STATE OF CALIFORNIA – THE RESOURCES AGENCY GRAY DAVIS, *Governor*

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STAFF RECOMMENDATION

ON CONSISTENCY DETERMINATION

Consistency Determination No.	**CD-105-01**
Staff:	JRR-SF
File Date	12/05/2001
60th Day	02/03/2002
75th Day	02/18/2002
Commission Meeting	01/07/2002

FEDERAL AGENCY: **U.S. Air Force**

PROJECT LOCATION: Minuteman, Wall, Surf, and Ocean Beaches, Vandenberg Air Force Base, Santa Barbara County (Exhibit 1).

PROJECT DESCRIPTION: Interim beach management plan, including restrictions on beach access, predator management and enforcement plan (Exhibits 2, 3, and 4) to protect nesting habitat for the western snowy plover.

SUBSTANTIVE FILE DOCUMENTS: See page 21.

EXECUTIVE SUMMARY

The Air Force submitted a consistency determination for an interim beach management plan for the 2002 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. This plan includes a re-implementation of previous beach closures, which began in July 1999. The Air Force's consistency determination requests concurrence with its interim beach management plan for the 2002-nesting season. 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.

The Air Force has been working with the Service and the Commission staff for a number of years on the conflict caused by the plover habitat protection measures and recreational use of the beach. Both needs are critical along this stretch of coastline. 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. Between Pt. Sal and Gaviota, a 64-mile stretch of coast, there are only two publicly accessible beaches.

In reviewing similar restrictions in the past, the Commission has found these restrictions to be consistent with the public access and recreation (Sections 30210-30214) and the habitat (Section 30240) policies of the Coastal Act. Past monitoring data indicated that the snowy plover population had generally declined over the past few years and is the basis for the Air Force's determination that it is necessary to implement measures that are more protective. Monitoring data supports the conclusion that the plover is adversely affected by recreational activities on the beach.

Generally, the proposed beach management plan is similar to that which was approved by the Commission for the 2001 plover-nesting season. The Air Force has modified the plan to improve communications between monitors and enforcement personnel and reduce the amount of lethal removal of crows and ravens. These measures are likely to enhance the protection of the plovers. The Air Force's consistency determination provides for the option of closing all the beaches to recreation use through the remainder of the nesting season. The option for full closure is necessary to allow the Air Force to meet its enforcement commitments. The closure, including the option for total closure, is a necessary component of the Air Force's habitat management, and therefore, it is consistent with access policies of the Coastal Act (Sections 30210, 30213, and 30214), which allow habitat protection to be a basis for limits on access and recreation opportunities. Therefore, the total closure of the affected Vandenberg beaches is consistent with the access policies of the CCMP.

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 purpose of these access restrictions are to provide better management of the sensitive resource and, as such, is an activity that is dependent on the sensitive habitat resources. The plan allows the Air Force to minimize human disturbances to plover nests by restricting 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 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. Periodic night patrols will also be conducted. 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 practicable. 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 snowy plover nesting beaches if adequate enforcement staff is not hired or if the number of identified violations exceed the following:

- 25 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.

All other beach areas on Vandenberg supporting nesting snowy plovers would be closed from March 1 through September 30, 2002. 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, and raptors. The Air Force proposes to implement beach clean up and carrion removal to eliminate debris that attracts these predators to the beach. The Plan also includes both lethal and non-lethal removal of predators from the snowy plover nesting habitat. In addition, the plan includes the following protocols to minimize the ecological effects from the lethal removal of predators:

1. No lethal removal of species that are listed by federal or state agencies as Threatened or Endangered (e.g. peregrine falcon).

2. For non-listed species, the Air Force will consider lethal removal of species that fall within the following categories:

    - Species that are known to be extremely difficult to trap;

    - Species for which non-lethal management techniques are determined to be infeasible or not available; and

    - Individual animals that are identified as being directly responsible for predation, when their removal is expected to result in reduced predation to snowy plover nests.

3. Lethal removal of top-level predators (i.e., coyote, raptors) will be considered within the following criteria:

    - There will not be any lethal action taken against a Coyote alpha pair.

    - Selective lethal removal will target individual problem animals, after failure to live-trap the animal (if applicable to the species in question), and after consultation with professionals.

    - Selective lethal removal will occur only if there is evidence of nest predation, there is evidence to indicate that further losses are probable due to observed foraging patterns in the area where the loss occurred, and there are other nests at risk of predation in that area.

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

- The lethal removal of coyotes will consist of trapping and euthanizing the offending animal.

4. The Air Force will not take lethal actions against any raptor species.

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 the Commission certified the LCP and incorporated it into the California Coastal Management Program (CCMP), 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-105-01 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 agrees 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. Regulatory Background. 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.

During the 1993 nesting season, the U.S. Fish and Wildlife Service reported to the Air Force that normal public activity on Vandenberg resulted in both direct mortality to snowy plover eggs and harassment of adults and chicks. Overall, observed fledging success was far lower at Ocean Beach, which is open to the public, than at other Vandenberg beaches that are not open to the public.

Last year, the Air Force in coordination with the Service, increased the area of beaches closed to the public and improved its enforcement of these restrictions. In addition, the Air Force increased its efforts to manage predators. The Air Force was unable to hire adequate enforcement staff and the beaches remained closed for longer than anticipated. The Air Force first opened the beaches for the Memorial Day weekend, and, because of inadequate numbers of enforcement staff, the beaches were opened just for weekends for the remainder of the season. Although the Air Force has not completed the monitoring report for last year, discussions with Air Force biologists indicate that nesting success was better last year than the last few years.

B. 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:*
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> ...
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> *(2) The capacity of the site to sustain use and at what level of intensity.*
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> *(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 restricting 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.

Three large landowners, the Air Force, Bixby Ranch, and Hollister Ranch, own most of the coast in this area. The Commission has a long and extensive history of concern over the limitations on public access to this area of the coast, including numerous attempts to implement the public access provisions of the Coastal Act at Hollister and Bixby Ranches through the permit and LCP processes. Although the Santa Barbara County LCP contains public access requirements that would be triggered by development at Bixby Ranch, that 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 providing 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 pubic 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 make a difficult choice between protecting snowy plover habitat that the Service has identified as critical to the survival and recovery of the species and 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, the monitoring reports for snowy plovers on Vandenberg have documented, since 1996 (when regular monitoring of fledging success began), that increased restrictions to recreational use corresponds with increases in fledging success.

Table 1: Chick fledging rate by beach segment on Vandenberg, 1997 to 2000.[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[6]	48%	--	45%	47%

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. However, the sample size for this data is too small to draw any conclusions about the relationship between recreational use of the beach and fledging success.

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

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[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).
[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 data is from an Email sent by Nancy Read Francine, Air Force Wildlife Biologists, 12/14/01.

Table 2 Percent hatch rate of known fate nests by beach segment on Vandenberg, 1994-2000[7]

Year	North Beaches	Purisima Beach	South Beaches	Base-wide
1994	28	75	28	31
1995	46	100	31	43
1996	57	93	48	55
1997	22	93	11	19
1998	42	50	29	37
1999	81	78	38	57
2000	47	0	28	32
2001[8]	51	83	52	52

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, recent data (within the last three years) collected during a time with restrictions that are more extensive on beach use, the hatching success seems to be increasing. However, the Commission hesitates to make any conclusions at this point. With only seven years of monitoring, there are not enough data to make any statistically reliable conclusions.

Although most of the data for the last seven years are not conclusive, one factor remains clear: the population of snowy plovers is declining. The Pacific Coast population of the western snowy plover has declined over the last few years and continues to decline. The range-wide population of adult plovers has decreased by

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[7] Western Snowy Plovers on Vandenberg Air Force Base, 2000 final Report, Thomas E. Applegate and Sandra J. Schultz, January 2, 2001, p. 21.
[8] 2001 data is from an Email sent by Nancy Read Francine, Air Force Wildlife Biologists, 12/14/01.

29% from (1371 to 976).[9] The population decline on Vandenberg has been slightly more dramatic than the range-wide declines. The Vandenberg population has declined from 242 adult birds in 1991 to 106 adult birds in 2000,[10] a 56% decline. Recent monitoring data at Vandenberg documents this decline and also shows a decline in total number of nests and nests that resulted in hatched birds. In addition, these data appears to show an increase in plovers and nests since implementing more restrictive access provisions.

Table 3. Western snowy plover population size and number of nests at Vandenberg. [11]

Year	Mean 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	135	182	96

The declines in adult plovers, nests, and hatching that these data document makes it clear that the additional protections are necessary. The Service, Air Force, and Commission are concerned that this decline may continue unless something is done to protect the birds' nesting habitat. There are not enough data to determine the cause or causes of this decline. It is likely that a combination of El Niño weather events, predation, recreational use of the beach, and other human activities cause the decline. The range-wide and base-wide declines are significant enough to warrant appropriate action by the Service. At Vandenberg, the Service and the Air Force have agreed to restrict recreational use of the beach, increase predator controls, and implement habitat improvements. The general approach is to err on

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[9] 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..

[10] Ibid.

[11] Biological Opinion for Beach management and the Western Snowy Plover on Vandenberg Air Force Base for the 2002 Breeding Season (1-8-02-FxxR), p. 7.

the side of caution. In other words, it is imperative that the Air Force takes every feasible measure to protect the species, even if there is not enough data to document the primary cause or causes of the decline. Therefore, the Commission generally supports the proposed beach closures as a cautious measure necessary to protect the plover.

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 Surf Station and at Ocean Beach Park and one additional person patrolling Wall and Minuteman Beaches. The plan also provides for nighttime patrols occurring at least twice a week. Finally, the plan provides for closing the open portions of the beach is if the number of violations exceed any of the following: 1) 25 violations at Surf Beach; 2) 10 violations at Wall Beach; 3) 5 violations at Minuteman Beach.

The proposed level of enforcement is consistent with last year's program, which was a significant increase over previous years. Since Vandenberg's beaches were closed for most of the nesting season, if is difficult to determine if the plan provides for an adequate level of enforcement. However, the snowy plover habitat will be protected by the Air Force's commitment to keep the beaches closed use until it hires adequate enforcement staff and the plans provision for additional beach closures based on the number of violations. 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 2002-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.

C. <u>Environmentally Sensitive Habitat</u>. 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 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). ....*
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> ***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.*[12] (Emphasis Added)

Within the Vandenberg, Surf beach provides some of the most important nesting habitat for the plover. The snowy plover nests along the entire length (approximately 4 miles) of Surf Beach. In a 1995 environmental assessment, the Air Force described the status of the bird at Surf Beach (which is sometimes referred to as Ocean Beach, named after the County Park adjacent to the Santa Ynez River estuary) as follows:

> *Vandenberg Air Force Base supports approximately 200 breeding snowy plovers (USFWS 1994). In 1993, 82 of these nested on Ocean Beach. The remainder is on beaches on the northern portion of the base which are*

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[12] U.S. Fish and Wildlife Service Biological Opinion, *March 9, 2001*

> *restricted to base personnel. .... The Ocean Beach population represents 6 percent of the entire California population of the threatened coastal population of the western snowy plover.*[13]

For example, in the report for the 2000 nesting season, there were 71 nests identified on Surf Beach,[14] which represented approximately 50% of the nests on the base (Surf Beach provides approximately 33% of the nesting habitat on Vandenberg). In addition, approximately 50 chicks hatched on Surf Beach,[15] which represents over 60% of the chicks hatched on the base. In other words, 1/3 of the nesting habitat on the base provided for over half the nests and hatchlings during the 2000 nesting season.

Clearly, Surf Beach is an important component of the nesting habitat on Vandenberg, which is one of the most important breeding and nesting habitats on the Pacific Coast. 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. <u>Access Restrictions</u>.

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. As described in the access section above, the Pacific Coast population of the western snowy plover has declined over the last few years and continues to decline. In response to this significantly declining population on Vandenberg, the Air Force, in coordination with the Service, proposes to continue with significant restrictions to public access, which is the primary measure to protect the plover. In its biological opinion, the Service discusses 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*

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[13] Draft Environmental Assessment, Modification of Public Access Routes at Ocean Beach Vandenberg Air Force Base, California, March 1995.
[14] Western Snowy Plovers on Vandenberg Air Force Base, 2000 Final Report, January 2, 2001.
[15] Ibid.

> *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 1999 and 2000 show almost identical trends (Page, pers. comm.).*[16]

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.

However, opponents to the beach restrictions argue that recreational use is not the primary cause of the decline in the plover population, but rather that predation is the main problem. Regardless of who is responsible for population declines, the beach recreation restrictions provide protection for the plover from a documented impact. Since the population has significantly declined in recent years, it is clear that the Air Force should adopt all measures to protect the bird.

Another question before the Commission is the issue of nesting plovers occurring in the area to be opened for recreation use. In past years, the plovers have nested on the open portions of these beaches, but in relatively low numbers.

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[16] Ibid.

Table 5. Western Snowy Plover Nests by Year on Areas Proposed for Recreational Beach [17]

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

The total closure of all of Vandenberg's beaches including the areas proposed to be opened may remove a deterrent that, in past years, discouraged nesting in the opened areas. However, in light of the limited beach access opportunities in Northern Santa Barbara, allowing public uses in areas where nesting activity in the past has been low and closing most of the plover nesting habitat to recreational uses is a reasonable solution that avoids significant disruptions while providing some access opportunities. 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 2002 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.

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, which can result in significant nest losses; 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.

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[17] 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.18 (no data for 2001).

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 put predation in the context other causes for nest failure.

Table 1, Percent of failed nests on north or south beaches attributed to various causes.[18]

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

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 increase predation by lower level predators (mesopredators), such as red foxes, raccoons, opossums, and skunks. The mesopredators may be better at nest predation then 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

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[18] 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.
[19] 2001 data based on Email from Nancy Read Francine, Air Force Wildlife Biologist, 12/14/01.

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).[20]

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 one of the 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. Carcasses of fish, marine mammals, and birds wash up on these beaches regularly. Crows, ravens, and coyotes are scavengers that rely on carrion as part of their food source. The Air Force believes that the dead animals that wash up on its beaches also attract predators. 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. <u>Crow and Raven Predation</u>. Observations from this years (2001) nesting season, crows and ravens presence on the beach appears to be increasing. For the first time this since plover monitoring on the base began, biologists identified common ravens on the beach, and these birds were responsible for two nest losses. In addition, American crows were much more prevalent on the beaches in 2001. Removal of crows on the beach did not eliminate nest predation by crows, as has happened in previous years.

During the 2001-nesting season, the plan provided for lethal removal of crows and ravens. In response to the changes in corvid (crows and ravens) predation, the Air

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[20] Interim Predator Management Plan, p. 1.

Force has made some modifications to its plans for management of these birds. Specifically, the Air Force proposes to use "cage traps" to trap and remove (euthanize) corvids. The Air Force expects that this method would enhance its efforts to remove problem birds. The Air Force may begin this trapping before the plover nesting season begins. The Air Forces believes that shooting of corvids may still be necessary in some circumstances and the predator management plan continues to allow for that option. Finally, the Air Force proposed to monitor crow movements to and from beaches in an attempt to identify their nesting and roosting locations. If feasible, the Air Force will remove non-native trees and artificial structures utilized 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:

- 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 from USDA-Wildlife Services will conduct any lethal removal;
- The Air Force's Wildlife Biologist will direct USDA-Wildlife Services to limit lethal removal to individuals observed to access snowy plover nesting beaches;
- Removal will take place from pre-determined locations to avoid disturbance to nesting snowy plovers; and
- If a particular situation requires USDA-Wildlife Services to enter nesting habitat to remove crows, this action will be carefully coordinated between snowy plover monitors, USDA-Wildlife Services, 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. Coyotes are 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 2001-nesting season shows a significant reduction in coyote predation. There were 10

nests lost to coyotes in 2001, which significantly lower than in previous years. On average there were 37 nests lost due to coyotes previous five years (1996-2000).[21] These reductions may be the result of decreased recreational activities on the beach and beach clean up activities. However, the reductions may be, at least in part, due to increases in alternate prey such as rabbits.

If necessary, coyote predation will also be managed through lethal removal. This management 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 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. The Air Force believed that both of these alternatives have potential and is continuing its research into these techniques.

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:

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[21] Draft Biological Opinion for Beach Management and the Snowy Plover on Vandenberg Air Force Base for the 2002 Breeding Season, November 26, 2001, p. 9 (Exhibit 5).

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 it is confirmed that the identified predation problem in the area has ceased.

Finally, the Air Force has incorporated additional modifications of these protocols, which are as follows:

- There will not be any lethal action taken against a Coyote alpha pair.

- The lethal removal of coyotes will consist of trapping and euthanizing the offending animal.

- The Air Force will identify the coyote responsible for plover predation before implementing lethal removal;

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

c. <u>Raptors and Other Predatory Birds</u>. Raptors are another class of predators that are considered in the management plan. 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 has been some chick and nest losses to raptors and shrikes. However, the management plan provides for the management of predation by these birds. The Air Force has limited 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 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 or USDA-Wildlife Services, under the direction of the VAFB Wildlife Biologist.[22]

During the previous nesting season, the Air Force's management of predatory birds was limited to the captured and relocated one pair of owls. During its review of the 2001 predator management plan, the Commission raised concerns about lethal removal of raptors. In response to those concerns, the Air Force modified its project to eliminate the provision for lethal removal of raptors from its interim predator management plan. This modification is also incorporated into the management plan for the 2002 season.

d. Conclusion. In conclusion, the sandy beaches on Vandenberg support nesting snowy plovers, a federally listed threatened species. In addition, the

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[22] 2001 Interim Predator Management Plan, pp. 11-12

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 2002 beach management plan is to manage and protect this ESHA and, therefore, 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 Determination No. CD-67-95 (Air Force, Public access restrictions for snowy plover); Consistency Determination No. CD-19-00 (Air Force, Public access restrictions for snowy plover); Negative Determination No. ND-87-99 (Air Force, after-the-fact emergency beach closure to protect snowy plover; Negative Determination No. ND-20-00 (Air Force, "immediate" (i.e., March 1-March 15, 2000 beach closure); Negative Determination No. ND-19-01 (Air Force, Immediate closure of all sandy beaches between March 1, 2001 and April 13, 2001).

2. 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.

3. Final Report - Western Snowy Plover Monitoring in 1993 at Vandenberg Air Force Base, February 2, 1994.

4. 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.

5. 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.

6. Consistency Determinations: CD-21-82 (Air Force, Space Shuttle Facility), CD-5-89 (Air Force, Titan IV at SLC-7), CD-28-90, (Air Force, Titan IV at SLC-6), CD-65-90 (Air Force, Acquisition of development rights on Bixby Ranch), and CD-12-94 Air Force experimental seasonal beach closure, Ocean Beach).

7. Draft Environmental Assessment, Modification of Public Access Routes at Ocean Beach Vandenberg Air Force Base, California, February 22, 1994.

8. Draft Environmental Assessment, Modification of Public Access Routes at Ocean Beach Vandenberg Air Force Base, California, March 1995.

9. 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.

10. 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.

11. Draft Environmental Assessment, Beach Management and the Western Snowy Plover at Vandenberg Air Force Base, October 30, 2000.

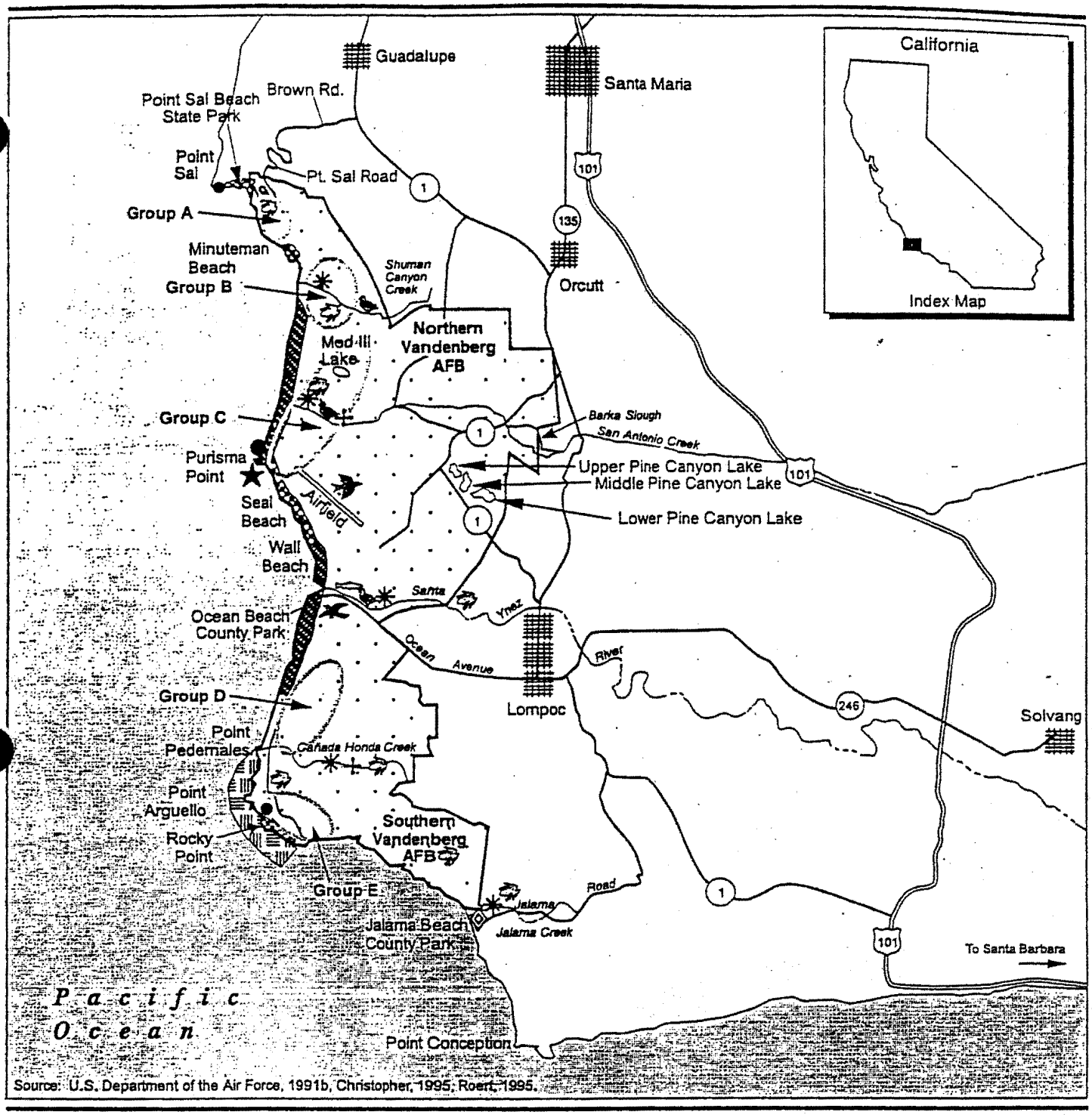
12. Western Snowy Plovers on Vandenberg Air Force Base, 2000 Final Report, January 2, 2001.

13. Biological Opinion for Beach Management and the Western Snowy Plover at Vandenberg Air Force Base for the 2001 Breeding Season (1-8-01-F-13), March 9, 2001.

14. CD-023-01, 2001 Interim Beach Management Program, Vandenberg Air Forces Base, Santa Barbara County.

15. CD-046-01, 2001 Interim Predator Management Program, Vandenberg Air Force Base, Santa Barbara County.

16. 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
- Haulout Location of California Sea Lion, Northern Elephant Seal, and Pacific Harbor Seal
- Marine Ecological Reserve
- Tidewater Goby
- Unarmored Threespined Stickleback
- Roosting Location of California Brown Pelican
- Southern Sea Otters
- Launch Site Areas
- California Least Tern (CLT) Foraging Areas
- California Red-legged Frog (Wide Distribution Also Includes Ponds and Vernal Pools
- Steelhead Trout
- Mountain Plover (Winters Only)
- Southwestern Willow Flycatcher
- Snowy Plover (Winters Only)

0 4.6 9.2 Kilometers

0 2.85 5.7 Miles

Cdrf030lance

Preliminary Final TBM Targets EA

Sensitive Habitat for Listed Faunal Species on Vandenberg AFB

Western Range
Candidate Test Area

EXHIBIT NO. 1

APPLICATION NO. CD-105-01

California Coastal Commission

Air Force

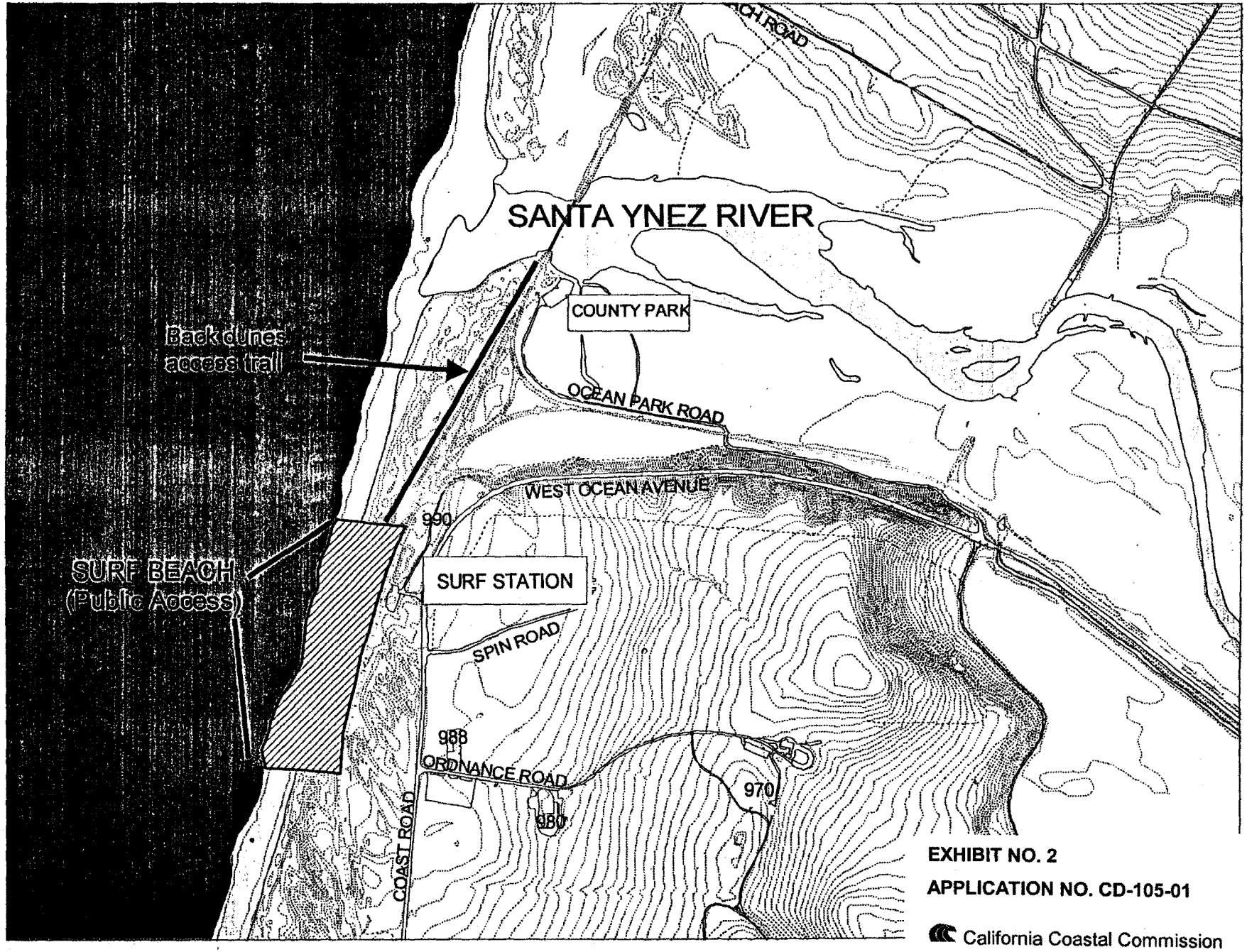


EXHIBIT NO. 2

APPLICATION NO. CD-105-01

California Coastal Commission

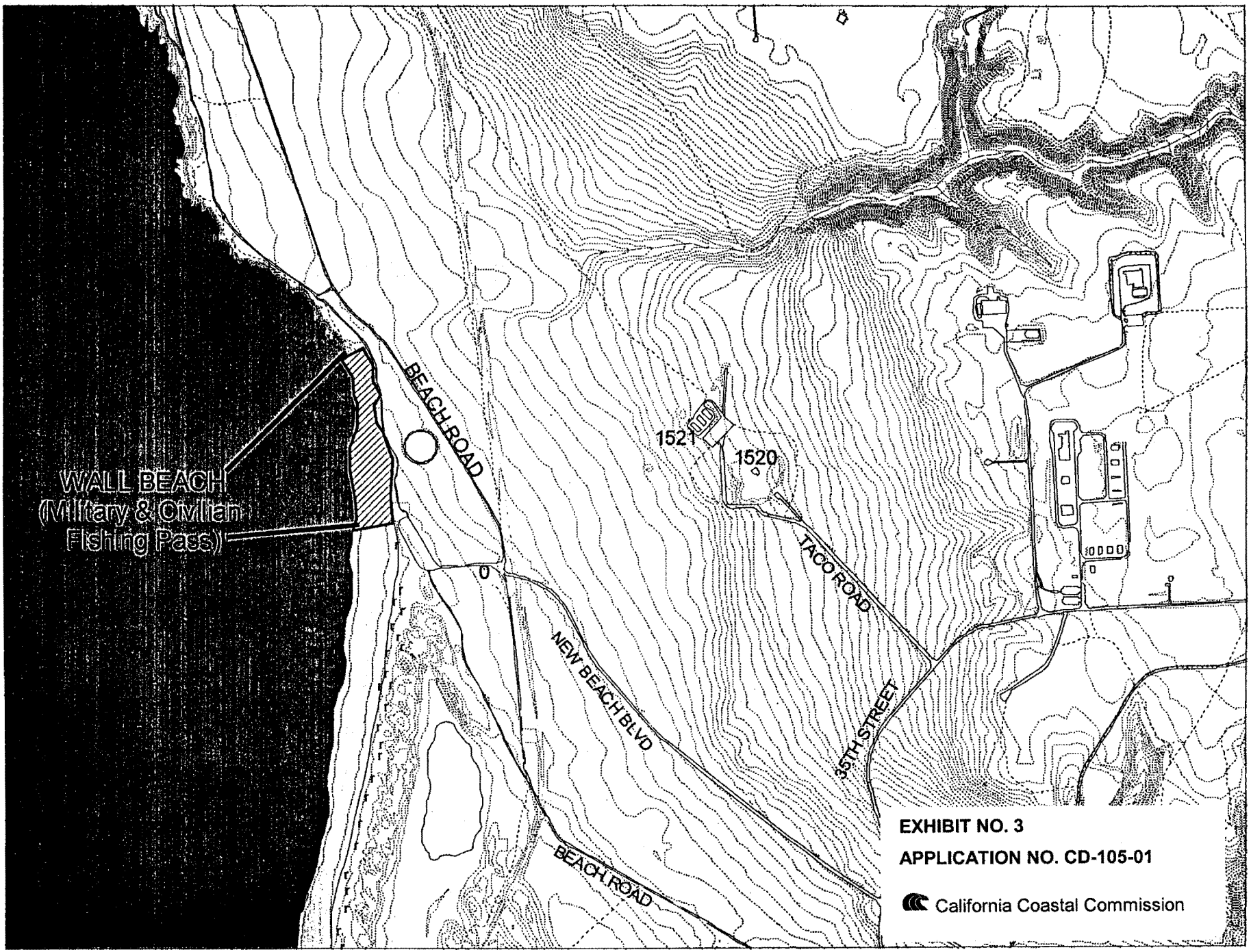


EXHIBIT NO. 3

APPLICATION NO. CD-105-01

California Coastal Commission

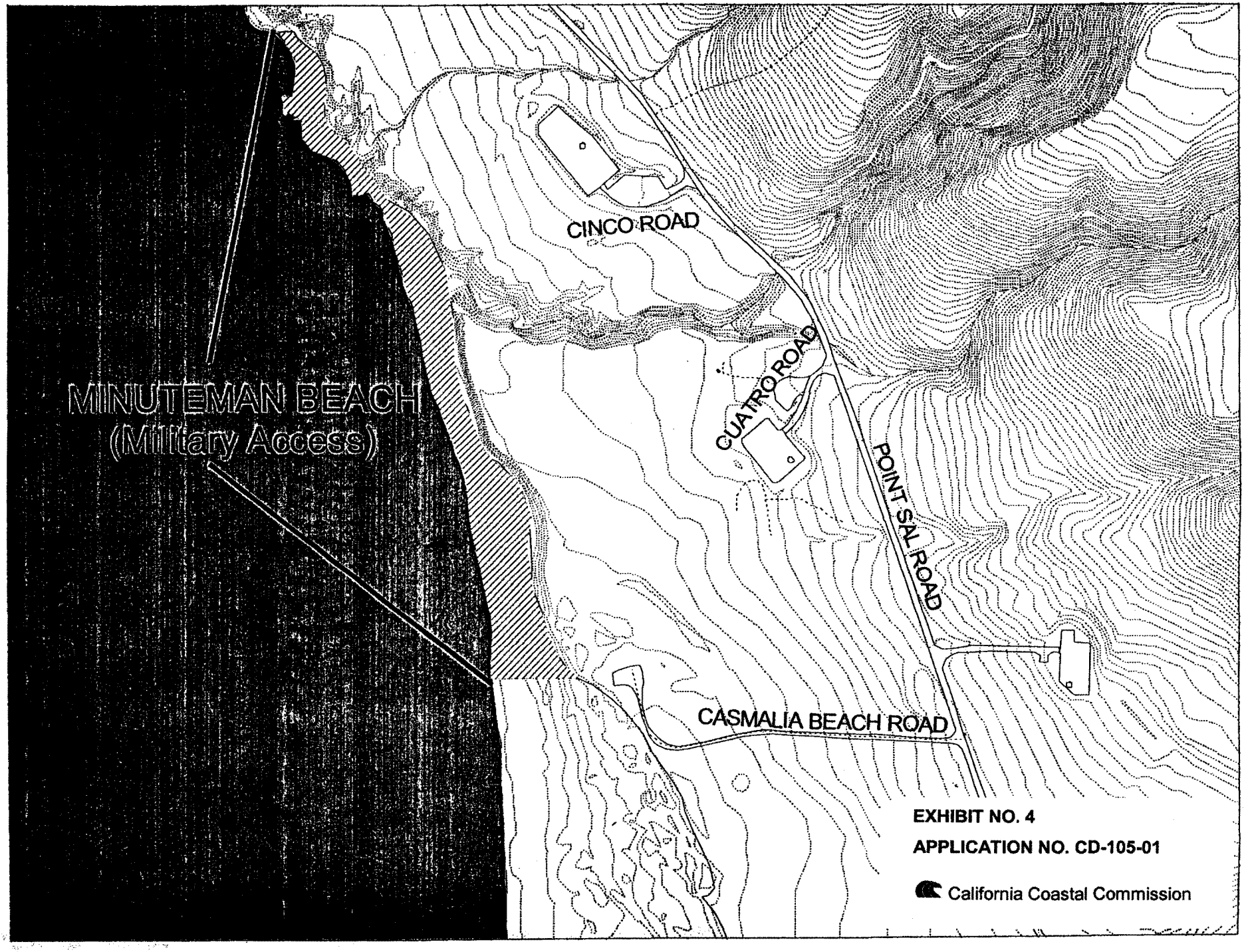


EXHIBIT NO. 4

APPLICATION NO. CD-105-01

California Coastal Commission

DRAFT

November 26, 2001

Lieutenant Colonel Scott W. Westfall
Commander, Environmental Flight
30 CES/CEV
80613th Street, Suite 116
Vandenberg Air Force Base, California 93437-5242

Subject: Biological Opinion for Beach Management and the Western Snowy Plover on Vandenberg Air Force Base for the 2002 Breeding Season (1-8-02-F-xxR)

Dear Colonel Westfall:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion on the effects of the Air Force's proposed beach management plan on the federally threatened western snowy plover (*Charadrius alexandrinus nivosus*) and its critical habitat in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (Act) (16 U.S.C. 1531 et seq.). This biological opinion is in response to your letter dated October 4, 2001, and received by us on October 9, requesting formal consultation.

This biological opinion is based on information contained in your request for formal consultation, our biological opinion (1-8-01-F-13) issued to you on March 9, 2001, informal consultation between our staffs, and our files. A complete administrative record for this consultation is on file at the Ventura Fish and Wildlife Office.

CONSULTATION HISTORY

The Service issued biological opinion 1-8-01-F-13 to the Air Force for its beach management plan and its effects on the western snowy plover on March 9, 2001. That biological opinion evaluated the same management plan being considered in this consultation. A full consultation history is described in that biological opinion.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

Vandenberg AFB is located on the south-central coast of California, approximately half way between San Diego and San Francisco. The base covers approximately 98,000 acres in western Santa Barbara County. The Air Force's primary missions at Vandenberg AFB are to launch and

track satellites in space, to test and evaluate America's intercontinental ballistic missile systems, and to support aircraft operations in the western range. In addition, as a non-military facet of operations, the Air Force is committed to promoting commercial space launch ventures.

The western snowy plover nests from March to September on approximately 12.5 miles of Vandenberg AFB's coastal sand beaches and adjacent dunes (Figure 1).

The Air Force's proposed action would allow unrestricted recreational beach access to 1.25 miles of western snowy plover nesting habitat on Vandenberg Air Force Base (AFB) during the 2002 breeding season (the same area that was open to recreational access during the 2001 and 2000 breeding seasons). During the 2002 breeding season and for any year thereafter that the Air Force and the Service agree to extend this biological opinion, public access would be available to approximately 0.5 mile of Surf Beach, military access would be available at the northernmost 0.25 mile of Wall Beach and the northernmost 0.5 mile of Minuteman Beach (Figure 1). Military access in this context includes active duty military and their dependents, retired military and their dependents, Department of Defense and Vandenberg AFB contractor employees and their dependents, and authorized limited public access for saltwater fishing.

The open 0.5-mile section of Surf Beach would extend from the closure fence that was installed at south Surf Beach in July 1999 and continue north approximately 0.5 mile. The northern boundary would be established to avoid the cluster of several nests that typically occurs near this boundary. Access to Surf Beach would be through the existing access trail at the Surf Station parking lot and by a trail through the back dunes from the Santa Barbara County Ocean Beach parking lot to Surf Station (Figure 2). A public access road through Vandenberg AFB, Ocean Avenue, makes Ocean Park and Surf Station accessible to the general public.

Access to Wall Beach would be provided from the new access trail beginning at the northern corner of the parking area and continuing northward along the bluff-backed beach to protect all dune-backed habitat on Wall Beach. Access to Minuteman Beach would be to the bluff-backed beach north of the existing access trail where western snowy plover nesting has not been known to occur to date. Minuteman Beach south of the access trail will be closed. A paved access road connects to the Wall Beach parking lot.

All other sandy beaches designated as western snowy plover critical habitat on Vandenberg AFB would be closed during the breeding season (March 1 to September 30). The closed sections of beach would be fenced and signed indicating the reason and timing of the closure. Fences would run perpendicular to the ocean from the back dunes to at least the mean high tide line. Fencing would be removed seasonally at the end of the closed period. Snow fencing, wire and plank, or some other appropriate material would be used and, as in the past, the fencing materials would be kept at least 12 inches above ground level to allow for movement of birds and natural sand drift.

In addition, the Air Force would implement a year-round closure of the Santa Ynez River mouth. Symbolic fencing, posts with plastic coated wire or plastic chain, would be constructed on both sides of the closure at the Santa Ynez River mouth. Signs would indicate the area and purpose of the closure. This closure would extend 0.3 mile to the north of the river mouth and on the south extend from a point approximately 650 feet west of the Ocean Park beach access point proceeding southwesterly below the foredunes to the shoreline. The southern closure area would likely range from 0.2 to 0.4 mile based on the position of the river mouth in any given year. This closure will encompass the outer beach area near the river mouth frequently used by wintering western snowy plovers.

To offset the adverse effects of recreational access on 1.25 miles of western snowy plover nesting habitat, the Air Force proposes to eradicate non-native dune vegetation, control predation, and strictly enforce the closures, as described in biological opinion 1-8-01-F-13.

A predator management plan was developed by the Air Force in coordination with the Service during the 2001 breeding season. The goal of the plan is to control predation on western snowy plovers sufficiently to allow these birds to attain a reasonable level of recruitment into the population. Predation control focuses on those species, coyotes (*Canis latrans*) and American crows (*Corvus brachyrhynchos*), that historically have had a substantial effect on western snowy plover breeding and fledging success. Individual problem coyotes and crows are targeted for lethal removal. Predatory birds, such as American kestrels (*Falco sparverius*), loggerhead shrikes (*Lanius ludovicianus*), and merlins (*Falco columbarius*), found to be preying on western snowy plovers at Vandenberg AFB will be captured and relocated when possible. The predator management plan is subject to change based on information learned as the plan is implemented.

To minimize human intrusion into closed areas and the effects from the presence of people in open beach areas, the Air Force will continue to implement the following measures:

1) Snow fencing and bilingual (English/Spanish) signs will be placed to delineate closed beach and dune areas. Fencing in beach areas will be erected perpendicular to the shoreline and will extend from as close to the water as practical to the upper dunes.

2) Fences will be inspected on at least a weekly basis throughout the breeding season to assess the need for maintenance. People charged with repairing damaged fences will coordinate with the biological monitors to avoid adversely affecting western snowy plovers during fence maintenance activities.

3) Nixalite® will be installed on all posts and fencing where practicable to minimize the attraction of these structures to avian predators.

4) All beach areas where snow fencing is impracticable (*i.e.*, where the ocean will destroy the fence) will be posted as closed with bilingual (English/Spanish) signs.

5) Trash containers will be provided near entrances to all open beach areas in convenient locations.

6) Biweekly beach inspections will be made to remove any trash from open beach areas.

7) An educational program will be developed that will:
   A) describe and illustrate the habitats of the western snowy plover and its distribution and habitat on Vandenberg AFB;
   B) describe the threats to the western snowy plover;
   C) explain seasonal access restrictions to certain areas;
   D) show examples of signs describing beach restrictions;
   E) explain the penalties for not obeying restrictions;
   F) provide maps showing restrictions; and
   G) identify the proper contact if an injured or dead western snowy plover is found.

8) A kiosk will be installed by April 1, 2001, at the entrance to Surf Beach to educate the public about the western snowy plover and beach restrictions.

9) An educational brochure for distribution to the public will be developed and copies submitted to the Service for review prior to the opening of the beaches to recreational access.

10) The following beach rules will remain in effect for all Vandenberg AFB western snowy plover breeding beaches on a year-round basis:
   A) overnight camping is prohibited;
   B) pets must be on a leash at all times;
   C) littering is prohibited;
   D) recreational off-road vehicles are prohibited; and
   E) fireworks are prohibited.

11) The following additional beach rules will be in effect for all Vandenberg AFB western snowy plover breeding beaches during the March 1 to September 30 breeding season:
   A) beach fires are prohibited;
   B) pets are prohibited;
   C) horses, except for those used for enforcement of the beach access rules, are prohibited; and
   D) kite flying is prohibited.

12) Enforcement of beach access restrictions will be accomplished using three enforcement officers assigned at open beaches from dawn to dusk every day. One person will be

stationed at Surf Beach, another at Ocean Park, and a third person will patrol both Wall and Minuteman beaches. Periodic night patrols will be conducted. Enforcement will be conducted by foot or horseback and will be restricted to the wet sand in closed areas to the maximum extent practicable. ATVs will only be used to for emergency purposes. ATVs will be restricted to the wet sand to the maximum extent practicable.

13). The Air Force's enforcement officers will issue citations to all persons found violating the beach access restrictions.

14) If more than 25 violations of the closed area of Surf Beach are documented by the Air Force in any one breeding season, Surf Beach will be closed to all recreational access for the remainder of the western snowy plover breeding season. If more than 10 violations of the closed area of Wall Beach are documented by the Air Force in any one breeding season, Wall Beach will be closed to all recreational access for the remainder of the breeding season. If more than 5 violations of the closed area of Minuteman Beach are documented by the Air Force, Minuteman Beach will be closed to all recreational access for the remainder of the breeding season.

Violations of beach closures will be determined by the Air Force based on either individuals found in closed areas or by evidence of such based on footprints in closed areas. Air Force wardens or Service Special Agents will investigate suspected violations and report their findings to the Environmental Flight Commander, 30 CES/CEV, for final determination of an incident being considered a violation.

Violations of beach closures will be determined based on the following:

1) Each individual found in a closed beach area will be counted as a single and separate violation. Multiple persons in a closed area will count as multiple violations.

2) Documentation of entry into closed beach areas based on footprints shall be considered a violation for each set of footprints. Footprints found in the interior of a closed area that likely did not significantly disrupt normal western snowy plover behavioral patterns should not be investigated nor documented as a violation if the act of investigating the suspected violation could adversely affect breeding western snowy plovers.

3) Evidence of persistent activity (lasting more than a few minutes) in a closed area, such as a fire, camping, resting or other similar activity, will be investigated as a violation. An investigation will be conducted to attempt to determine the following: the number of people that entered the closure, the type of activity and duration, and the potential effects to western snowy plovers. Investigations of potential violations will be conducted so that western snowy plovers will not be injured as a result of the investigation. The Air Force and Service Special Agents will coordinate with and be escorted by western snowy plover

monitors to prevent injury to birds. Western snowy plover monitors should assist the investigating official to help determine potential effects of the incident being investigated on the western snowy plover.

In addition to the measures implemented in 2001 and described above, the Air Force proposes to implement the following measures during the 2002 nesting season. The following measures will allow more consistent follow-up and documentation of violations and support wardens in their enforcement efforts:

1) Provide official forms (AF Form 1168, Statement of Suspect/Witness Complaint) to snowy plover monitors for recording their observations of violations. This will help standardize reporting by monitors to better document the time, date, nature of observed violations, and evaluate potential impacts to snowy plovers.

2) Law enforcement personnel must witness these statements. Therefore, the monitor must contact wardens as soon as possible (*i.e.*, the same day) after observing evidence of violation(s). Many cases (*e.g.* footprints only evidence) require subsequent onsite investigation by wardens to determine if a violation or violations occurred that would be counted toward the limit. In some cases this may not be feasible. Therefore, this measure is expected to reduce, but not entirely eliminate, the number of incidents where the monitor's trespass observations do not receive follow-up investigation by law enforcement.

3) Establish clear protocols for communication between plover monitors, wardens, and Vandenberg AFB biologist.

4) Ensure monitors are kept informed of all beach openings/closings and criteria for counting violations toward the violation limit for each beach. In 2001, some violations went unreported because monitors thought the beach was open when it was closed.

5) Provide monitors with satellite phones to facilitate contact from the beach. In many instances, monitors observed violations or evidence of violations, but were unable to make timely contact with wardens because of lack of cellular phone and radio reception on snowy plover beaches. Because wind and tides can quickly obliterate footprint evidence, timely follow-up is essential to investigating and documenting violations.

6) The Air Force is seeking additional funding to increase the number of monitors from two to four. If funds are obtained to support this increase, this will improve frequency of monitor visits to each beach. This will aid enforcement efforts by reducing lag time between the violation and the observation of tracks or other evidence, and should allow more time for monitors to work with wardens to investigate violations without compromising the monitoring effort.

STATUS OF THE SPECIES

See biological opinion 1-8-01-F-13 for information on the status of the western snowy plover.

ENVIRONMENTAL BASELINE

See biological opinion 1-8-01-F-13 for specific information on the western snowy plover at Vandenberg AFB. The following information supplements that biological opinion.

Data collected by the Air Force for the 2001 western snowy plover breeding season shows an increase in the total number of nests and nests hatched over the 2000 breeding season. The number of total nests increased from 140 in 2000 to 182 in 2001, while the number of nest hatched increased from 41 to 96 (Table 1). The hatch rate for 2001 was 53 percent compared to a Vandenberg AFB average hatch rate (1994-2000) of 39 percent. The number of chicks that survived to fledge (the age when they are able to fly) was 47 percent, compared to a Vandenberg AFB average (1997-2000) of 29 percent. Fifty-four nests (30 percent) were lost to predators, down from 66 nest (52 percent) in 2000. The seven-year average of known-fated nests lost to predators at Vandenberg AFB is 37 percent. (Comparison data taken from Applegate and Schultz (2001).)

Table 1. Western snowy plover population size and number of nests at Vandenberg AFB

Year	Mean 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	135	182	96

EFFECTS OF THE ACTION

See biological opinion 1-8-01-F-13 for specific information on the effects of the Air Force's beach management plan on the western snowy plover. The following information supplements that biological opinion.

Human Disturbance

During the 2001 breeding season, the segments of Surf, Wall, and Minuteman Beaches described above were opened only when personnel were available for enforcement duties according to the level of effort established in our March 9, 2001, biological opinion. The Air Force was not able to open any beaches until May 25, 2001, because prior to that time they did not have enforcement personnel available or trained. After May 25, Surf Beach was open from Friday through Monday between the hours of 0800 to 1800. Wall and Minuteman Beaches were opened later in the season and on a more variable schedule.

The Air Force did not count any trespass towards its limit on violations of beach access restrictions when beaches were not open. These acts of trespass were not in violation of the beach access restrictions pursuant to the biological opinion because the Air Force was not carrying out its beach management plan. Because the beach management plan was implemented for only part of the breeding season, Vandenberg AFB beaches had less of an enforcement presence than described in the biological opinion. This likely resulted in a greater number of people caught or suspected to have trespassed into closed areas than was anticipated in the March 9, 2001, biological opinion. According to an Air Force report at least 142 people trespassed onto its beaches during the breeding season outside the period when the beach management plan was being implemented (*i.e.*, these people did not count towards the cap of violations for any beach segment)(Read, pers. comm.). Approximately 64 of these trespass violations were on the section of Surf Beach that would have been open if enforcement were available. The large number of violations into closed areas was not anticipated in the biological opinion because the Service believed the beach management plan would have been implemented for the entire season and the enforcement requirements included in that plan would have limited the number of violations. The lack of enforcement personnel at Surf and Ocean Park during daylight hours led to a greater number of violations than the Service anticipated.

The Air Force reported that no specific impacts to snowy plovers were documented from human activity and no nest losses were directly attributed to humans in 2001. However, all violations had the potential to disturb nesting snowy plovers or their chicks as well as alert predators to nests and chicks (from fleeing adults or chicks). These indirect effects can not be evaluated because, if they occurred, they occurred when monitors were not present.

Enforcement of Restrictions

The Air Force hired a total of four enforcement personnel to monitor and enforce beach access restrictions. In addition, three Air Force wardens were on duty throughout the week, conducting

random patrols of all beaches. Each warden was required to spend at least four hours on beach patrol during each shift (both day and night patrols).

Air Force wardens and civilian law enforcement personnel issued a total of 72 citations for trespass violations in snowy plover habitat. Some people could not be legally cited (e.g. juveniles), however documented violations by such individuals were counted toward violation limits. All violators were informed of the reason they were being cited or otherwise contacted by enforcement personnel, and violators were removed from closed beach areas. Surf Beach exceeded its limit of 25 violations on September 3, 2001, and was immediately closed through the end of the western snowy plover breeding season, September 30, 2001. Wall Beach recorded 8 violations (limit = 10), while two violations were recorded at Minuteman Beach (limit = 5).

Predator Management

Predation of western snowy plover nests during the 2001 breeding season (54 nests/30 percent) was lower than in 2000 (66 nests/52 percent) and lower than the average rate of nests lost to predation at Vandenberg AFB (37 percent). The most dramatic declines were observed in coyote predation (Table 2). Unidentified predators accounted for a substantial portion of nest losses in 2001, exceeding the losses attributed to identified predators (18% versus 12% of all known-fate nests). Changes in monitoring personnel in 2001 could possibly account for some, but likely not all, of the observed differences. The Point Reyes Bird Observatory (PRBO) is currently working to establish and document clear, objective criteria for assigning nest losses to predators.

Table 2. Predation rates compared to the previous 5 years is shown below:

	2001	2000	1999	1998	1997	1996
Total number of known fate nests	181	127	97	134	398	271
Number/% of nests predated	54/30%	66/52%	20/21%	42/31%	206/52%	55/20%
Number/% of nests lost to coyotes	10/6%	34/27%	16/16%	32/24%	73/18%	31/11%
Number/% of nests lost to corvids	8/4%	9/7%	4/4%	19/14%	43/11%	5/2%
Nests lost to unidentified predators	33/18%	26/20%	0	10/7%	72/18%	17/6%

Some of the nest losses listed as "unknown" may have been lost to American crows (Page, pers. comm.). Crows landing briefly at nests and removing eggs may leave few tracks, which would be quickly obscured by wind or over-tracking by snowy plovers and other shorebirds. Vandenberg AFB's western snowy plover monitors do not believe that coyotes were responsible for losses to unidentified predators, as the track evidence left by these large mammalian predators persists longer and more clearly in the environment than those of avian or other smaller predators. Vandenberg AFB biologists believe that documented losses to crows may reflect a

lower level of impact to nesting plovers than actually occurred, while predation rates by coyotes reflect actual reductions in 2001 compared to prior years (Read, pers. comm.).

Although no predation was documented from birds of prey, prevalent tracks of great horned owls on plover beaches, particularly at Surf and Wall, raised concern about potential risks to adult plovers, nests and chicks. The Santa Cruz Predatory Bird Research Group successfully located nesting areas and live-trapped owls near these beaches. Owl tracks on beaches subsequently declined substantially after the trapping effort.

The following were new observations of predators and predation for 2001:

1) Common ravens were observed in plover habitat on Vandenberg AFB for the first time, and 2 nests were lost to raven predation. The raven is very rarely sighted on Vandenberg, but its range appears to be expanding (Read, pers. comm.).

2) American crows, while documented as snowy plover nest predators in all years, were much more prevalent on plover beaches in 2001. In prior years, USDA-Wildlife Services removed the few crows frequenting snowy plover beaches, and both crow observations and nest losses to crows stopped after these removals. In 2001, crow presence on plover beaches was observed throughout the nesting season despite an increase in the number of crows lethally removed by Wildlife Services.

3) Lethal removal of crows by Wildlife Services likely reduced, but did not eliminate, nest predation by crows. Wildlife Services lethally removed 98 crows. However, because of concerns about potential impacts of crow shooting activities on snowy plovers, many if not most of these removals took place from inland sites. It is not known how many of the crows removed were actually foraging on snowy plover beaches.

4) Raccoons were documented as nest predators on Vandenberg for the first time, with one nest loss on the Shuman beach sector. Raccoon tracks are prevalent on all plover beaches, but foraging by raccoons appears to occur primarily in the intertidal zone.

5) Reduction in predation by coyotes may be partially attributed to an abundance of alternative prey such as rabbits. Although Wildlife Services conducted one trapping attempt on Surf Beach, this effort was unsuccessful and ceased after nest losses to coyotes in that area stopped.

6) Other management actions, including reduced days and hours of beaches open to recreation (due to enforcement personnel limitations), reduced area of open beach, better enforcement of restrictions, and measures to reduce trash on beaches and conduct regular clean-ups, may all have contributed to reduced predation rates observed on Surf Beach.

Removal of some marine mammal carcasses may have also reduced predator presence on plover beaches.

To better implement predator control at Vandenberg AFB, the Air Force proposes the following modification of the 2001 Interim Predator Management Plan for the 2002 season.

Avian Predators

1) Employ "cage traps" to trap and remove crows near plover nesting habitat. The California Department of Fish and Game and the Service have verbally given approval for this action. This effort is expected to provide enhanced removal of "problem" crows (i.e. birds actually frequenting plover habitat), without disturbing nesting plovers. Trap placement during the nesting season will be coordinated with snowy plover monitors, as occurs with all predator management activities. In addition, crow trapping may also be conducted prior to the start of the nesting season. The traps will be approximately 12 feet long by 5 feet wide by 10 feet high. Crows will be lured to the traps and subsequently humanely euthanized. Authorized Wildlife Services personnel or other permitted and authorized personnel under the direction of the Vandenberg AFB Wildlife Biologist will maintain the trap(s), humanely euthanize crows, and dispose of carcasses.

2) Lethal removal of crows and/or ravens by shooting may continue to be warranted in some instances. Personnel who are both capable of safely conducting this activity and qualified/permitted to work in snowy plover habitat, will conduct crow removal in sensitive areas and/or work directly with Wildlife Services personnel so that removal can be more effectively conducted without adversely impacting nesting plovers.

3) We propose to conduct observations of crow movements to and from beaches, in an attempt to identify roosting and nesting locations of crows that frequent plover habitat. In some cases, crows may be utilizing non-native trees or other structures that can be removed to deter crow presence in plover areas.

Mammalian Predators

The use of night vision video cameras was not a sufficiently effective method of monitoring coyote activity at nesting beaches. The Air Force has proposed following measures to increase effectiveness of mammalian predator monitoring.

1) Strategically placed infrared-triggered still cameras will be located at trails near nesting areas highly frequented by predators. These cameras will attempt to photograph predators going to and from nesting habitat.

2) Photographs obtained with still cameras will provide potential locations for placement of traps in the event the removal of an individual predator is warranted.

3) Trapping and/or lethal removal of mammalian predators within nesting habitat would be done by trained and authorized personnel who are permitted to work in plover nesting habitat.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. Because the Air Force manages the land within the action area, we do not anticipate that any non-federal actions are reasonably certain to occur.

CONCLUSION

After reviewing the current status of the western snowy plover, the environmental baseline for the action area, the effects of the proposed action, implementation of this management plan during the 2001 breeding season, and the cumulative effects, it is the Service's biological opinion that implementation of the Air Force's beach management plan is not likely to jeopardize the continued existence of this species nor destroy or adversely modify its critical habitat. We find that the proposed action is not likely to jeopardize the continued existence of the western snowy plover nor destroy or adversely modify its critical habitat because:

1. Implementation of the proposed action will strengthen management actions at Vandenberg AFB needed to protect the western snowy plover. As a direct result of these management actions, nesting success and fledging success are expected to increase in the areas closed to recreational access;

2. The three areas proposed open for beach recreation have historically only supported between zero to three percent of all western snowy plover nests at Vandenberg AFB;

3. The constituent elements of critical habitat within 90% of the habitat of the western snowy plover at Vandenberg AFB would not be adversely affected by recreational use; and

4. The Air Force's proposal to restore degraded habitat and commitment to implementing a sound predator management plan are likely to improve the status of the western snowy plover and increase the value of its critical habitat at Vandenberg AFB.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulations promulgated pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary and must be undertaken by the Air Force for the exemption in section 7(o)(2) to apply. The Air Force has a continuing duty to regulate the activity covered by this incidental take statement. If the Air Force fails to assume and implement the terms and conditions of the incidental take statement, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the Air Force must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(I)(3)].

Western snowy plovers are small, cryptically-colored birds that are difficult to detect, except when they move. Finding dead or injured individuals is difficult. The patterns of seasonal presence of this species are complex. Breeding individuals and their young are present in spring and summer; migratory or wintering individuals augment the resident population in fall and winter. Changes in numbers of western snowy plovers at Vandenberg AFB can be attributed to several factors, not solely to the activities at Vandenberg AFB, although instances of take (*e.g.*, resulting from humans and ATVs) have been observed or inferred from monitoring. Determining whether a nesting effort succeeded or failed is difficult; ascribing a reason for the failure of a nest when it does occur is also often difficult. Consequently, anticipating the precise number of western snowy plovers that may be taken as a result of the Air Force's beach management program in any given year is not possible. As should be expected, we are also unable to anticipate the precise number of western snowy plovers that may be taken over the course of several years of beach management.

Beaches open to recreational use

We anticipate that the Air Force's beach management program is likely to result in the take of all nesting western snowy plovers in the open access areas through harassment, harm, or mortality as a result of humans crushing chicks, nests, and eggs; causing individuals to flush; disrupting foraging behavior; causing adults to abandon nests; increasing the likelihood of predation and exposure to adverse weather conditions; and altering habitat features necessary for successful breeding and foraging. The greatest number of nests that has been recorded in any year since 1994 in the combined 1.25 miles of Surf, Wall, and Minuteman Beaches open to recreational access is 11.

Beaches closed to recreational use

We anticipate that maintenance of signs and fencing during the breeding season may result in harassment of western snowy plovers near these structures. We are unable to estimate the number of individuals that may be harassed because we cannot predict the frequency or extent of maintenance that will be required or the number of western snowy plovers that may nest or attempt to raise broods in the vicinity of these structures. However, given the fairly limited area where signs and fencing are located, we anticipate that few western snowy plovers would likely be taken through harassment associated with this activity.

We anticipate that enforcement activities on both closed and open beaches may result in mortality or injury of western snowy plovers. Enforcement personnel either on foot or horseback would stay on the wet sand, when practicable, where western snowy plovers do not nest. For this reason, we anticipate that few western snowy plovers would likely be killed or injured as a result of enforcement activities.

We anticipate that implementation of a Service-approved predator management plan may result in mortality or injury of western snowy plovers on both open and closed beaches. Capture and removal or lethal removal of individual problem predators may result in loss of nests and chicks from crushing by people implementing predator management. These activities may also cause abandonment of nests associated with removal of predators. However, implementation of the approved plan by wildlife professionals will likely limit injury or mortality to few, if any, western snowy plovers.

The take of any western snowy plovers by recreational beach users in the areas closed to beach recreation as a result of non-compliance with beach access restrictions is not exempted from the prohibitions against take contained in section 9 of the Act because these actions are in violation of posted or stated prohibitions on Vandenberg AFB. Any take resulting from these activities may be considered a violation of section 9 of the Act.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of the western snowy plover:

1. The Air Force shall implement an education program for all base personnel likely to use base beaches, including outside contractors and visitors who may use beaches for recreation, to improve awareness of the western snowy plover on Vandenberg AFB and the protective measures that are being implemented to conserve it.

2. The Air Force shall limit, to the maximum extent practicable, the adverse effects of recreational access in open areas.

3. The Air Force shall monitor breeding western snowy plovers to determine effectiveness of the beach access restrictions.

4. The Air Force shall minimize, to the maximum extent practicable, trespass into closed areas.

5. The Air Force shall minimize, to the maximum extent practicable, adverse effects of implementation of its predator management plan on breeding western snowy plovers.

The Service's evaluation of the effects of the proposed actions includes consideration of the measures developed by the Air Force, and repeated in the Description of the Proposed Action portion of this biological opinion, to minimize the adverse effects of ongoing actions to the western snowy plover. Any subsequent changes in the minimization measures proposed by the Air Force may constitute a modification of the proposed action and may warrant re-initiation of formal consultation, as specified at 50 CFR 402.16. These reasonable and prudent measures are intended to clarify or supplement the protective measures that were proposed by the Air Force as part of the proposed action.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, the Air Force must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline reporting and monitoring requirements. These terms and conditions are non-discretionary.

1. The following terms and conditions implement reasonable and prudent measure 1:

   a. The Air Force shall provide its educational program described in this biological opinion to all base personnel and contractors who may use beaches for recreation.

b. Copies of information developed to satisfy term and condition 1.a. shall be provided to the Service's Ventura Fish and Wildlife Office by February 1, 2002.

c. The Air Force shall develop signs that clearly describe the reasons for the closure, the biological needs of the western snowy plover, all beach access restrictions, and penalties for violating beach access restrictions. The Air Force shall ensure that bilingual (English/Spanish) signs containing this information are posted in areas clearly visible to beach users at all beach access points.

d. Information on the adverse effects of feeding wildlife, particularly coyotes, and littering shall be incorporated as part of the Air Force's educational program for beach users. Prohibitions on feeding wildlife shall be included as part of the beach access rules.

e. Any information provided to beach users shall clearly state that violators will be cited and that recreational access will be terminated if the number of violations exceeds specified limits.

2. The following terms and conditions implement reasonable and prudent measure 2:

a. Trash containers supplied by the Air Force for people using their beaches shall have permanent lids that will prevent animals from gaining access to the contents of the trash containers. Trash containers shall be emptied and clean as needed to minimize attracting predators.

b. Para-surfing, or use of any parachute-like sail used to sail on the ocean in a manner similar to wind-surfing, shall not be allowed to originate from any Vandenberg AFB beach during the western snowy plover breeding season.

c. The Air Force shall contact the Service immediately if two or more nests are found in any open beach area to determine if a protection strategy is necessary. The Air Force shall take additional measures to protect nests if, during discussions with the Service, we deem these measures necessary and appropriate.

3. The following terms and conditions implement reasonable and prudent measure 3:

a. All nesting activity of western snowy plovers on Vandenberg AFB shall be monitored throughout the breeding season (March 1 to September 30). This monitoring shall be conducted by biologists specifically approved by the Service for monitoring at Vandenberg AFB and shall be performed in a manner consistent with the monitoring effort conducted over the past several years. The Air Force shall submit the credentials of individuals it wishes to conduct these activities to

the Service for our review and approval at least 15 days prior to the onset of these activities.

b. A monitoring plan shall be submitted to the Service for our approval by February 1, 2002. Any proposal to alter monitoring methodology or data collected shall be subject to the review and approval of the Service.

4. The following term and condition implements reasonable and prudent measure 4:

a. Fencing shall be improved to prevent trespass through, over or under fences. The Air Force shall consider using barbed wire or other deterrent to prevent people from violating the closures. A description of improved access control shall be submitted to the Service for review and approval by January 11, 2002.

5. The following term and condition implements reasonable and prudent measure 5:

a. Any change to the Air Force's approved predator management plan, or other related aspects of this management plan, shall be approved by the Service prior to its implementation.

REPORTING REQUIREMENT

The Air Force shall provide the following reports to the Service:

1. An annual report for each western snowy plover breeding season for which this biological opinion is in effect, per the terms and conditions described above. The report shall document the number of western snowy plovers killed or injured by the activities evaluated in this biological opinion. The report shall also contain a discussion of activities that disturbed nesting birds; the results of biological surveys and sighting records; and any other pertinent information as required by this biological opinion. The report shall follow the format and include at a minimum the same type of data as the 2000 breeding season report, unless otherwise approved by the Service. In addition, the report shall document compliance with all of the protective measures being implemented to conserve western snowy plovers and recommendations to better protect western snowy plovers on Vandenberg AFB. This document will assist the Service and the Air Force in evaluating future measures for the conservation of the western snowy plover at Vandenberg AFB. The annual reports are due December 31 of each year this biological opinion is in effect.

2. An annual report on wintering western snowy plovers at Vandenberg AFB. This report shall include, at a minimum, results of winter surveys, effectiveness of the winter closure at the Santa Ynez River mouth, recommendations to better protect wintering western

snowy plovers at Vandenberg AFB, and any other pertinent information that may be useful in protecting wintering western snowy plover. The annual reports are due on May 31 of each year this biological opinion is in effect.

3. A written report from the base security personnel shall be provided to the Service at least monthly. This report shall document the hours spent in the field monitoring beach access restrictions and the following per violation: 1) day, time, and location of the violation; 2) description of the violation; 3) potential impacts to western snowy plovers; 4) action taken (citation, removal from base, *etc.*); 5) name of the individual cited and affiliation with the Air Force (military personnel, contractor, or not affiliated); 6) the city where the individual resides; and 7) evidence that violations occurred (*i.e.*, photographs, written description of footprints) that did not result in a citation or suspected violations that were not counted as a violation. In March and April of each year, weekly notification shall be made to the Service. These weekly reports shall document the total number of violations verified for each beach segment. The Air Force shall keep the Service informed if the number of violations is approaching the maximum allowed for each beach segment and shall notify the Service within one business day if the maximum number of violations is reached or exceeded. Notification or reporting requirements may be modified if agreed to by the Air Force and the Service.

4. A report shall be provided to the Service by February 28 of each year describing the areas where fencing has been installed and where fencing and signs have been fitted with Nixalite® or other appropriate material.

5. A weekly report of predator management activities. This report shall include: a description of predator take or suspected take of western snowy plovers or their eggs and nest; actions initiated by the Air Force to reduce the level of take; and number, if any, of predators removed from western snowy plover breeding habitat and the method used to remove them.

DISPOSITION OF INJURED OR DEAD SPECIMENS

Upon locating a dead or injured western snowy plover, initial notification must be made to the Service's Division of Law Enforcement by facsimile at (310) 328-6399 and the Ventura Fish and Wildlife Office at (805) 644-3958 immediately, and in writing within three (3) working days. Notification must include the date, time, and location of the carcass; cause of death, if known; and any other pertinent information. Care must be taken in handling injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state for later analysis of cause of death. The finder has the responsibility to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed, unless to remove it from the path of further harm or destruction. Should any treated listed species survive, the Service should be contacted regarding the final disposition of the animals.

The remains shall be placed with the Santa Barbara Natural History Museum, Vertebrate Zoology Department (Contact: Paul Collins, Santa Barbara Natural History Museum, Vertebrate Zoology Department, 2559 Puesta Del Sol, Santa Barbara, California 93105, (805-682-4711 ext.321), unless otherwise agreed to by the Service. Arrangements regarding proper disposition of potential museum specimens shall be made with the Santa Barbara Natural History Museum by the project monitor prior to implementation of the action.

In the case of take or suspected take of western snowy plovers not exempted in this biological opinion, the Ventura Fish and Wildlife Field Office and the Division of Law Enforcement shall be notified within 24 hours.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

> The Air Force should ~~attempt to work with the Santa Barbara County Department of Parks and Recreation to management of Ocean Beach County Park is consistent with conservation of the western snowy plover.~~

~~The Service requests notification of the implementation of any conservation recommendations so we may be kept informed of actions minimizing or avoiding adverse effects or benefitting listed~~ species or their habitats.

REINITIATION NOTICE

This concludes formal consultation on the Air Force's proposed management plan for the western snowy plover on Vandenberg AFB. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. More specifically, the Air Force shall reinitiate consultation with the Service if enforcement levels prove to be inadequate in preventing a substantial number of beach closure violations. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Thank you for your interest in and efforts to protect western snowy plovers on Vandenberg AFB. We look forward to working with the Air Force on the implementation of this beach management plan and assisting you in your efforts to provide for the recovery of the western snowy plover. If you have any questions regarding this biological opinion, please contact Steve Henry of my staff at (805) 644-1766.

Sincerely,

Diane K. Noda
Field Supervisor

Enclosures

Lieutenant Colonel Scott W. Westfall **DRAFT** 21

Fig 1.

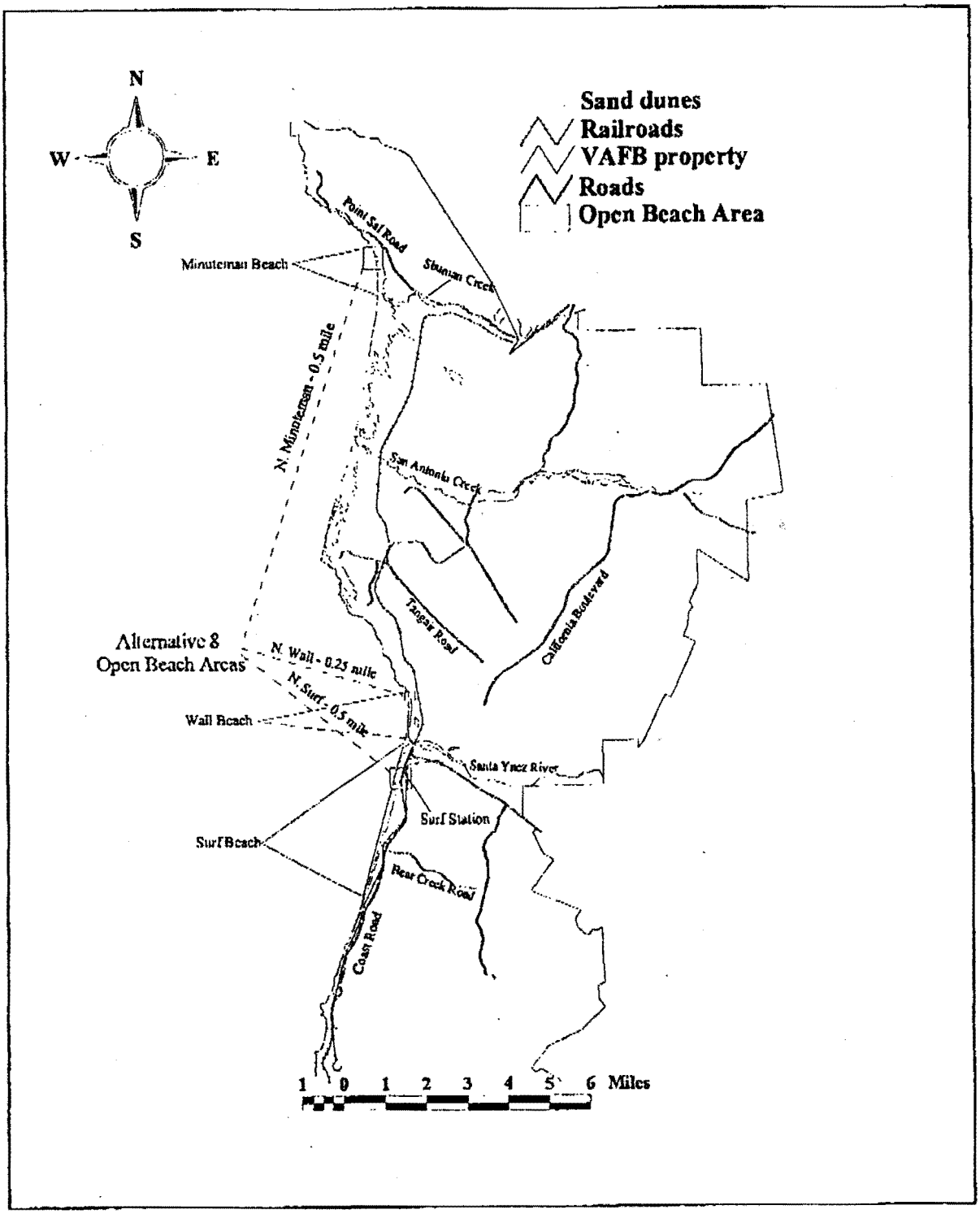


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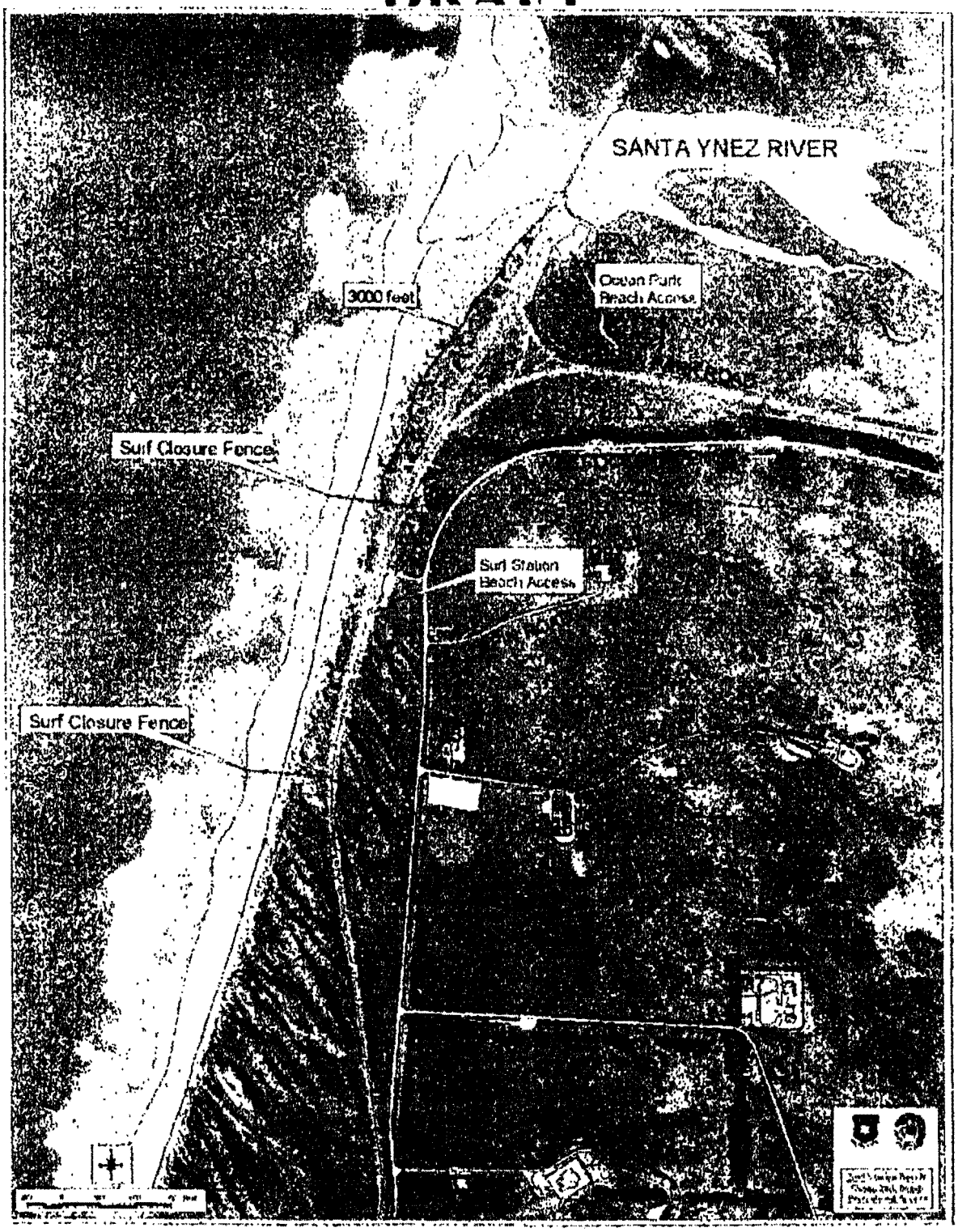
Fig 2



Lieutenant Colonel Scott W. Westfall **DRAFT**

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