁴ Includes the Purisma and Purisma North Colonies, the Air Force stopped collecting fledging data after 1997.

⁵ Includes Wall, Surf North, and Surf South Beaches.

⁶ 2001 and 2002 data is from an Email sent by Nancy Read Francine, Air Force Wildlife Biologists, 12/14/01 and 12/16/02.

⁷ Western Snowy Plovers on Vandenberg Air Force Base, 2000 final Report, Thomas E. Applegate and Sandra J. Schultz, January 2, 2001, p. 21.

This table shows the percentage of nests that successfully hatched in any given area. On the Purisima Beaches, the hatch rate was high in most years and this nesting success is probably attributable to very low recreational use of the beaches (use is limited to fishing and requires a permit), and fencing and other predator controls implemented to protect the least tern, a federally listed endangered species that nests on that beach. Excluding the Purisima Beach data and comparing south beaches, which are generally open to recreational use, and north beaches, which are generally closed to recreational use, there do not appear to be any obvious conclusions that can be reached. However, based on recent data (within the last four years) collected during a time with extensive restrictions on beach use, the hatching success seems to be increasing.

The Pacific Coast population of the western snowy plover has been unstable over the last few years. As of last year, the range-wide population of adult plovers has decreased by 29% from (1371 to 976).⁸ The population decline on Vandenberg has also been unstable. The Vandenberg population has declined from 242 adult birds in 1991 to a low of 78 in 1999.⁹ Recent monitoring data at Vandenberg show an increase in plover population since the Air Force increased its beach management efforts in 2000.

Table 3: Western snowy plover population size and number of nests at Vandenberg.¹⁰

Year	Number of Plovers	Total Number of Nests	Total Number of Nests Hatched
1994	223	260	72
1995	211	223	84
1996	224	286	149
1997	238	411	77
1998	132	150	49
1999	78	104	52
2000	105	140	41
2001	122	182	96
2002	201	298	140

The Air Force's consistency determination provides for the option of closing all the beaches to recreation use if the Air Force cannot meet its enforcement commitments. The Air Force has prepared an enforcement plan, which provides for placement of an enforcement officer at the

⁸ Biological Opinion for Beach management and the Western Snowy Plover on Vandenberg Air Force Base for the 2001 Breeding Season (1-8-01-F-13), P.14.

⁹ Ibid.

¹⁰ Biological Assessment Western Snowy Plover on Vandenberg Air Force Base for the 2003 Breeding Season, October 4, 2002, Attachment 2.

Surf Station and at Ocean Beach Park and one additional person patrolling Wall and Minuteman Beaches. The plan also provides for nighttime patrols. Finally, the plan provides for closing the open portions of the beach if the number of violations exceeds any of the following: 1) 50 violations at Surf Beach; 2) 10 violations at Wall Beach; 3) 5 violations at Minuteman Beach. The determination of violation is not limited to the number of people cited, but includes documentation based on footprints, trash, or other evidence of human use. In addition, since this is an interim plan for the 2003-breeding season, the Commission will have the ability to require changes to future enforcement plans should there be evidence that there is not enough enforcement to protect the snowy plover. Therefore, the Commission finds that the enforcement plan will provide for protection of the snowy plover in a manner consistent with the Coastal Act.

In conclusion, the Commission finds that the proposed beach restrictions are consistent with the access policies of the Coastal Act because they are necessary to protect the plovers. Therefore, the Commission finds that the proposed activity is consistent with the access policies of the CCMP.

B. Environmentally Sensitive Habitat. Section 30240(a) of the Coastal Act provides that:

Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas.

1. Description of the ESHA. The U.S. Fish and Wildlife Service listed the Pacific Coast population of the Western snowy plover as "threatened" in March 1993 under the Endangered Species Act (ESA) of 1973, as amended. The ESA mandates federal agencies, such as the Air Force, to protect snowy plovers on their land and enforce the provisions of the ESA, which prohibit accidental and intentional take. The ESA also places a proactive requirement on all federal agencies to participate in the recovery of the species.

The beaches on Vandenberg provide both nesting and wintering habitat for the snowy plover. There are approximately 12.5 miles of beach used by the plover on the base and the Service has listed all of these beaches as critical habitat for the snowy plover. In its most recent biological opinion, the Service described the importance of Vandenberg to the recovery of the snowy plover as follows:

Since the first comprehensive surveys for western snowy plovers in western North America in the late 1970s, Vandenberg AFB has consistently held one of the largest concentrations of breeding western snowy plovers along the west coast of the United States (Page and Stenzel 1981, Page et al. 1991). Vandenberg AFB accounted for 242 of 1371 adult western snowy plovers on a 1991 breeding-season survey of the California coast and had the highest number of adults of any area in California in the 1991 survey (Page 2001). Although no coast-wide surveys were attempted between 1992 and 1994, Vandenberg AFB supported a mean number of 223 adult western snowy plovers during the 1994 breeding season, indicating

continuing high numbers (Persons 1995). In 1995, a coalition of researchers counted western snowy plovers in mid-breeding season in California coastal areas covered on previous state-wide surveys. They tallied a total of 974 adults; the highest regional total, 213 birds, was again at Vandenberg AFB (Page 2001).

Vandenberg AFB provides one of the greatest opportunities for recovery of the western snowy plover throughout its range because it has consistently supported one of the largest concentrations of breeding individuals throughout the species' range, has the largest continuous mainland coastal habitat under Federal ownership, and is expected to be able to support 400 adult birds during the breeding season.¹¹
(Emphasis Added)

Thus, the Commission finds that the sandy beaches on Vandenberg that provide nesting habitat for the snowy plover are ESHAs under the Coastal Act.

2. Access Restrictions. Section 30240 of the Coastal Act restricts the types of uses within an ESHA to activities that are dependent on the sensitive resources. In this case, the Air Force proposes to restrict beach recreation activities in order to protect the snowy plover. In last year's biological opinion, the Service discussed impacts of recreational activities on the snowy plover:

Human activities such as walking, jogging, unleashed pets, horseback riding, and off-road vehicles can destroy the western snowy plover's cryptic nests and chicks. Indirect impacts from these activities include disturbance of western snowy plover adults to the extent that they abandon nests or interference with incubation to the point that eggs become buried by sand or fail to hatch because of exposure to cold or heat (Warriner et al. 1986). Human activities can also interfere with foraging activities by disrupting the ability of adults and chicks to get to the wet beach to feed and return to the dunes or their nest (Burger 1993). Chicks can also become separated from their parents as a result of human disturbance of broods. Such disturbance could cause or contribute to chick mortality by interfering with essential chick-rearing behaviors or by causing intolerable stresses directly to the chicks (Cairns and McLaren 1980). ... In some instances, disturbance associated with these types of recreational activities is expected to temporarily flush western snowy plovers and not affect the birds in such a substantial manner. In other cases, such disturbance could interfere with the metabolism and thermoregulation of western snowy plover chicks and migrating or wintering adults such that they starve or egg production is impaired during the subsequent nesting season (Cairns 1982). In 1998, a pattern of increased chick loss over weekends (when increased human use of beach areas occurs) was observed by western snowy plover researchers at Point Reyes National Seashore. Chicks were observed on Fridays and then again on Mondays (or the day after a holiday). Chick loss over weekends was over 1.5 times the weekday loss. Data from

¹¹ U.S. Fish and Wildlife Service Biological Opinion, March 9, 2001.

1999 and 2000 show almost identical trends (Page, pers. comm.).¹²

The Service's biological opinion describes the effects on plovers from recreational activities on the beach. Based on this opinion, the Air Force determined that it is necessary to significantly reduce beach recreational activities in order to prevent continued decline of plover numbers and provide adequate protection of the ESHA. Therefore, the Commission finds that the proposed project is dependent on the sensitive resources.

Section 30240 of the Coastal Act also requires activities within an ESHA to avoid significant disruption to the sensitive habitat. The proposed project will reduce the beach recreation activities within the ESHA. As described above, these activities can adversely affect snowy plover reproductive success. Therefore, the plan will protect plover habitat, and thus it is consistent with the standard to avoid significant disruption.

Another question before the Commission is the issue of nesting plovers occurring in the area that will remain open for recreation use. In past years, the plovers have nested on the open portions of these beaches, but in relatively low numbers. Therefore, the use of these open beaches is not likely to significantly affect nesting plovers.

Table 4: Western Snowy Plover Nests by Year on Areas Proposed for Recreational Beach Access.¹³

Location	1994	1995	1996	1997	1998	1999	2000	2001	2002	Range
North Wall 0.25 mile	1	0	0	1	3	1	0	0	2	0-3 (0-2% of all nests)
North Surf 0.5 mile	8	5	2	6	0	3	3	4	12	0-12 (0-4%)
North Minutema 0.5 mile	0	0	0	0	0	0	0	0	0	0 (0%)
TOTAL	9	5	2	7	3	4	3	4	14	2-14
% of All Nests	3%	2%	1%	2%	2%	4%	2%	2%	5%	1-5%

In addition, last year the Air Force used symbolic Exclosures (a chain or rope fence generally around a nest) to protect nests in the open section and, if necessary, will use the technique during the 2003-nesting season. Therefore, the Commission finds that the proposed recreational uses identified in the Air Force's consistency determination will not significantly affect the ESHA.

3. Predator Management. The 2003 beach management program also involves the management of predators, in order to reduce snowy plover nest and chick loss from predation. Because of this purpose, the plan will protect this sensitive habitat, and therefore, is dependent on this resource.

¹² Biological Opinion for Beach management and the Western Snowy Plover on Vandenberg Air Force Base for the 2001 Breeding Season (1-8-01-F-13).

¹³ Biological Assessment for Western Snowy Plover on Vandenberg Air Force Base for the 2003 Breeding Season, October 4, 2002, p.2.

The second requirement of the Coastal Act's ESHA policy is that the proposed activity avoids significant disruption to the sensitive resource. Predator management is necessary to protect this species for the following reasons: 1) the bird nests on the ground in loose colonies and relies mostly on camouflage as its protection from predation; 2) human activities and invasive plants have eliminated much of the plover's nesting habitat, and thus the remaining habitat is much more sensitive to predation; and 3) the plover population has declined in recent years (as discussed above). Because of these concerns, predator management is necessary to protect the plover, reduce future declines in the population, and increase nesting success.

Past monitoring shows that predators are responsible for the loss of as much as 80% of the failed plover nests during a nesting season. The table below puts predation in the context other causes for nest failure.

Table 5: Percent of failed nests attributed to various causes.¹⁴

Year	Predation		Human		Abandoned		Surf or Wind		Other Causes	
	North	South	North	South	North	South	North	South	North	South
1994	51	51	0	1	1	5	7	15	41	28
1995	40	32	0	0	9	2	12	36	39	30
1996	54	38	0	3	4	2	19	36	23	22
1997	65	64	0	0.05	2	3	5	5	28	28
1998	80	73	0	4	6	7	3	7	11	9
1999	14	53	0	8	29	11	43	17	14	11
2000	60	82	0	0	10	3	20	8	10	7
2001	70	57	0	0	0	8	7	22	23	13
2002	54	42	0	0	17	7	13	39	16	12

This table clearly shows that the percentage of failed nests attributed to predators is relatively high and indicates that predator management is necessary. However, predator management must be implemented carefully, because if improperly done it could result in significant ecological effects and possibly adverse impacts to the plover. For example, if the population of the top-level terrestrial predator, the coyote, in this system is significantly reduced through predator management, it could result in increased predation by lower level predators (mesopredators), such as red foxes, raccoons, opossums, and skunks. The mesopredators

¹⁴ Modified from Western Snowy Plovers on Vandenberg Air Force Base, 2000 final Report, Thomas E. Applegate and Sandra J. Schultz, January 2, 2001, p. 22.

may be better at nest predation than the coyotes. In addition, predator/prey relationships are complex and too much interference with this relationship could have unintended ecological and biological effects. The goal of the Air Force's Interim Predator Management Plan is to reduce predation of the plover while minimizing ecological effects from predator management. Specifically, the plan states that:

*Management actions conducted under this Plan will emphasize selective control of individual problem predators, using non-lethal techniques wherever possible in the control of native predators. **VAFB's predator management decisions must also include the assessment of these actions on the larger ecosystem, with the priority being that ecosystem stability and integrity are maintained** (emphasis added).*¹⁵

The primary predators that the interim plan focuses on are crows, ravens, and coyotes. These species account for most of the plover predation on the base. The Air Force proposes to use trash clean up and carrion removal as tools to reduce the presence of these animals on the beach. The Air Force proposes to conduct beach clean up weekly and continue to re-assess the situation to determine if more frequent beach clean up is necessary. Decisions to increase the frequency of the clean-up activities will balance the need to keep the beaches free of human debris with potential impacts to the plovers from conducting the clean-up activities. The Air Force believes that human trash is one of the major attractants bringing predators to the beach. By removing this debris regularly, the Air Force hopes to reduce the number of predators attracted to the beach.

The Air Force's clean-up activities also include removal of carrion from the beach. Crows, ravens, and coyotes are scavengers that rely on carrion as part of their food source and are attracted to dead animals that wash up on the beach. The interim plan provides for removal of carrion when identified by the plover monitors. However, the decision to remove carrion will take into consideration potential impacts on the plover from the removal activities.

a. Crow and Raven Predation. Observations from previous years' (2001 and 2002) nesting season indicate that crows' and ravens' presence on the beach appears to be increasing. During past nesting seasons, the Air Force provided for lethal removal of crows and ravens. In some cases, removal of appropriate corvids has significantly reduced predation. The Air Force also proposes to monitor crow movements to and from beaches in an attempt to identify individuals responsible for predation and their nesting and roosting locations. If feasible, the Air Force will remove non-native trees and artificial structures used by the crows.

These activities have the potential to affect plover habitat by increasing human presence in the habitat. In considering this issue, the Air Force has provided for the following protocols to prevent impacts on the plover:

¹⁵ Interim Predator Management Plan, p. 1.

- In consultation with the plover monitors, the Air Force's Wildlife Biologist will make the determination to trap or kill crows and ravens;
- Authorized personnel will conduct any lethal removal;
- The Air Force's Wildlife Biologist will limit lethal removal to individuals observed to access snowy plover nesting beaches;
- Removal will occur from pre-determined locations to avoid disturbance to plovers; and
- If a particular situation requires entry into nesting habitat to remove crows, it will be carefully coordinated between snowy plover monitors and the Air Force's biologist.

With these measures, it is unlikely that the lethal removal activities will significantly disturb plovers. Therefore, the Commission finds that the lethal removal of crows and ravens will not significantly disturb plover habitat.

b. Coyote Predation. The coyote is another species that is responsible for a significant number of nest losses. They are the top-level predators in this area and, as such, they have a unique role in the ecosystem. This role may be important in managing snowy plover habitat by preventing other animals from preying on plovers and their eggs. Thus, the main effort in the management of coyote predation of snowy plovers is the elimination, or at least the reduction, of food sources that attract coyotes, and other predators, to the beach. To that end, the Air Force proposes to remove trash and carrion regularly. Monitoring results from the 2002-nesting season shows that coyotes are not significantly affecting plover reproduction on Vandenberg, when compared to other nest losses (e.g., other predators, waves, and wind). Last year, coyotes were responsible for destroying 14% of the 296 nests on the base. On average, coyotes were responsible for destroying 16% of nests on Vandenberg over the previous nine years (1994-2002).¹⁶

If necessary, coyote predation will also be managed through lethal removal. This alternative is necessary to prevent individuals from decimating the plover nests. The Air Force considered several alternatives to coyote management, but concluded that these alternatives were more damaging to the plover, were not a feasible or effective tool, or require additional information before they can be implemented. Specifically, the Air Force considered the following alternatives: 1) Nest Exclosures; 2) Invisible Fencing/Electronic Collaring of Coyotes; 3) Exclusion Fencing; 4) Aversion Feeding; 5) Diversion Feeding, and 6) Relocation.

The feasibility and environmental effects of these alternatives was fully discussed in the Commission review of the predator management program for the 2001 nesting season, CD-46-01, which is incorporated by reference. Among the alternative management techniques considered by the Air Force was diversion and aversion feeding. Aversion feeding involves

¹⁶ Biological Assessment for the Snowy Plover on Vandenberg Air Force Base for the 2003 Breeding Season, October 4, 2002, Attachment 3.

the application of a noxious chemical compound to eggs, to train potential predators that the ingestion of such items is undesirable. The problem with this alternative is that the chemicals used to treat the eggs are toxic to plover eggs and represent a potential risk to plovers. Diversion feeding involves placement of a food source at an alternative location to attract coyotes away from the beach. This risk from this technique is that it may lead to increased coyote population and drawing coyotes and other predators to the area.

Although the Air Force will continue to investigate aversion and diversion feeding methods to manage coyote predation, the primary approach that the Interim Predator Management Plan proposes is to minimize trash and carrion and lethal removal. The Air Force is cognizant of potential ecological effects from removal of the top-level predator in this ecosystem. The Air Force is especially concerned about adverse effects from an aggressive coyote removal program. Such a program could result in increased predation from mesopredators, increased coyote reproduction, or immigration of new coyotes into the area. However, the management plan includes the following measures to minimize ecological effects from lethal removal:

1. The Air Force will limit lethal removal to the following categories:
 - Individuals that are difficult to trap; and
 - Individuals that are identified as being directly responsible for predation, and when their removal is expected to result in reduced predation to snowy plover nests.
2. Lethal removal of coyotes will be considered within the following criteria:
 - Selective lethal removal will target individual problem animals;
 - Selective lethal removal will occur only when evidence indicates a nest (or nests) has been predated by an animal, further losses are probable due to observed foraging patterns in the area, and there are other nests at risk of predation in that area; and
 - Lethal removal will cease once predation problem in the area has ceased.

With these measures, the Commission finds that the Air Force's plan for managing coyotes is the least damaging feasible alternative and includes measures to minimize ecological effects from predator management, including selective lethal removal.

c. Raptors and Other Predatory Birds. The Air Force's past monitoring of snowy plovers on Vandenberg has not identified raptors and other predatory birds (other than crows and ravens) to be responsible for a significant amount of predation of plover nests, although there probably have been some chick and nest losses to raptors and shrikes. However, the plan provides for the management of predation by these birds. The Air Force focuses the management of predatory birds to capture and relocate responsible individuals. The Air Force describes its approach to managing predatory birds as follows:

Upon determining that an individual predator poses a threat to snowy plovers on VAFB beaches, an effort will be undertaken to trap, band, and relocate the predator as soon as possible.

- The determination will be made by the VAFB Wildlife Biologist upon consultation with the SCPBRG [Santa Cruz Predatory Bird Research Group] and plover monitors.*
- Knowledge of the avian predator's habits will determine the trapping technique to employ.*
- The decision to remove a predator must take into account the potential disturbance of the removal activity on nesting plovers relative to the potential threat of the predator. Trapping will be conducted in coordination with plover monitors and the VAFB Wildlife Biologist to avoid disturbance to plovers to the maximum extent practicable. As described elsewhere in this Plan, early identification of "plover-safe" trapping locations will minimize response time once a threat has been identified.*
- Trapped birds will be held in a licensed and permitted rehabilitation/holding facility until they can be released back into the wild.*
- Relocated birds will be released in an area with suitable habitat at a distance from which they would not be expected to return. The distance will be determined through consultation with the SCPBRG.*

All avian predator removal actions will be implemented by authorized personnel from SCPBRG..., under the direction of the VAFB Wildlife Biologist.¹⁷

In the past, raptors have not presented a significant threat to plover nesting success and the Air Force has only occasionally found it necessary to capture and relocate raptors. However, in other areas, raptors have resulted in substantial impacts to snowy plover reproductive success and it is necessary for the Air Force to provide the contingency for managing these birds. The plan presented by the Air Force will have minimal impacts on raptors while providing substantial benefits to the plover. Therefore, the raptor management is consistent with ESHA policies of the CCMP.

4. Temporary Shelters. The Air Force proposes to place four temporary shelters on the beach. The Air Force describes these shelters as follows:

We are adding to the project description, placement of a total of four (4) small shelters to provide sun and wind protection to beach patrol personnel. The shelters will provide protection from the elements (sun, rain, cold, wind, and blowing sand) and thus enable

¹⁷ 2001 Interim Predator Management Plan, pp. 11-12

personnel to maintain a more continuous presence on the beach. Shelters would be no larger than 6-ft long by 4-ft wide by 8-ft tall. They would be located at each boundary fence on Surf Beach (2 shelters total), Wall Beach (1) and Minuteman Beach (1). Shelter design will be selected to provide maximum visibility for beach patrol personnel. Shelters will be placed immediately adjacent to closure boundary fences to minimize their visual impact. Exact placement will depend on late winter beach condition and terrain, but will be above the high tide line and within view of the lower beach where violations are most likely to occur. The only site preparation will be minor hand clearing of sand if needed to create level surfaces for the shelters. To the extent possible, shelters will be sited in locations that are naturally relatively level, where minimal site preparation will be needed. The roofs of the shelters will be affixed with Nixalite or other antipercing material to prevent predators from perching on them.

VAFB will acquire prefabricated shelters that will be fully constructed before they are placed on the beaches. Shelters will be temporary, placed prior to March 1, and removed after September 30. Shelters will be moved onto the beaches via existing access trails using a small trailer pulled by a six-wheeled all-terrain vehicle (ATV). If possible, (i.e., Santa Ynez River mouth closed) the Surf Station shelters will be brought in from the Wall Beach access trail, along the wet sand to Surf Beach. ATV speed will not exceed 5 mph on beaches and access trails. The VAFB wildlife biologist or Service-permitted snowy plover biologist will monitor shelter placement, to further ensure that disturbance to snowy plovers is minimized. Placement will be done during the same time frame in mid-late February as other nesting season preparations (sign posting, fence repairs, etc.) and therefore should not significantly increase the level of disturbance to non-nesting western snowy plovers.¹⁸

As described above, the area where the Air Force proposes to place these temporary structures is an ESHA. Section 30240 provides that development within an ESHA must be dependent on the ESHA resources and must avoid significant disruptions to the habitat. The proposed shelters are dependent on the ESHA resources. Their purpose is to provide shelter for enforcement personnel and increase the presence of the enforcement staff in the area. The shelters will allow the enforcement people to have uninterrupted presence on the beach, while providing areas to rest, get shelter from the weather, and store gear. Since the purpose of these enforcement efforts is to assure that public use of the beaches does not adversely affect snowy plover nesting habitat, the enforcement program is dependent on the ESHA resources. Since the proposed shelters will enhance the Air Force's enforcement efforts, the structures are also dependent on the resources.

In addition the proposed shelters will avoid any significant disruptions on the ESHA resources. The Air Force will install the shelters prior to March 1, 2003, the beginning of the nesting season, and will remove the shelters after September 30, 2003, the end of the nesting season. The Air Force's wildlife biologist will monitor placement of the shelters to minimize impacts to nesting habitat and the Air Force will install anti-perching material on the

¹⁸ Amendment to Biological Assessment, November 6, 2002.

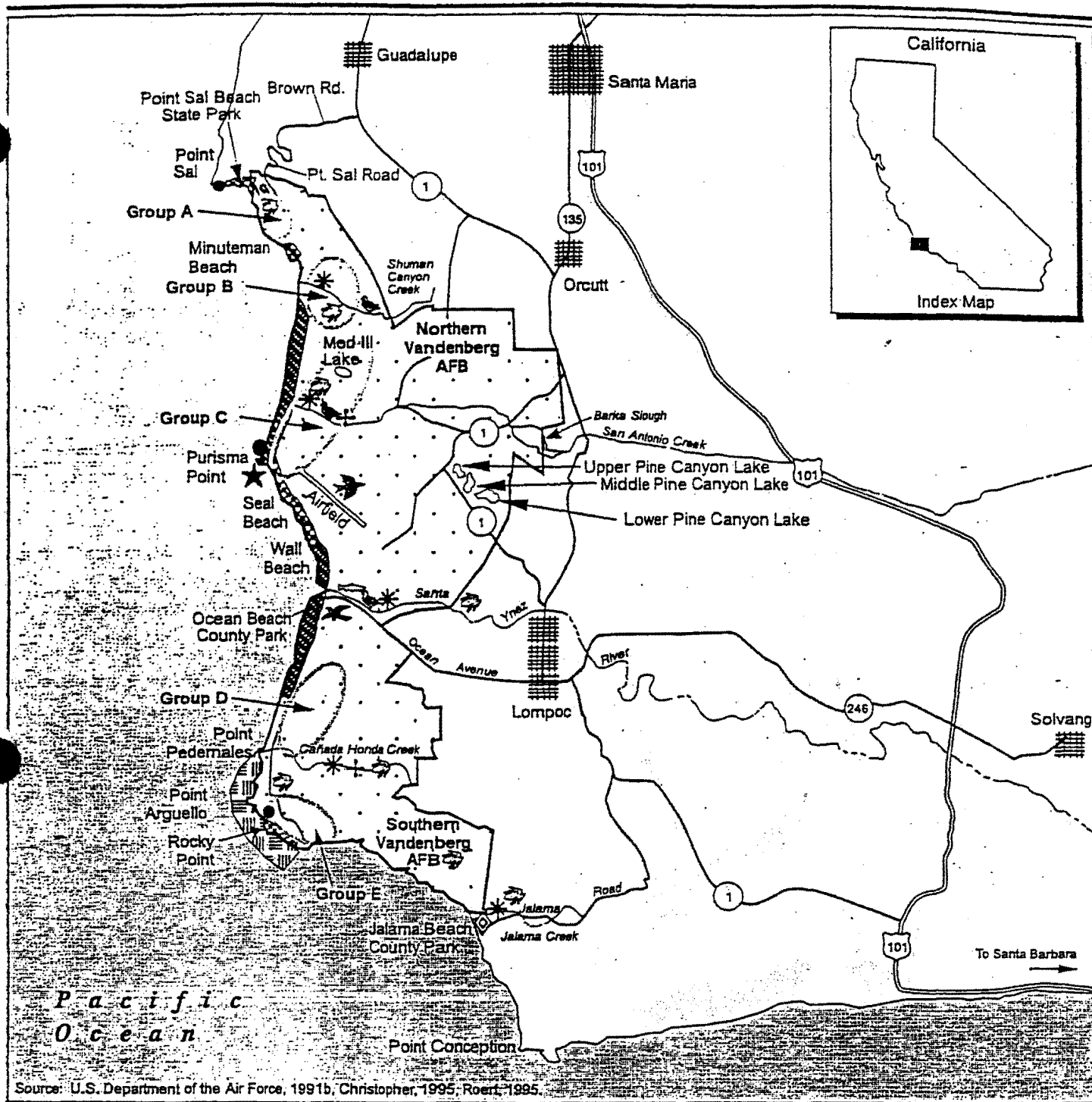
shelters to prevent their use by predatory birds. With these measures, and other measures described in the Air Force's biological assessment, the proposed structures will not significantly disrupt the ESHA habitat, and therefore, the structures are consistent with Section 30240(a) of the Coastal Act.

5. Conclusion. In conclusion, the beaches on Vandenberg support nesting snowy plovers, a federally listed threatened species. In addition, the Service has designated these beaches as "Critical Habitat" for the snowy plover. Therefore, the snowy plover habitat on Vandenberg is an ESHA. The purpose of the 2003 beach management plan is to manage and protect this ESHA and, therefore, the plan is dependent on the sensitive resource of the ESHA. In addition, the management plan will reduce impacts from human activities on the beach and predation of plovers, and therefore, will not significantly disrupt the ESHA. Therefore, the Commission finds that the proposed plan is consistent with the ESHA policy of the CCMP.

VI. Substantive File Documents

1. Consistency Determinations: CD-012-94, CD-067-95, CD-019-00, CD-023-01, CD-046-01, and CD-105-01 (Interim Plover Management plans at Vandenberg Air Force Base).
2. ND-087-99, ND-020-00, ND-019-01, and ND-034-01 (Negative Determinations for modifications to Interim Plover Management plan at Vandenberg Air Force Base).
3. Biological Assessment, 2003 Interim Plover Management Plan, Vandenberg Air Force Base.
4. Designation of Critical Habitat for Pacific Coast Population of the Western snowy Plover; Federal Register Vol. 64, No 234, page 68508 et seq., December 7, 1999.
5. 1993 Western Snowy Plover Monitoring, Vandenberg Air Force Base, February 2, 1994.
6. Final Rule for Determination of Threatened Status for the Pacific Coast Population of the Western snowy Plover; Federal Register Vol. 58, No 42, page 12864; March 5, 1993.
7. Page, Gary W., et al., Distribution and Abundance of the Snowy Plover on its Western North American Breeding Grounds; Journal of Field Ornithology, 62(2): 245 - 255.
8. Draft Environmental Assessment, Modification of Public Access Routes at Ocean Beach Vandenberg Air Force Base, California, February 22, 1994.
9. Draft Environmental Assessment, Modification of Public Access Routes at Ocean Beach Vandenberg Air Force Base, California, March 1995.
10. U.S. Fish and Wildlife Service, Biological Opinion on the proposal to modify recreational beach access, Ocean Beach, Vandenberg Air Force Base, February 3, 1995.

11. Preliminary Findings, Snowy Plover Reproductive Success on Ocean Beach, Vandenberg Air Force Base, California, U.S. Air Force, prepared for the California Coastal Commission, July 1998.
12. Draft Environmental Assessment, Beach Management and the Western Snowy Plover at Vandenberg Air Force Base, October 30, 2000.
13. Western Snowy Plovers on Vandenberg Air Force Base, 2000 Final Report, January 2, 2001.
14. Biological Opinion for Beach Management and Western Snowy Plover at Vandenberg Air Force Base for the 2001 Breeding Season (1-8-01-F-13), March 9, 2001.
15. Draft Biological Opinion for the 2002 Interim Beach Management Program for Vandenberg Air Force Base, Santa Barbara County, U.S. Fish and Wild Life Service, November 26, 2001.



EXPLANATION

- | | | |
|--|---|---|
| Nesting Location of California Least Tern/ Western Snowy Plover | Tidewater Goby | California Least Tern (CLT) Foraging Areas |
| Haulout Location of California Sea Lion, Northern Elephant Seal, and Pacific Harbor Seal | Unarmored Threespined Stickleback | California Red-legged Frog (Wide Distribution Also Includes Ponds and Vernal Pools) |
| Marine Ecological Reserve | Roosting Location of California Brown Pelican | Steelhead Trout |
| | Southern Sea Otters | Mountain Plover (Winters Only) |
| | Launch Site Areas | Southwestern Willow Flycatcher |
| | | Snowy Plover (Winters Only) |

Sensitive Habitat for Listed Faunal Species on Vandenberg AFB

Western Range
Candidate Test Area

EXHIBIT NO. 1

APPLICATION NO. CD-089-02

California Coastal Commission

Handwritten: Air Force

Attachment 4 – 2003 Recreational Beach Access – Map 1 of 3

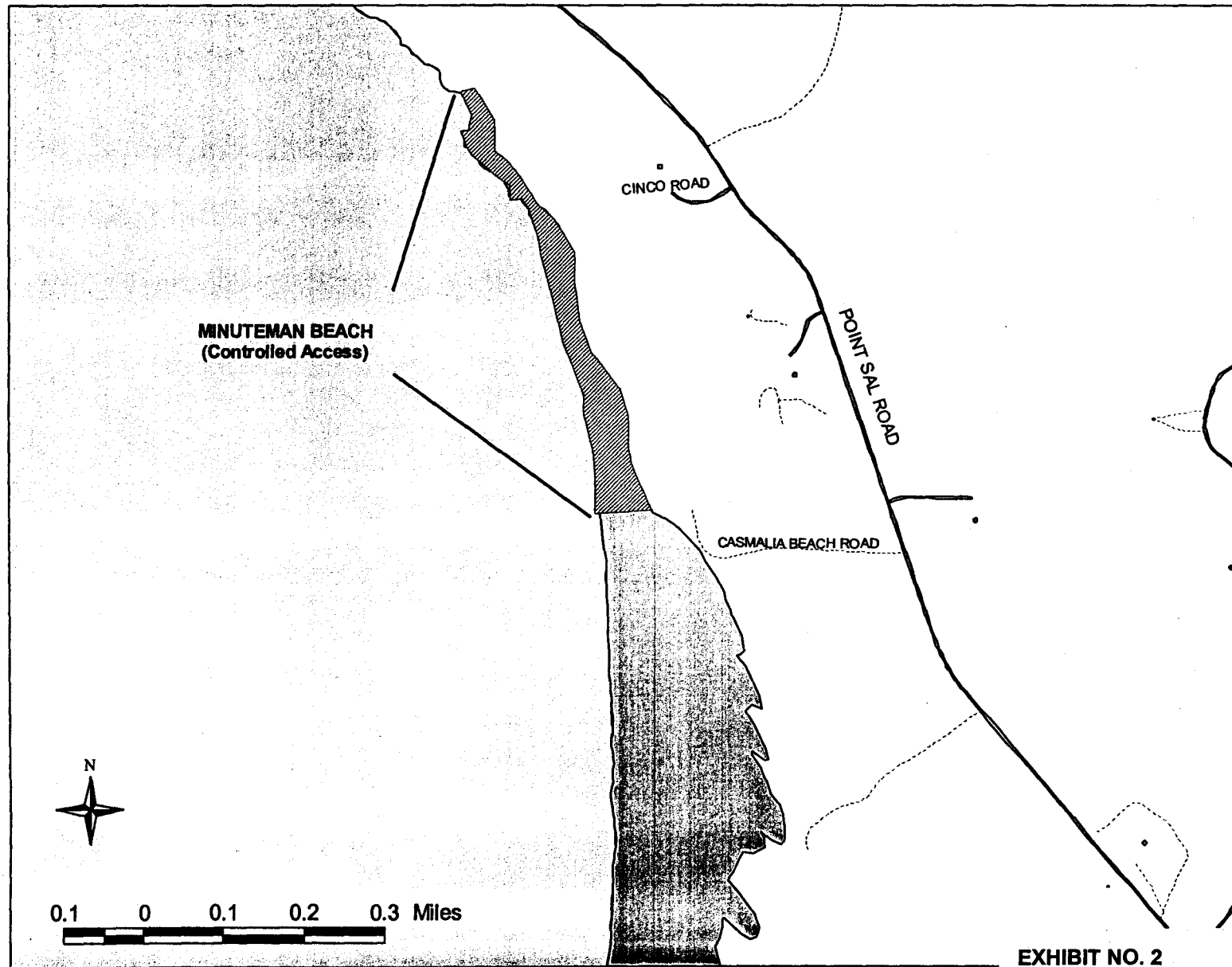


EXHIBIT NO. 2

APPLICATION NO. CD-089-02

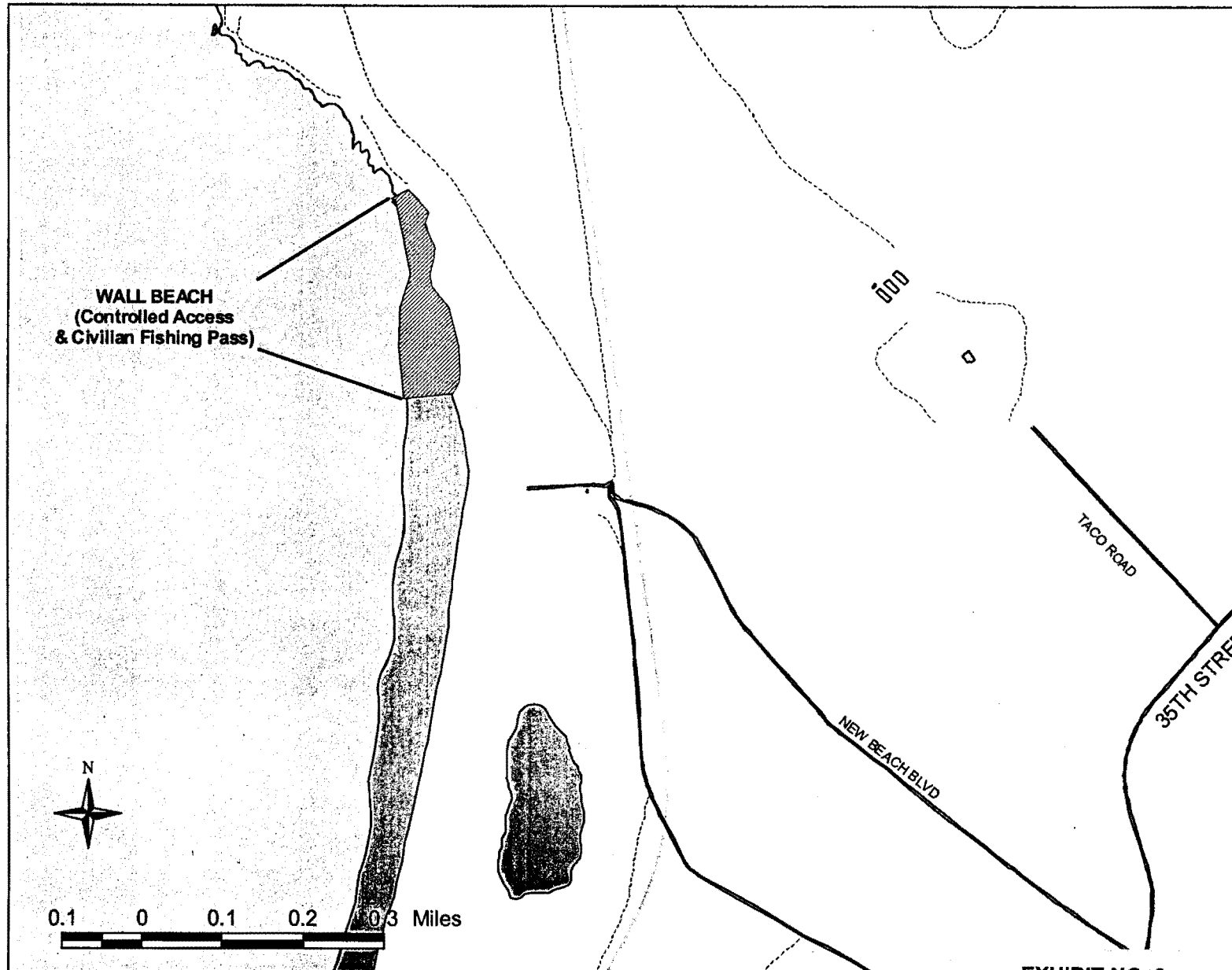


EXHIBIT NO. 3

APPLICATION NO. CD-089-02

Attachment 4 – 2003 Recreational Beach Access – Map 3 of 3

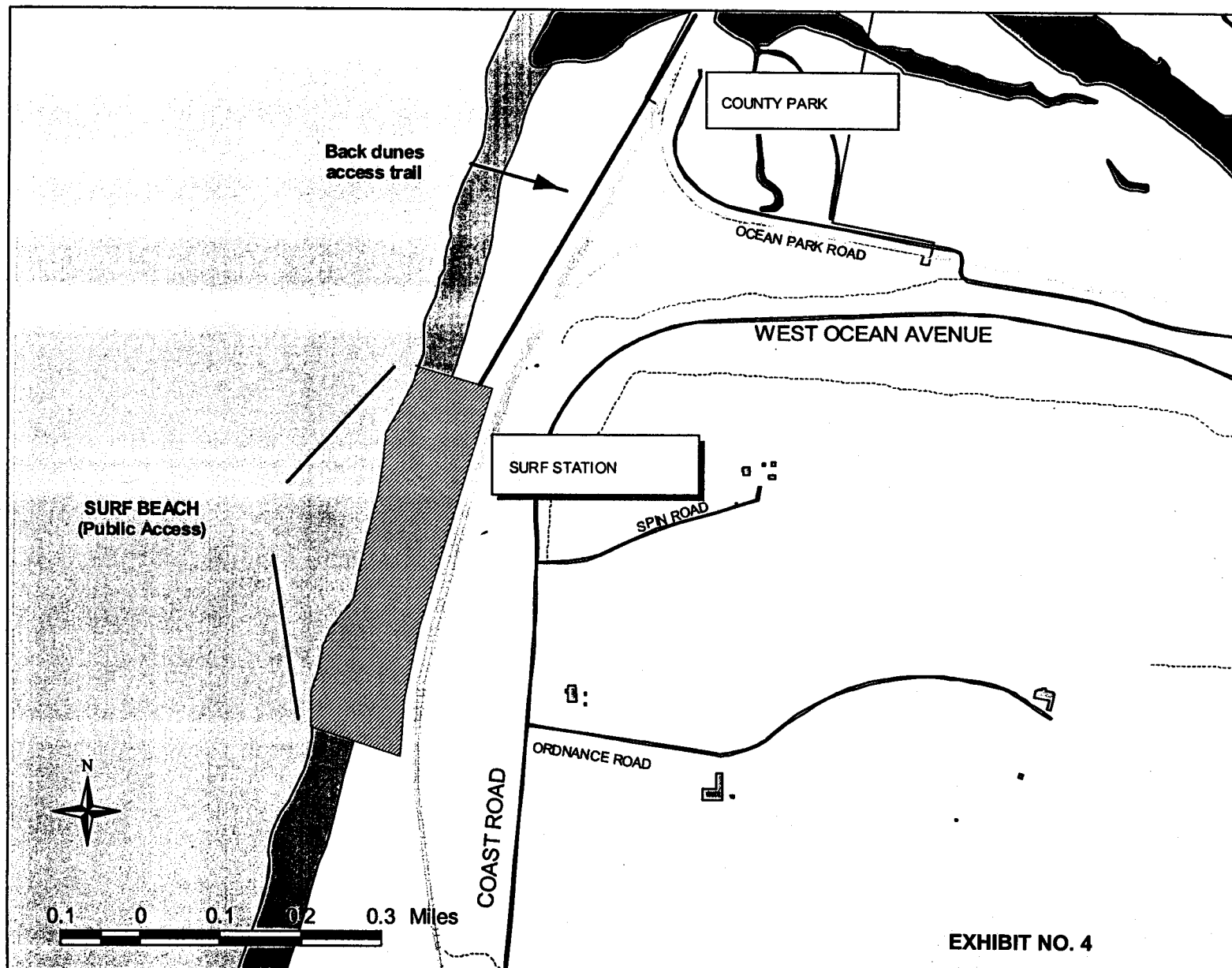


EXHIBIT NO. 4
APPLICATION NO. CD-089-02