



United States Department of the Interior

FISH AND WILDLIFE SERVICE

ECOLOGICAL SERVICES

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October 19, 1993

Colonel Laurence R. Sadoff
District Engineer
Department of the Army
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

Subject: Biological Opinion for the Disposal and Reuse of Fort
Ord, Monterey County, California (1-8-93-F-14)

Dear Colonel Sadoff:

This biological opinion responds to the request by the Corps of Engineers (Corps) for formal consultation with the U.S. Fish and Wildlife Service (Service) pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (Act). Your request was dated May 5, 1993, and received by the Service on May 10, 1993. At issue are the impacts that the closure and reuse of Fort Ord, located in Monterey County, California, may have on the federally listed Smith's blue butterfly (Euphilotes enoptes smithi), western snowy plover (Charadrius alexandrinus nivosus), and sand gilia (Gilia tenuiflora ssp. arenaria).

The Corps has determined that the proposed action would not adversely affect the southern sea otter (Enhydra lutris nereis), or the American peregrine falcon (Falco peregrinus anatum), nor modify any critical habitat for these species. Through informal consultation with the Corps, the Service has concurred with this assessment. Therefore, those species will not be discussed further in this biological opinion.

This biological opinion was prepared using information contained in: the Draft Fort Ord Disposal and Reuse Biological Assessment (Army 1993a) and the supplement to that assessment (Army 1993b) included with the request for consultation; the Flora and Fauna Baseline Study of Fort Ord, California (Army 1992); and our files. Representatives from the Service, the local botanical community, and the Army met on January 7, 1993 at Fort Ord to view sensitive habitat areas. Several subsequent meetings occurred between the Service and the Corps in Sacramento, Ventura, and at Fort Ord to discuss the base closure and section

7 consultation process. The Service is currently consulting with the Corps on the impacts of ongoing training activities at Fort Ord to listed species.

Biological Opinion

It is the opinion of the Service that the proposed action is not likely to jeopardize the continued existence of the Smith's blue butterfly, the western snowy plover, or the sand gilia. No critical habitat has been designated for these species. Therefore, the proposed action would not adversely modify critical habitat.

Description of the Proposed Action

Disposal and Reuse

Fort Ord is an Army installation located in northern Monterey County. It occupies approximately 28,000 acres, or 43 square miles, adjacent to Monterey Bay. The Department of the Army has been directed to close Fort Ord pursuant to the Defense Base Closure and Realignment Act of 1990. The proposed action is disposal of excess property made available by the closure of Fort Ord, with retention of the existing reserve center and establishment of a Presidio of Monterey (POM) annex. Closure and reuse of Fort Ord will be a long-term process spanning several years because of the time required to relocate personnel and efforts to clean contaminated sites and unexploded ordnance. The closure process is divided into five major categories: pre-disposal actions; establishment of a POM annex; retention of the reserve center; disposal process; and reuse alternatives. Pre-disposal actions include placing the installation in a caretaker status, remediating contaminated sites, and issuing interim leases. These actions are independent of the disposal process.

Establishing a POM annex would require approximately 1,500 acres of Fort Ord land. This annex would provide support services for the POM and the Defense Language Institute, as well as for other military facilities and other active-duty and retired military personnel in the region.

The Army plans to retain a 12-acre parcel of land with a 21,000-square-foot reserve center, located at Imjin Gate near Reservation Road. The reserve center provides support functions to reservists (Army, Navy, Air Force, or Marines) for training.

After closure of Fort Ord, the Army plans to dispose of approximately 26,000 acres, or 95% of the installation. The Corps has completed the required Federal, State, and local government screening process for disposition of Federal real property and has identified a broad range of potential reuse alternatives. Six specific alternatives were identified in the

Draft Environmental Impact Statement (EIS) (Army 1992b). The Corps subsequently revised Alternative 6 and, at this time, has requested formal consultation with a full analysis on Revised Alternative 6 with additional comments on the other alternatives identified in the Draft EIS, which the Service has provided in a separate document (enclosure). The final determination of the preferred alternative will be made by the Secretary of the Army during the administrative review of the Final Environmental Impact Statement.

Reuse of the property, which is an action to be taken by local agencies and private parties, is analyzed as an indirect or secondary effect of executing the proposed action. Direct, indirect, and cumulative impacts from disposal and reuse were evaluated for all listed threatened or endangered species. An evaluation of impacts to proposed and candidate species is contained in a separate Service document (enclosure).

According to the biological assessment (Army 1993b), Revised Alternative 6 includes establishment of the POM annex, retention of the reserve center, and disposal of excess property. Under this alternative, approximately 23,488 acres of land would be transferred to public agencies and the remaining land (approximately 3,000 acres) would be disposed of to private entities. Future uses of these lands would be established by the new owners in accordance with local land use requirements and the requirements of regulatory agencies.

This alternative would result in the transfer of most sensitive environmental areas to Federal and State agencies expected to manage the lands without significant adverse environmental impacts. Transfer of portions of Fort Ord to some State and local agencies would allow for development of educational, recreational, airport, business, and institutional uses that would offset the economic effects of closure of Fort Ord. The lands to be disposed of to private interests would be converted to new uses through a cooperative agreement with local agencies where the local governments would determine appropriate uses for these lands and act to coordinate sales to private owners.

As currently described in the Corps' biological assessment (Army 1993b), impacts to all affected species would be reduced by preserving populations and habitat through developing and implementing a Habitat Management Plan (HMP). The goal of the HMP would be to conserve listed species in a manner that would reduce the loss of their habitat and promote recovery, and protect candidate species to preclude future listings, when possible, or to provide for local conservation planning for species where a large portion of the range is outside of Fort Ord.

The HMP would be primarily developed by the Corps, with the concurrence of the Service. The HMP would define the habitat values of specific parcels to be transferred or sold by the Army under Revised Alternative 6. Recipients of disposed or transferred lands would be required to follow land use guidelines established in the HMP. Most disposed or transferred lands that are not identified as conservation areas or corridors would be available for development or reuse. Salvage of biological resources may be required on some lands slated for development.

The HMP would also establish guidelines for the management of disposed or transferred lands that are identified as conservation areas or corridors. These measures would include guidelines for avoidance of impacts to certain areas and restoration of disturbed habitats. Detailed methods for protecting and restoring specific habitats and populations will be included in the HMP. As currently planned, the Bureau of Land Management, the University of California, the California Department of Parks and Recreation, and the County of Monterey would receive lands requiring management as conservation areas or corridors (Army 1993b).

Disposal of Unexploded Ordnance and Remediation of Contaminated Sites

Fort Ord is listed on the Environmental Protection Agency's National Priorities List as a Superfund site. The remediation of contaminated sites would be completed prior to their transfer or sale. Clean-up activities would include the remediation of contaminated soils in developed areas of the main base. Because the main base areas containing contaminated soils do not support natural habitat, no adverse effects to listed species are anticipated.

The landfills on the north and south sides of Imjin Road would be capped by removing existing vegetation and placing fill material over the sites. Aboveground treatment facilities for contaminated groundwater would be constructed adjacent to the landfills. As part of the HMP, the Corps is developing mitigation methods to restore sand gilia populations in maritime chaparral habitat at the landfill south of Imjin Road, where it currently occurs at the edges of the site. Under the proposed alternative, the University of California would establish a University Research Area at the landfill site to monitor the effectiveness of remediation and restoration techniques and to serve as a study site.

The beaches at Fort Ord have been used as firing ranges for many years. If ongoing research contracted by the Corps indicates that lead and other heavy metals at the beach firing ranges pose a risk to human health or biological resources, soils contaminated with these metals would need to be removed and

disposed of off-site, incinerated on- or off-site, or encapsulated to prevent further contamination. Soil could also be shifted to remove lead projectiles and returned to the site.

If removal of metals is required, the work sites would be limited to the smallest possible areas that would ensure effective cleaning of the site. All facilities needed to implement the remediation activities, such as access roads and staging areas, would be placed to avoid areas supporting western snowy plovers and sand gilia. Temporary fences would be erected around remediation facilities and timing restrictions would be used to protect listed species during critical periods of the year.

The size of individual remediation sites would be limited to prevent excessive disturbance to any HMP species, which includes the federally listed taxa. Various erosion control techniques would also be implemented to prevent destabilization of the sand dunes. The HMP would contain specific guidelines for the development of site restoration plans for each remediation site. Site restoration plans could include collection and dispersal of seeds of native plants, as appropriate, and would likely resemble restoration efforts conducted at the adjacent Marina State Beach. The Corps would be responsible for restoring native dune vegetation and natural topography in remediated areas to achieve populations of HMP species of at least pre-cleanup condition. The California Department of Parks and Recreation, as the intended recipient of the beach areas, would cooperate with the Corps during restoration efforts.

The inland firing range at Fort Ord occupies approximately 3,000 acres, which contains unexploded ordnance. Surface clearance of the range may require removal of vegetation, location of the materials through visual and electromagnetic means, and disposal of the unexploded ordnance. Subsurface investigations and clearance activities involve the use of metal detectors and ground-penetrating radars to locate magnetic anomalies. Some materials may be excavated and transported off-site. However, the preferred method of disposal of unexploded ordnance is detonation in place.

Effects of the Proposed Action on the Listed Species

Species Account

Fort Ord supports contiguous tracts of biologically diverse and unique lands that remain relatively free from major development or construction projects. The wide range and unusual combinations of climatic, topographic, and soil conditions at Fort Ord support unique biological communities and locally endemic species (Army 1993a). Biological surveys have identified over 250 vertebrate species of wildlife at Fort Ord, including 24 species of reptiles and amphibians, 209 species of resident and

migratory birds, and 28 species of terrestrial mammals (Army 1993a). Two terrestrial mammals and one reptile found at Fort Ord occur primarily on California's central coast and one federally listed endangered butterfly found at Fort Ord occurs almost exclusively in Monterey County.

Botanical surveys have identified over 450 plant taxa at Fort Ord. Ten species of plants known from Fort Ord are endemic to northern coastal Monterey County and adjacent coastal Santa Cruz County. Monterey County serves as the southern and northern limits of distribution for 146 and 156 plant species, respectively (Army 1993a). The presence and status of the special status plant and animal species on Fort Ord have been described in the Flora and Fauna Baseline Study (Army 1992).

The Smith's blue butterfly is endemic to several inland and coastal sand dunes, serpentine grassland, and cliff-side chaparral communities along the central California coast. There are approximately 180 acres of potential habitat available for the Smith's blue butterfly at Fort Ord (Army 1992a). Current populations at Fort Ord exist within coastal strand and dune habitats west of Highway 1 (Army 1992). The species is entirely dependent upon specific host plants, the seacliff buckwheat (Eriogonum parvifolium) and the coast buckwheat (Eriogonum latifolium), for survival. Details of the life history and biology of the Smith's blue butterfly are contained in the Smith's Blue Butterfly Recovery Plan (Service 1984). The habitat at Fort Ord has been identified in the Recovery Plan as important to the recovery of the Smith's blue butterfly.

The western snowy plover currently breeds throughout coastal California, Oregon, and Washington. Monterey Bay is considered one of eight primary nesting areas in coastal California (Service 1993). Western snowy plovers have been observed nesting on the beaches at Fort Ord between Stilwell Hall and the northern boundary during nesting surveys conducted in 1988, 1990, and 1991 (George, D. in: Army 1992a). They may also nest south of Stilwell Hall. Additional information on the western snowy plover is contained in the Final Rule which listed the coastal population of this species as threatened (Service 1993).

The Flora and Fauna Baseline Study has identified only one small population of sand gilia in dune habitats west of Highway 1 and several other populations scattered throughout the base, primarily within chaparral and coastal scrub communities. A second population of sand gilia was identified west of Highway 1 during the spring 1993 surveys. The total acreage of sand gilia habitat at Fort Ord is identified as 3,756 acres. However, actual occupied habitat is only a fraction of this figure, since calculations were based on the acreage of entire surveyed polygons rather than only where populations were within the polygons. The largest populations are at the southwest portion

of Fritzsche Army airfield. Sand gilia seems to require sites that have undergone recent substrate disturbance and occupies areas with loose sandy soils and low cover by other herbaceous and chaparral species. It is found in openings in grassland, chaparral communities and ephemeral drainages. Because certain human activities provide these conditions, sand gilia is also found along roadsides, in recently burned chaparral, and in other disturbed patches. Fort Ord contains approximately 50-70% of the entire range of the sand gilia (Army 1993a). Detailed information on the sand gilia is contained in the Final Rule which listed this species as endangered (Service 1992).

Analysis of Impacts

Disposal and Reuse

The potential impacts on listed species resulting from reuse of Fort Ord were evaluated based on changes in land use which could have direct and indirect impacts on vegetation and wildlife. Direct impacts were considered to include extensive soil excavation or grading, placement of fill material, and burial, trampling, or removal of vegetation; the conversion of biological communities to structures, roads, and landscaping; displacement of species because of temporary or permanent habitat loss; and abandonment of a site by wildlife because of disturbance during critical periods of the year. Some of the proposed land uses could result in the elimination of all biological resources within the land use footprint. Indirect impacts include: predation by domestic pets; disturbance to wildlife by recreationists; soil erosion, resulting in loss of plant habitat or degradation of wetlands; or harassment due to reuse of parcels adjacent to protected parcels.

Nest failures and abandonments by western snowy plovers have been caused by human disturbance under a variety of circumstances (Service 1993), resulting in direct mortality of eggs and chicks. Disturbance from human activity, such as walking, jogging, the presence of pets, and off-road vehicle use in breeding areas, and direct destruction of nest sites and breeding habitat through coastal development and beach raking, are major factors contributing to the decline of coastal western snowy plover populations (Service 1993). Revised Alternative 6 proposes actions that would result in a loss of western snowy plover habitat. Quantification of the amount of habitat that would be lost or conserved is difficult, because the size and location of nesting areas of shorebirds, such as the western snowy plover, can vary from year to year.

Loss of populations of sand gilia may result from off-road travel and other impacts which may occur during base reuse and real estate planning, analyses, and development. Sand gilia is distributed over 3,756 acres of the installation. Of this

acreage, 1,000 acres would be lost through the implementation of Revised Alternative 6, including a loss of 150 acres of habitat that is known to be occupied by sand gilia (Army 1993b).

Throughout its range, populations of the Smith's blue butterfly have declined because of habitat loss and degradation. The major cause of decline has been urban and residential development in dune habitats resulting in the loss of seacliff and coast buckwheat stands, host plants for the Smith's blue butterfly. At Fort Ord, competition with introduced plants and military activities on the dunes have limited the availability of suitable habitat. There are approximately 180 acres of available potential habitat for the Smith's blue butterfly on Fort Ord (Army 1993a). Potential habitat is considered to be areas supporting moderate to high densities of buckwheat plants. Survey results identified eight known locations of the Smith's blue butterfly on Fort Ord, ranging along the entire length of Fort Ord's coastline (Arnold, D. in: Army 1993a). Revised Alternative 6 proposes actions which may result in a loss of approximately one acre of potential habitat (Army 1993b). However, restoration activities that may be implemented by the CDPR could result in the re-establishment of additional Smith's blue butterfly habitat.

After disposal, portions of the lands currently occupied by the Army at Fort Ord would no longer be under Federal management. The Act places different requirements for the management and consideration of listed species on Federal agencies than on non-federal entities. For example, Federal agencies must consider whether any action they undertake may affect any listed plant and animal or critical habitat for these species (50 CFR 402.14). This process allows for close coordination between the Service and Federal agencies and the development of binding reasonable and prudent alternatives or reasonable and prudent measures to avoid a likely jeopardy situation or reduce the take of individual animals when the proposed action is not likely to jeopardize the continued existence of the species, respectively (50 CFR 402.14). Federal agencies must also consider proposed species in their planning processes and enter into conference with the Service if an action is likely to jeopardize the continued existence of a proposed species (50 CFR 402.10(a)). The Act also requires all Federal agencies to use their authorities to further the conservation of listed species.

Non-federal entities are not specifically required to undertake positive conservation measures for listed species. Section 9 of the Act prohibits the take of listed animals, where the definition of take includes "to harass, harm, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Harm is further defined as "an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or

injures wildlife by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering (50 CFR 17.3)." Section 9 also prohibits the removal or reduction to possession of listed plants occurring on Federal land, or the destruction of listed plants in violation of any State laws. Proponents of actions that would result in the destruction of listed plants are required to notify the California Department of Fish and Game (CDFG) ten days prior to the onset of these activities.

Revised Alternative 6 would result in the transfer of most environmentally sensitive areas to Federal and State agencies expected to manage the lands without significant environmental impacts. Less sensitive areas would be transferred to State and local agencies for educational, recreational, airport, business, institutional, and other development uses. Figure 1 and Table 1 identify potential land reuse which would occur under Revised Alternative 6.

The direct, indirect, and cumulative impacts from disposal and reuse are expected to occur over many years. For this reason, the Service also evaluated the potential impacts to candidate species that inhabit Fort Ord. The evaluation of the effects of disposal and reuse on candidate and proposed species is contained in a separate document (enclosure).

Impacts were evaluated in the biological assessment by determining changes in acres of biological communities or habitat for individual species under each reuse alternative. The area of occupied habitat and the estimated percentages of the species' ranges that would be lost as a result of each alternative are identified in the enclosure which evaluates the effects of the various alternatives.

Parcels transferred to Federal agencies: The primary management objective for lands acquired by the Bureau of Land Management (BLM) would be conservation and enhancement of threatened and endangered species. The Service anticipates that these lands would not be opened to the public mining laws or other non-discretionary land laws that could compromise the BLM's ability to meet the primary objective of the management of threatened and endangered species. Inclusion of this basic management guidance by the Corps as a condition of transfer of lands to the BLM would also assist in ensuring that these lands are primarily devoted to the conservation of threatened and endangered species and other biological resources. Because of the BLM's stated goals and management objectives, the Service believes that the sand gilia, which is the only listed species within this area, would benefit from the implementation of Revised Alternative 6.

Section 7 regulations would also require the Department of Justice (DOJ) to consider whether any action it proposes to

undertake may affect a listed species. The DOJ would then be required to consult with the Service, at least informally, on any such action. No direct impacts on biological resources, resulting from the transfer of these lands to DOJ, are expected within the parcels identified as "POST" and "GOVT" in the biological assessment, since these parcels are already disturbed or developed sites (Army 1993b).

Revised Alternative 6 identifies 298 acres of land to be transferred to the California Department of Transportation (Caltrans) for the establishment of a transportation corridor (Army 1993b). This property is within land identified as "Natural Resource Management Area." Depending upon the specific location of the proposed road and the means of constructing it, the establishment of a corridor could result in adverse impacts to listed species. The Federal Highway Administration, because it may fund at least portions of the road construction, would be required to consult with the Service, pursuant to section 7 of the Act.

Parcels transferred to non-Federal agencies: The Corps has described a general mitigation strategy in its biological assessment that would require each local jurisdiction receiving land from the disposal action to implement the HMP which would be developed by the Corps to manage the parcel's biological resources. The development of HMP for the entire Fort Ord disposal area is beyond the scope of the biological evaluation of this opinion, because of the variety of potential uses and the complexity of the resource issues. As previously stated in this biological opinion, the goal of the HMP would be to conserve listed species in a manner that would reduce the loss of their habitat and promote recovery, and protect candidate species to preclude future listings, when possible, or to provide for local conservation planning for species where a large portion of the range is outside of Fort Ord.

With this goal in mind, the HMP is to be developed to support binding legal agreements among the receiving jurisdictions, the Corps, and the Service that would establish detailed plans to manage lands designated for natural resource conservation. The HMP would describe the specific management goals for each parcel and provide detailed procedures for the enhancement, restoration, and management of subject parcels, and methods to fund these activities. The HMP would serve as a management plan for both listed and candidate species and as a pre-listing agreement between the Service and the local jurisdiction for candidate species which may need to be listed because of circumstances occurring outside the area covered by the HMP. The California Department of Fish and Game should be involved in the development of the HMP to the greatest degree possible to ensure the State's concerns are adequately addressed.

Analyses of potential impacts to threatened and endangered species on lands transferred to non-federal agencies are as follows:

Listed plant and animal species that exist within properties which would be transferred to the California Department of Parks and Recreation (CDPR) were considered to be likely to receive high priority during the design and implementation of future management plans for those parcels. One of the goals of the HMP for lands transferred to the CDPR will be to direct future development and recreation into previously disturbed areas and areas currently occupied by iceplant. Consequently, impacts to existing habitat for the Smith's blue butterfly would be largely avoided. Under Revised Alternative 6, approximately 1,000 acres would be transferred to the CDPR. No impacts to sensitive biological resources are expected within the disturbed habitat zone and the coastal dunes zone and, therefore, approximately 960 acres would be managed for the protection of biological resources (Army 1993b).

Restoration activities designed to improve Smith's blue butterfly habitat would also likely be beneficial to sand gilia. The HMP would also address protection of nesting areas for western snowy plovers. Quantification of the amount of western snowy plover habitat that would be conserved is difficult, because the size and location of nesting areas of shorebirds, such as the western snowy plover, can vary from year to year.

Guidelines contained in the HMP would ensure the protection in perpetuity of resources within this area. The potential for take of the Smith's blue butterfly, the western snowy plover, and any candidate species that may be listed would be fully identified during development of the HMP. The means to revise the incidental take limit, which may be necessary because of the long-term nature of the HMP, would be described in detail in that document. After the Corps has transferred the land to the CDPR, revisions to the incidental take limit may need to be undertaken through the Act's section 10(a)(1)(B) permit process.

Approximately 2,566 acres would be transferred to the County of Monterey (County) under Revised Alternative 6. No direct impacts to biological resources are expected within the natural area expansion, the RV park, and 707 acres of the agri-center. Therefore, adverse impacts would occur on approximately 1,557 acres, and the remaining 1,009 acres would be managed for the protection of biological resources (Army 1993b). Although the Biological Assessment states that no direct loss of biological resources would result at the recreational vehicle park, habitat may be degraded in the area from increased use by campers and recreationists. Listed species do not occur within parcels to be transferred to the County of Monterey. However, these parcels support candidate species and are expected to function as

corridors for the movement of genetic materials between other areas inhabited by listed species.

Revised Alternative 6 identifies approximately 1,339 acres to be transferred to the University of California (UC) and 1,210 acres to be transferred to California State University (CSU). Parcels which will be transferred to CSU are already disturbed and will result in no additional loss of biological resources. The Corps has stated that parcels identified in Figure 1 as "URA" would be used by UC as University Research Areas, thus retaining 862 acres as open space with the existing vegetation intact. Direct impacts to the existing resources are expected to occur on the remaining 1,687 acres. Development of future management guidelines for these areas will be required through the HMP to ensure adequate protection of existing populations of sensitive resources. Lands to be managed by the University of California, in the southwest portion of Fritzsche Army airfield, support the largest populations of sand gilia known to occur at Ford Ord.

The Service determined that biological resources within parcels transferred to adjacent cities would be subject to a variety of impacts from construction and public use due to subsequent development projects. For the purpose of this analysis, it is assumed that a complete loss of biological resources would occur in those sections where development is expected. These parcels would generally be transferred to local governments with no covenants, deed restrictions or conservation easements required. Those parcels would be available for total development. At this time, the Service does not anticipate development of any parcels occupied by the Smith's blue butterfly or the western snowy plover. If additional species of animals are listed, the take of listed species within these parcels would be permitted, after issuance of a section 10(a)(1)(B) permit by the Service. Salvage of sensitive biological resources for use in restoration activities within conservation areas may occur from parcels that are likely to be developed. These parcels would be clearly identified in the HMP.

For populations of listed species to remain viable, reproduce, recover, and eventually be removed from the list of threatened and endangered species, the habitat must receive adequate protection. Protected parcels must be adequate in size to protect the individuals from the impacts of predators and human encroachment. The parcels also must allow for expansion of the current population and allow gene flow between individual populations. Small, disjunct, protected pockets of land would not benefit the species if seed dispersal, migration, and genetic variability were not possible between those parcels. Such fragmentation of populations may superficially provide protection of individual plants or animals, but does not promote the long-term survival of a healthy, reproducing population. For these reasons, the protection of biological corridors between protected

parcels is essential. Corridors are of significant biological value and sensitive species within the established corridors should be protected in perpetuity. Revised Alternative 6 identifies two such corridors to link protected parcels: one on the northeastern portion of the installation along the eastern end of Inter-Garrison Road and the other along the southwestern boundary of the installation. Although parcels of land within the corridors are designated for a proposed agri-center and recreational vehicle (RV) park, and for the University of California, adequate amounts of open space and protection of those open spaces will be required within those parcels to support the dynamics of the ecological systems within Fort Ord.

Disposal of Unexploded Ordnance
and Remediation of Contaminated Sites

The effects of remediation on listed species were analyzed with respect to the potential loss of individuals and habitat that would be associated with these activities and the mitigation measures proposed to reduce the impacts of the actions. For example, during surveys conducted in 1993, 5 areas, containing from 2 to 300 individual sand gilia plants each were observed at the edges of the landfill south of Imjin Road. These small populations of sand gilia could be eliminated during remediation of the landfill. However, mitigation measures, being developed in the HMP, would establish procedures for the restoration of sand gilia habitat at the landfill site. Because of the tolerance of this species for openings in maritime chaparral and soil disturbance, the success of the restoration efforts is considered likely.

The Corps is currently contracting studies to determine whether lead and other heavy metals that have been deposited in the dunes through use of the firing ranges pose risks to human health or biological resources. Areas of native habitat within the dunes at Fort Ord are occupied by the western snowy plover, sand gilia, and the Smith's blue butterfly. If removal of these metals is not necessary, disturbance of dune habitats would not be required for this purpose. Habitat disturbance could result from activities designed to restore native habitat; these activities would occur primarily in areas currently occupied by ice plant and would thus not adversely affect listed species.

If lead removal from the dunes is required, the remediation activity would be phased over several years. The size of areas disturbed for remediation at any one time would be limited to prevent excessive disturbance to any one species. Remediation plans would also focus on areas inhabited by the non-native ice plant as initial targets. These areas would then be restored with native species, including sand gilia, host plants for the Smith's blue butterfly, and larvae of the Smith's blue butterfly.

A full description of the remediation and restoration techniques will be contained in the HMP.

The phased approach of remediation activities within the dunes habitat will allow the restoration of areas prior to the disturbance of subsequent remediation sites. Under this approach, restoration techniques can be tested and modified, if necessary, as each phase of the overall project is completed.

The potential adverse effects of remediation of the dunes to the western snowy plover could be significantly reduced by restricting these activities to areas and times when this species is not nesting. Monitoring of the beaches at the onset of the nesting season could be used to determine the location of western snowy plover nests.

Unexploded ordnance within the inland firing range may need to be removed. The inland firing range supports approximately 30% of the occupied habitat and probably less than 10 percent of the individuals of sand gilia at Fort Ord. As noted in the description of the proposed action, removal of unexploded ordnance could result in the burning of maritime chaparral and excavation of soils to depths of up to ten feet. The maritime chaparral community is adapted to occasional natural fires and, therefore, should not be adversely affected by the fires required to expose soils to surface searches. Burning would be conducted to limit any given remediation area to 25 to 100 acres in size, with no more than 800 acres being burned per year.

Small excavations to remove unexploded ordnance should not be detrimental to sand gilia, because the species normally occurs in disturbed soils. Large areas of disturbance associated with deeper excavations or large denotations may cause soil conditions to become unsuitable for sand gilia.

The HMP will also contain specific mitigation and restoration guidelines for removal of unexploded ordnance from the inland ranges. In addition to the phased removal of unexploded ordnance in the mosaic pattern described above, populations of sand gilia would be avoided, when possible, and the seeds of this species would be collected prior to disturbance and spread through areas disturbed by ordnance removal. As is the case for remediation activities in the dunes, the phasing of ordnance removal would allow restoration techniques to be tested over a period of years in relatively small areas to assess their effectiveness. The persistence of sand gilia within the inland ranges through years of live fire training and the subsequent wild fires and soil disturbance seem to indicate that the restoration techniques being proposed are not likely to result in the extirpation of this species.

The Service believes the impacts described above are not likely to jeopardize the continued existences of the sand gilia, western snowy plover, and Smith's blue butterfly. We present this conclusion for the following reasons:

The project description includes mitigation measures to minimize the loss of habitat of sand gilia, western snowy plovers, and Smith's blue butterflies and the take of individual western snowy plovers and Smith's blue butterflies. These mitigation measures include the following:

1. The Corps will prepare, with assistance from the Service and CDFG, a multi-species Habitat Management Plan (HMP). The HMP will be developed and implemented by the Corps, Service, CDFG, and the new land owners and managers to preserve and restore populations and habitat of listed species. The goal of the HMP would be to conserve listed species in a manner that would reduce the loss of their habitat and promote recovery, and protect candidate species to preclude future listings, when possible, or to provide for local conservation planning for species where a large portion of the range is outside of Fort Ord.
2. The HMP will identify conservation areas and corridors which will be preserved in perpetuity to ensure adequate protection for listed, proposed, and candidate species which may be threatened by some reuse proposals. These parcels will be transferred to the County of Monterey, the University of California, and the California Department of Parks and Recreation. Parcels which do not support conservation areas or corridors may be available for future landowners to use at their discretion.
3. Parcels which exist within the delineated conservation areas or corridors will be managed by the new landowner with priority for protection of listed species. Future Federal landowners or landowners with a Federal nexus will develop management plans and consult with the Service under section 7 of the Act to implement their conservation requirements. Local jurisdictions and State agencies (eg., the County of Monterey, the University of California, and the California Department of Parks and Recreation) will provide signatory concurrence of the HMP to ensure adequate management strategies are designed and implemented for the long-term viability of sensitive species.

Cumulative Effects

Cumulative effects are those impacts of future State, local, or private activities on endangered or threatened species or critical habitat that are reasonably certain to occur within the action area of the Federal action subject to consultation.

Future Federal actions are subject to the consultation requirements established in section 7 of the Act, and therefore, are not considered cumulative in the project.

The Service is aware of other actions outside of Fort Ord's boundaries currently approved or under review by the State, county, or local authorities where biological surveys have documented the occurrence of the sand gilia, the western snowy plover, and the Smith's blue butterfly. These projects include urban development, beach maintenance, and recreational use of coastal areas. The cumulative adverse effects of these known actions may preclude the eventual recovery of these species, if measures are not implemented to minimize adverse effects, protect existing populations, and enhance degraded habitat.

Incidental Take

Section 9 of the Act prohibits the take of listed species without special exemption. Taking is defined as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, collecting, or attempting to engage in any such conduct. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering (50 CFR 17.3). Under the terms of sections 7(b)(4) and 7(o)(2) of the Act, taking that is incidental to and not intended as part of the agency action is permitted taking under the Act provided that such taking is in compliance with this incidental take statement. These terms and conditions are nondiscretionary, and must be undertaken by the agency or made a binding condition of any grant or permit, as appropriate.

The Service anticipates that the following take may occur:

1. One (1) adult western snowy plover through inadvertent injury or death during implementation of the HMP.
2. Five (5) western snowy plover nests, including all eggs and nestlings, through inadvertent injury or death during implementation of the HMP.
3. All Smith's blue butterflies on one (1) acre of habitat associated with implementation of the HMP. The Service recognizes that take of individual Smith's blue butterflies may occur incidental to future authorized activities. Therefore, the level of incidental take may need to be adjusted after details of the HMP are developed for the beachfront property of Fort Ord. Quantification of a specific number for incidental take of butterflies is not possible due to the difficulty in determining impacts to larvae and pupae of the species.

The Act does not address the incidental take of listed plant species. However, protection of listed plants is provided as the Act requires a Federal permit for removal and reduction to possession of endangered or threatened plants from areas under Federal jurisdiction. The Act also prohibits any action that would remove, cut, dig up or damage or destroy any such species on any other area in knowing violation of any regulation of any State or in the course of any violation of a State criminal trespass law.

The Service acknowledges that destruction or removal of individual gilia plants would occur in some areas by new landowners during implementation of Revised Alternative 6. This biological opinion has concluded that the loss of sand gilia populations on lands within Fort Ord that are intended for future development, as described in Revised Alternative 6, would not likely jeopardize the continued existence of this species. Once transferred to non-federal ownership, a Federal permit would no longer be required for the removal of these plants, unless required by State law. Coordination of this permit process with the State can be resolved if the HMP is jointly developed and approved by the CDFG.

If, during the course of the action, the amount or extent of the incidental take limit is reached, the Corps or other signatory agencies of the HMP shall immediately notify the Service in writing. If the incidental take limit is exceeded, the Corps or other Federal agencies of the HMP must immediately cease the activity resulting in the take, and re-initiate consultation with the Service to avoid further violation of section 9 of the Act. If the incidental take limit is exceeded on lands which do not have a continuing Federal nexus, the landowner shall contact the Service as described in the HMP. All activities must be stopped in the interim period between the initiation and completion of the new consultation if the Federal agency determines that the impact of the additional taking will cause an irreversible and adverse impact on the species. The Corps or other signatory agencies of the HMP must provide an explanation of the causes of the taking.

Reasonable and Prudent Measures

The following reasonable and prudent measures are necessary and appropriate to minimize incidental take:

1. The take of individual western snowy plovers and Smith's blue butterflies and the loss of habitat of these species shall be minimized through the development of a Habitat Management Plan by the Corps of Engineers, with the assistance of the Service, prior to the disposal of any parcels supporting these species. The HMP shall include measures to minimize the loss of habitat that could result

from activities related to remediation and the removal of unexploded ordnance.

2. The Corps shall advise all future landowners of the prohibition against take of listed species pursuant to section 9 of the Act. The Corps shall implement measures to ensure that unauthorized take does not occur during the time between closure of Fort Ord and the implementation of the HMP.
3. The Corps shall ensure that vehicular traffic which occurs during the base closure process does not result in the loss of listed species.
4. The Corps shall monitor the transfer of lands from U.S. Army management to other Federal and non-federal agencies and report these transfers and disposal actions to the Service annually.

Terms and Conditions

In order to be exempted from the prohibitions of section 9 of the Act, the Corps shall ensure that the following terms and conditions, which implement the reasonable and prudent measures described above, are implemented. The following mitigation measures were developed by the Corps and submitted to the Service with the request for formal consultation. They have been slightly modified herein by the Service:

1. To implement reasonable and prudent measure 1, the following terms and conditions are established:
 - a. To minimize the loss of individuals and habitat of listed species, the Corps shall prepare, with the assistance of the Service and local jurisdictions, an HMP for the entire installation. The goal of the HMP shall be to conserve listed species in a manner that would reduce the loss of their habitat and promote conservation and enhancement of the species, and protect candidate species to preclude future listings, when possible, or to provide for local conservation planning for species where a large portion of the range is outside of Fort Ord. Such conservation and enhancement measures do not refer to specific actions identified in existing recovery plans, but to specific actions which may be identified and included the HMP. Development of the HMP shall be initiated immediately and shall be completed by the time the parcel is transferred to the local jurisdiction. Federal agencies, such as the Bureau of Land Management, shall be required to state, in the letter of transfer, whether the subject parcel(s) support listed species, and acknowledge that they are required to formally consult with the Service to ensure

compliance with section 7 of the Act. The HMP shall contain the following goals and objectives:

1. The HMP shall require avoidance of impacts to listed species and restoration of disturbed habitat for these species within delineated conservation areas or corridors, whenever possible.
2. The HMP shall identify conservation areas and corridors which shall be conserved in perpetuity to ensure adequate protection for listed species which may be threatened by reuse.
3. Parcels which exist within the delineated conservation areas or corridors shall be managed by the new landowner with priority for protection of listed species. Future Federal landowners or landowners with a Federal nexus shall develop management plans and consult with the Service under section 7 of the Act to implement their conservation requirements. Local jurisdictions and State agencies (eg., the County of Monterey, the University of California, and the California Department of Parks and Recreation) shall provide signatory concurrence of the HMP to ensure adequate management strategies are designed and implemented for the long-term viability of sensitive species.
4. The HMP shall clearly establish who will be responsible for the monitoring operations, maintenance activities, and status surveys of listed species for protected areas within each area of jurisdiction. The HMP shall also clearly define the agency responsible for any expenses that may be incurred by these activities. In general, the new land owners would be expected to bear the cost of management of the biological resources on the parcel.
5. The Corps shall include a condition that lands acquired by BLM shall not be opened to the public mining laws or other non-discretionary land laws that could compromise the BLM's ability to meet the primary endangered species management objective of that property.
6. Remediation activities within dune habitat shall be conducted in a manner that will avoid or minimize the adverse effects of the actions on listed species. The Corps shall include specific measures in the HMP to mitigate the effects of remediation with the assistance of the Service, prior to the onset of remediation activities.

2. To implement reasonable and prudent measure 2, the following terms and conditions are established:

a. The Corps shall advise future landowners of the prohibition against take of listed species pursuant to section 9 of the Act. Recipients of disposed Fort Ord lands shall be required to follow the land use guidelines in the HMP. Additionally, the Corps shall advise future landowners that if take of a federally listed species is anticipated within their newly owned parcels during any non-federal action, the landowner shall obtain necessary authorization with the Service under section 10(a)(1)(B) of the Act prior to undertaking any activity likely to result in take.

3. To implement reasonable and prudent measure 3, the following terms and conditions are established:

a. The Corps shall include a condition to restrict vehicular use to existing roads only in the transfer or sale of all parcels that contain habitat for listed species designated to remain protected. This restriction also applies to parcels which are transferred to other Federal agencies. Appropriate means shall be undertaken to educate public users of Fort Ord about the prohibition against off-road vehicle travel. While in caretaker status, the Corps shall be responsible for ensuring these restrictions are enforced. Such means shall include one or more of the following: the posting of signs or the distribution of information at the appropriate informational offices.

4. To implement reasonable and prudent measure 4, the following terms and conditions are established:

a. The Corps shall submit to the Service an annual report which details completed activities and results of the endangered species protection program for the previous year. The report shall include: summaries of land transfers that have occurred; occurrences of incidental take, if any, including known harassment; acres of listed species habitat eliminated or restored; problems encountered in implementing mitigation measures; pertinent results of biological surveys and sighting records; and any other pertinent information. The report shall be postmarked or submitted by January 31 of each calendar year and the Service shall be notified in the case of a delay. The annual reporting requirement shall be discussed in the HMP and shall be transferred at the time of signing of the HMP to the new land manager, if appropriate.

Disposition of Sick, Injured, or Dead Specimens

Upon locating a dead, injured, or sick individual of an endangered or threatened species, initial notification must be given to the Service's Division of Law Enforcement Office in Sacramento at (916) 978-4861 and the Ventura Field Office

(805/644-1766 or FAX 818/904-6288) immediately and in writing within three working days. Care should be taken in handling sick or injured specimens to ensure effective treatment 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. Notification must include the date, time, and location of the carcass, and any other pertinent information. Any endangered or threatened species found dead shall be turned in to the CDFG unless authorized agreements have been made with the CDFG to the contrary. The CDFG contacts are David Showers in Sacramento at (916) 653-9779 and Bruce Elliot in Monterey at (408) 649-2870.

Conservation Recommendations

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. The term conservation recommendations has been defined as Service suggestions regarding discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information. The recommendations provided here relate only to the proposed action and do not necessarily represent complete fulfillment of the agency's responsibility under section 7(a)(1) for this species.

1. Due to the large number of candidate and endemic species found primarily within Fort Ord, the Service encourages the Corps to also consider these species during the base closure and alternative selection process. The Service has analyzed impacts of the proposed alternatives identified in the Draft EIS and supplied that information in a separate document to the Corps for review.
2. The Service encourages the Corps to include all recommendations made by the Service for proposed, candidate, and endemic species on Fort Ord within the HMP developed with recipients of Fort Ord lands. Inclusion of these species within the HMP would allow these documents to be considered as pre-listing conservation agreements between the Service and the local agency. Such agreements would preclude the need to develop additional mitigation measures, should the species be listed, or could eliminate the need to list such species as threatened or endangered.
3. To ensure adequate protection of endangered, threatened, proposed, and candidate species that currently exist with Fort Ord lands, the Service encourages the Corps to consider adoption of an alternative which will have the fewest adverse effects on

these sensitive populations and will ensure their long term protection.

In order for the Service to be kept informed of actions that either minimize or avoid adverse effects or that benefit listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

Conclusion

This concludes formal consultation on the closure and reuse of Fort Ord. Reinitiation of formal consultation is required if: 1) the amount or extent of incidental take is reached; 2) new information reveals effects of the agency action that may adversely affect listed species or critical habitat in a manner or to an extent not considered in this biological opinion; 3) the agency action is subsequently modified in a manner that causes an effect to a listed species or critical habitat that was not considered in this biological opinion; or 4) a new species is listed or critical habitat designated that may be affected by this action (50 CFR 402.16). Emergency procedures for section 7 consultation are defined at 50 CFR 402.05.

The Service understands that more detailed information regarding conservation and development proposals is likely to become available during writing of the HMP. Such new information will likely result in a need to reinitiate formal consultation at the conclusion of the HMP. Informal consultation among the Service, Corps, and other HMP agencies should greatly facilitate the reinitiation process.

The Service greatly appreciates the cooperation of your staff and we look forward to continued coordination in this effort. Any questions or comments should be directed to Mr. Ray Bransfield of my staff at (805) 644-1766.

Sincerely,



Craig Faanes
Field Supervisor

Enclosure

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- U.S. Army Corps of Engineers. 1992a. Flora and Fauna Baseline Study of Fort Ord, California. December 1992. With technical assistance from Jones & Stokes Associates, Inc. (JSA 90-214). Sacramento, California.
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- U.S. Army Corps of Engineers. 1993a. Fort Ord Disposal and Reuse Biological Assessment. February 1993. Sacramento District. With technical assistance from Jones & Stokes Associates, Inc. (JSA 90-214.) Sacramento, California.
- U.S. Army Corps of Engineers. 1993b. Supplement to the Draft Fort Ord Disposal and Reuse Biological Assessment. April 1993. Sacramento District. Sacramento, California. With technical assistance from Jones & Stokes Associates, Inc. (JSA 90-214.) Sacramento, California.
- U.S. Fish and Wildlife Service. 1984. Smith's Blue Butterfly Recovery Plan. Fish and Wildlife Service, Portland, Oregon.
- U.S. Fish and Wildlife Service. 1992. Six Plants and Myrtle's Silverspot Butterfly From Coastal Dunes in Northern and Central California Determined to Be Endangered. Federal Register Vol. 57, No. 120. Final Rule. June 22, 1992.
- U.S. Fish and Wildlife Service. 1993. Determination of Threatened Status for the Pacific Coast Population of the Western Snowy Plover. Federal Register Vol. 58, No. 42. Final Rule. March 5, 1993.

Table 1. Revised Alternative 6

Land Use Category	Specific Land Use	Acreage
Open Space		16,267
	Coastal dunes zone	* 421
	Natural resource management area	* 14,931
	Natural area expansion	* 53
	University research area	* 862
Parks and Recreation		2,076
	Disturbed habitat zone	* 538
	Multi-use area	29
	Recreation area expansion	? 1,123
	Community park	29
	Service area	11
	Fairgrounds	97
	RV park	? 249
Commercial/Business Park		829
	Office park	352
	University science office park	477
Industrial		1,773
	Agri-Center	? 890
	Airport	? 837
	Corporate yard	46
Institutional/ Public		1,419
	Post academy	39
	University	1,210
	Fire training	79
	Government offices	36
	Transit center	55
Residential	McKinney Act Housing	133
Other		1,773
	Army-proposed POM Annex	1,463
	Reserve Center	12
	Transportation corridor	298
No Proposed Use		3,456
TOTAL		27,726

Key: Areas marked by an asterisk (*) would be managed primarily for natural resource values.

Areas marked by a question mark (?) would not be managed primarily for natural resource values, but should continue to support viable populations of listed species in conjunction with adjacent habitat.

Alternatives Analysis
for
Biological Opinion (1-8-93-F-14)
Fort Ord Disposal and Reuse

Prepared by
U.S. Fish and Wildlife Service
Ventura Field Office

August 1993

Biological Resources

Fort Ord contains many biological resources that receive various levels of protection under local, State, or Federal laws, regulations, or policies. These resources include federally and State listed endangered and threatened plant and wildlife species, special native biological communities, native plant and butterfly reserves, significant natural areas, and the Monterey Bay National Marine Sanctuary. Other resources have been identified as being rare and possibly in need of future protective status.

Jones & Stokes Associates, Inc. conducted botanical and biological surveys on Fort Ord in the spring of 1992 which identified the following proposed, candidate, and endemic species within the installation.

This enclosure to the referenced biological opinion evaluates the effects of the alternatives contained in the draft environmental impact statement for the disposal and reuse of Fort Ord on listed, proposed, and candidate species of that base. The potential effects of the alternatives on the sensitive taxa of Fort Ord were analyzed in a manner similar to the that conducted in the biological opinion for Revised Alternative 6. As a basis for the analysis of each alternative, the areas occupied by each sensitive species at Fort Ord were considered in relation to the full extent of the range of the species. Each alternative was then analyzed to determine the extent that implementation of the action would result in the conservation or loss of habitat for listed, proposed, and candidate species.

Table 1. Special-Status Plant Species Identified at Fort Ord during 1992 Surveys and the Importance of Fort Ord Populations

Plant Species	Listing Status Fed/State	Approximate Percent Range at Fort Ord	Importance of Fort Ord Population
Sand gilia <u>Gilia tenuiflora</u> ssp. <u>arenaria</u>	E/T	50-70	Fort Ord constitutes a substantial portion (at least half) of the entire range of sand gilia
Monterey spineflower <u>Chorizanthe pungens</u> var. <u>pungens</u>	PE/--	75-95	Fort Ord supports the largest populations of Monterey spineflower known
Robust spineflower <u>Chorizanthe robusta</u> var. <u>robusta</u>	PE/--	<1	Fort Ord does not provide extensive habitat for this species, but includes southern range limit of this species.
Seaside bird's beak <u>Cordylanthus rigidus</u> var. <u>littoralis</u>	C1/E	30-50'	A substantial portion of the range of this plant is found at Fort Ord
Toro manzanita <u>Arctostaphylos montereyensis</u>	C2/--	70-90	Fort Ord supports the largest expanse of Toro manzanita in existence
Sandmat manzanita <u>Arctostaphylos pumila</u>	C2/--	70-90	Fort Ord contains a large and important part of the range of sandmat manzanita
Hickman's onion <u>Allium hickmanii</u>	C1/--	<5	Some suitable habitat is found on Fort Ord but this species has many occurrences outside Fort Ord
Monterey ceanothus <u>Ceanothus rigidus</u>	C2/--	50-70	The most abundant and probably most vigorous population of Monterey ceanothus is found on Fort Ord
Eastwood's ericameria <u>Ericameria fasciculata</u>	C2/--	70-90	Fort Ord supports most of the remaining individuals of Eastwood's ericameria

¹/This estimate incorporates locations of Seaside bird's beak in Santa Barbara County, which may have formed as a result of hybridization; the estimate based on Monterey County alone would increase the percent of range at Fort Ord to 60-80%.

(Table 1 continued) Common and Scientific Names	Listing Status Fed/State	Approximate Percent of Range at Fort Ord	Importance of Fort Ord Population
Coast wallflower <u>Erysimum annophilum</u>	C2/--	10-30	Fort Ord provides a moderate amount of suitable habitat for coast wallflower and may constitute an important portion of its range because of the limited extent and high degree of disturbance to its habitat in California
Wedge-leaved horkelia <u>Horkelia cuneata</u> ssp. <u>sericea</u>	C2/--	<10	Wedge-leaved horkelia is widely distributed in 4 coastal counties; Fort Ord likely comprises only a small part of its range
Yadon's piperia <u>Piperia yadoni</u>	-- ² /--	<1	Less than 1% of the individuals of Yadon's piperia are found on Fort Ord, but they represent a "link" between more northern and southern populations
Hooker's manzanita <u>Arctostaphylos hookeri</u> ssp. <u>hookeri</u>	CNPS 1b	13-35	Fort Ord supports large populations and important habitat of Hooker's manzanita

Notes: Due to the dynamic nature of the listing process, the listing status designations should not be considered static, and may change in the very near future.

-- = No designation

E = Endangered

T = Threatened

PE = Proposed Endangered

C1 = Category 1: Taxa for which the U.S. Fish and Wildlife Service has sufficient biological information to support a proposal to list as endangered or threatened.

C2 = Category 2: Taxa which existing information indicates may warrant listing, but for which substantial biological information to support a proposed rule is lacking.

SSC=California Department of Fish and Game species of special concern.

Table 2. Federally Listed, Proposed, and Candidate Terrestrial and Freshwater Wildlife Species Known to Occur or Potentially Occurring at Fort Ord and the Importance of the Fort Ord Population

Common and Scientific Name	Listing Status Fed/State	Approximate Percent of Range at Fort Ord	Importance of Fort Ord Population
Smith's blue butterfly <u>Euphilotes enoptes smithi</u>	E/--	5-10	Fort Ord has been identified as important to the recovery of Smith's blue butterfly
Peregrine falcon <u>Falco peregrinus anatum</u>	E/E	<1	Peregrine falcons occasionally occur at Fort Ord to forage or during migration; Fort Ord is not essential to the recovery of the species
California linderiella <u>Linderiella occidentalis</u>	PE/--	<1	Fort Ord comprises little of the total range of California linderiella; however, vernal pool habitat is relatively rare in the Monterey Bay region
Western snowy plover <u>Charadrius alexandrinus nivosus</u>	T/SSC	5-10	Fort Ord supports one of 20 coastal breeding populations of western snowy plovers in California; Monterey Bay as a whole is considered one of eight primary coastal nesting areas
California black legless lizard <u>Anniella pulchra nigra</u>	C2/SSC	10-20	Fort Ord supports one of less than 20 confirmed black legless lizard populations
Monterey dusky-footed woodrat <u>Neotoma fuscipes luciana</u>	C2/--	1-5	Fort Ord provides high-quality habitat for Monterey dusky-footed woodrat in the extreme northern portion of the species range
Monterey ornate shrew <u>Sorex ornatus salarius</u>	C2/--	15-25	Fort Ord provides abundant potential habitat for Monterey ornate shrew within the species' limited range
California tiger salamander <u>Ambystoma tigrinum californiense</u>	C2/SSC	<1	Fort Ord comprises little of the total range of California tiger salamander; however, vernal pool habitat is relatively rare in the Monterey Bay region
California red-legged frog <u>Rana aurora draytoni</u>	C1/SSC	<1	Fort Ord comprises little of the species' total range; however, Fort Ord provides potential habitat for California red-legged frog, which is relatively rare within the Monterey Bay region

(Table 2 continued) Common and Scientific Name	Listing Status Fed/State	Approximate Percent of Range at Fort Ord	Importance of Fort Ord Population
Southwestern pond turtle <u>Clemmys marmorata pallida</u>	C1/SSC	<1	Fort Ord comprises little of the species' total range; however, Fort Ord provides potential habitat for western pond turtles, which are relatively rare in the Monterey Bay region
Tricolored blackbird <u>Agelaius tricolor</u>	C2/SSC	<1	Fort Ord comprises little of the species' total range; however, one of few breeding colonies in the region occurs at Fort Ord
California horned lark <u>Eremophila alpestris actia</u>	C2/--	<1	Fort Ord composes little of the species' total range; Fort Ord does not provide important habitat for this species
Loggerhead shrike <u>Lanius ludovicianus</u>	C2/--	<1	Fort Ord composes a very small amount of the total range of loggerhead shrike; Fort Ord does not provide important habitat for this species

Notes: Due to the dynamic nature of the listing process, the listing status designations should not be considered static, and may change in the very near future.

-- = No designation

E = Endangered

T = Threatened

PE = Proposed Endangered

C1 = Category 1: Taxa for which the U.S. Fish and Wildlife Service has sufficient biological information to support a proposal to list as endangered or threatened.

C2 = Category 2: Taxa which existing information indicates may warrant listing, but for which substantial biological information to support a proposed rule is lacking.

SSC=California Department of Fish and Game species of special concern.

The Service has completed an analysis of all alternatives identified in the Draft Environmental Impact Statement. Potential impacts to candidate species are also analyzed for these alternatives, because large portions of the ranges of some species are located at Fort Ord. Failure to protect adequate populations of these candidate species now will most likely result in their being added to the list of threatened and endangered species in the future. Data referred to in the alternatives analysis are identified in Tables 1 and 2 and Appendix I of this document.

The total acreages of sand gilia habitat and Monterey spineflower habitat at Fort Ord are identified as 3,756 acres and 10,474 acres, respectively (Army 1992a) and these figures are used in the following alternatives analysis. However, actual occupied habitat is only a portion of these figures, since calculations were based on the acreages of entire surveyed polygons rather than only where populations were within the polygons.

Under Alternative 1, approximately 80% of the currently undeveloped portion of the installation is proposed for development (Army 1992b). The alternative contains many land use proposals that would be incompatible with maintaining populations of sensitive species and their habitats that would likely be viable on a long-term basis. Several listed and candidate species would be adversely affected in a significant manner and this alternative would have adverse effects on riparian habitats and wetlands.

Alternative 1 would result in a loss of approximately 12,600 acres of maritime chaparral and coastal scrub habitat, including 3,620 acres of sand gilia habitat (Army 1993a). In addition, approximately 9,980 acres of habitat occupied by Monterey spineflower would be lost (Army 1993a). Many facilities are proposed for construction within the sensitive coastal dune habitat, such as a cultural center, aquaculture facility, Asilomar-type facility, and an RV park. Nesting success of the federally threatened western snowy plovers would be adversely affected by activities associated with coastal development and increased public use of beaches. There would be a loss of approximately 40 acres of Smith's blue butterfly habitat, 94% of the black legless lizard habitat, 96% of the Monterey dusky-footed woodrat habitat, and 87% of the Monterey ornate shrew habitat (Army 1993a). Additional impacts are proposed within the biologically sensitive Fritzsche Airfield area.

The proposed protected areas are inadequate in size and location to ensure the long-term viability of the species and their habitats within the Fort Ord area. On the contrary, this alternative could lead to the future accelerated listing of several additional species. This alternative conflicts with

Federal and State policies on the protection of wetlands and the protection of endangered and threatened species.

Alternative 2 proposes development for approximately 70% of the undeveloped portion of Fort Ord (Army 1992b). As with alternative 1, inconsistencies exist regarding proposed land uses which are incompatible with maintaining long-term, viable populations of sensitive species and their habitats. This alternative would result in significant losses of habitat for federally listed, proposed, and candidate plants and animals, including a loss of 14% of Smith's blue butterfly habitat, 70% of the black legless lizard habitat and a loss of 30-50% of the known range of sand gilia (Army 1992b). Implementation of alternative 2 would result in a loss of 5,760 acres of habitat occupied by Monterey spineflower and substantial losses of Toro manzanita, sandmat manzanita, Monterey ceanothus, Eastwood's ericameria, coast wallflower, and Hooker's manzanita, resulting in these species potentially becoming eligible for Federal listing as threatened or endangered. This alternative conflicts with Federal and State policies on the protection of wetlands and the protection of endangered and threatened species.

Alternative 3 proposes to develop approximately 25% of the currently undeveloped portion of the installation. This alternative proposes inconsistent development patterns, including inadequate protection of sensitive environments and habitats. For instance, construction of a high tech business park and general agriculture is proposed for areas north of Reservation Road, where sand gilia, Monterey spineflower, sandmat manzanita, Monterey ceanothus, Eastwood's ericameria, and coast wallflower occur. Little protection of these areas is proposed. Nesting success of western snowy plovers would be adversely affected by increased public use of the beaches, and public use of dune habitats could also degrade habitat for the Smith's blue butterfly and the black legless lizard.

This alternative would result in the elimination of approximately 50% of the Monterey ornate shrew habitat, 37% of the available black legless lizard habitat, and three of the eight known California tiger salamander breeding ponds at Fort Ord. In addition, 10-30% of the known range of sand gilia and 15-40% of the known range of Monterey spineflower would be lost (Army 1993b). Alternative 3 designates 7,631 acres as No Proposed Use (NPU). Lands designated as NPU should not be considered as protected areas or mitigation for proposed development areas, however, because NPU lands could be subject to development in the future. Therefore, the Service does not believe that the biological resources within NPU lands will receive protection under Alternative 3. This could result in the potential listing of additional species. This alternative conflicts with Federal and State policies on the protection of wetlands and the protection of endangered and threatened species.

Under Alternative 4, approximately 30% of the undeveloped portion would be developed. It would result in the loss of 5-20% of the known range of sand gilia, the loss of 10-30% of the known range of Monterey spineflower, and the loss of 5-20% of the known range of sandmat manzanita. As stated in Table 2, a large and important part of the range of sandmat manzanita is found on Fort Ord and the installation supports the largest populations of Monterey spineflower known. Because of limited ranges of the black legless lizard and Monterey ornate shrew, habitat losses under Alternative 4 could hasten both species being elevated to threatened or endangered status. Many facilities are proposed within the sensitive coastal dune habitat, such as a service area, multi-use area, weather station, and disturbed habitat zone. Nesting success of the federally threatened western snowy plover would be adversely affected by activities associated with coastal development and increased public use of beaches. This alternative would result in the loss of approximately 15 acres of Smith's blue butterfly habitat and the loss of approximately 9 acres of California linderiella habitat. This alternative does not propose adequate protection of sensitive environments and habitats and conflicts with Federal and State policies on the protection of wetlands and the protection of endangered and threatened species.

Alternative 5 proposes that most of the installation remain in open space. Approximately 1% of the currently undeveloped portion of the installation is proposed for development. This alternative would result in the least adverse effects to sensitive plants and animals. The loss of 15 acres of habitat occupied by sand gilia, the loss of 1 acre of habitat occupied by Smith's blue butterfly, and the loss of 110 acres occupied by Monterey spineflower would result. A large portion of the installation is proposed as Natural Resource Management Area (NRMA) or as No Proposed Use. Lands designated as NPU should not be considered as protected areas or mitigation for proposed development areas, however, because NPU lands could be subject to development in the future. Therefore, the Service does not believe that the biological resources within NPU lands will receive protection under Alternative 5. As stated in the accompanying biological opinion, areas which are intended to provide protection of existing plants and animals in perpetuity should be interconnected to provide biological corridors between them.

Under Alternative 6, approximately 30% of the currently undeveloped portion of the installation is proposed for development. This alternative would result in a loss of 10-25% of the known range of the sand gilia and a loss of 15-40% of the known range of the Monterey spineflower. In addition, alternative 6 would result in the loss of approximately 10%, 15%, 10%, and 10% of the populations of Toro manzanita, sandmat manzanita, Monterey ceanothus, and Eastwood's ericameria,

respectively. Sensitive coastal dunes habitat would be adversely affected, including the loss of 2 acres of Smith's blue butterfly habitat. Approximately 59% of the available Monterey ornate shrew habitat and roughly 33% of the black legless lizard habitat would be eliminated. Because of limited ranges of the these two species, habitat losses under this alternative could hasten both species being elevated to threatened or endangered status. This alternative does not propose adequate protection of sensitive environments and habitats and conflicts with Federal and State policies on the protection of wetlands and the protection of endangered and threatened species.

Revised Alternative 6 is evaluated fully in the biological opinion.

Literature Cited

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