U.S. Department of the Interior
Fish and Wildlife Service
California/Nevada Refuge Planning Office

FINDING OF NO SIGNIFICANT IMPACT

Comprehensive Conservation Plan for
Kern and Pixley National Wildlife Refuges
Kern and Tulare Counties, California

The U.S. Fish and Wildlife Service (Service) has completed the Comprehensive Conservation Plan (CCP) and the Environmental Assessment (EA) for Kern and Pixley National Wildlife Refuges (Refuges). The CCP will guide management of the Refuges for the next 15 years. The CCP and EA (herein incorporated by reference) describe the Service's proposals for managing the Refuges and their associated effects on the human environment under four alternatives, including the no action alternative.

Decision

Following comprehensive review and analysis, the Service selected Alternative C for implementation because it is the alternative that best meets the following criteria:

- Achieves the mission of the National Wildlife Refuge System.
- Achieves the purposes of the Kern and Pixley Refuges.
- Will be able to achieve the vision and goals for the Refuges.
- Maintains and restores the ecological integrity of the habitats and populations on the Refuges.
- Addresses the important issues identified during the scoping process.
- Addresses the legal mandates of the Service and the Refuges.
- Is consistent with the scientific principles of sound wildlife management and endangered species recovery.
- Facilitates priority public uses which are compatible with the Refuges' purposes and the Refuge System mission.

Alternatives Considered

Following is a brief description of the alternatives for managing Kern and Pixley Refuges, including the selected plan (Alternative C). For a complete description of each alternative, see the draft EA.

Alternative A

Under Alternative A, the Service would continue to manage Kern and Pixley Refuges as it has in the recent past, guided by the Master Plans adopted in 1986. The focus at Kern Refuge would be to provide wintering habitat for migratory waterfowl and other migratory birds, and opportunities for waterfowl hunting. The Pixley Refuge focus would be to contribute to the recovery of targeted special status species and provide wintering habitat for migratory birds.

The Service would continue to manage wetland units at both Refuges using water level manipulation and periodic vegetation management. In addition, the Service would manage 63 percent of the flooded wetland habitat at Kern Refuge, and the entire wetland habitat at Pixley Refuge, as sanctuary (closed area). Grazing would be used at both Refuges to manage upland habitat for the federally-listed endangered Tipton kangaroo rat and blunt-nosed leopard lizard.

Existing hunting opportunities would be maintained including 11 spaced blinds and 2,183 acres of free roam hunt area. The Service would also continue to maintain its existing six-mile auto tour route. The public would continue to have year-round access to the interpretive trail and observation platform adjacent to the wetlands units at Pixley Refuge. Refuge staff would also continue to offer a small number of guided tours to schools and service groups.

Current staffing and funding needs for both Kern and Pixley Refuges would remain the same. This Alternative was not selected for implementation because it does not include needed improvements in

migratory bird and special status species management and it does not accommodate the growing demand for wildlife-dependant recreation.

Alternative B
Under Alternative B, the focus of both Kern and Pixley Refuges would remain the same but existing programs would be improved and expanded. Management of wetland and upland habitats at both Refuges would remain the same as under Alternative A, with a few exceptions. The Service would rehabilitate units 7 and 8 at Kern Refuge to improve habitat conditions and water management efficiency. The size of the wetland sanctuary at Kern Refuge would be reduced to 30 percent of the flooded wetland habitat. Funding would be sought for two new engineering equipment operators to help maintain the Refuge's wetland habitat. Furthermore, the Service would discontinue maintenance of summer water in the eastern portion of unit 1 for colonial nesting species and reduce the density of the vegetation to improve habitat conditions for waterfowl. The Service would complete and implement a land protection plan that explores protection and enhancement of Tulare Basin wetlands and associated uplands. In addition, the Service would plant and maintain seven acres of new riparian habitat at Kern Refuge and five acres at Pixley Refuge.

Under Alternative B, the hunting program on Kern Refuge would be substantially expanded by opening an additional 187 acres to free-roam hunting and 1,330 acres to hunting from 18 new designated blinds. In addition to the current hunt days—Wednesdays and Saturdays—the Refuge would be opened to hunting on Sundays. The Service would also hire a full time law enforcement officer to protect public safety and enforce wildlife laws. The current limited outreach, environmental education, and interpretation programs would be expanded. A visitor services plan would be developed and implemented and funds for a full time outdoor recreation planner would be requested. Under this Alterative, the Service would also survey, identify, and evaluate cultural and historic sites within planned development areas.

This alternative was not selected because it would provide a lower level of protection and management for special status species, it would contribute less to regional biodiversity, and it would not accommodate the growing demand for non-consumptive recreation.

Alternative C (Selected Plan)
Under Alternative C, the selected plan, management focus at Kern Refuge will continue to emphasize providing wintering habitat for waterfowl and other migratory birds, but will also focus on contributing to the recovery of targeted special status species. Pixley Refuge's focus will remain the same as Alternative A, but existing programs will be improved and expanded. Management of wetland and upland habitats at both Refuges will be similar to Alternative B, with a few exceptions. Unit 7b will be rehabilitated as a managed seasonal marsh (in addition to units 7 and 8). The Service will manage 55 percent of the flooded wetland habitat as sanctuary. Summer water will continue to be maintained in the eastern portion of unit 1 for colonial nesting birds. In addition, a 272-acre grain unit will be developed on Pixley Refuge to provide forging habitat for sandhill cranes and geese. The Service will have an objective to eradicate 90 percent of the salt cedar on Kern Refuge within 10 years. In addition, the Service will restore 440 acres of valley sink scrub habitat and 15 acres of riparian habitat at Kern Refuge, and 10 acres of riparian habitat at Pixley Refuge. The Service will also develop and implement a grassland management plan and a comprehensive surveying and monitoring plan. Surveys for special status species, waterfowl, shorebirds, waterbirds, and raptors will be expanded.

Visitor services will be improved and expanded under Alternative C. For example, hunting opportunities on Kern Refuge will be increased by opening an additional 540 acres to hunting, and constructing nine new hunting blinds. Other major new visitor services projects under this alternative include: developing new interpretive signs, displays, and a new Refuge brochure; enhancing the pond at the Refuge entrance and constructing a new kiosk and boardwalk; constructing a new 4.3-mile tour route (open every day); and constructing two new photo blinds. In addition, a new wildlife viewing area and interpretive displays will be constructed on the Turkey Tract adjacent to State Highway 43 at Pixley Refuge focusing on sandhill crane ecology and wildlife friendly farming. The Service will also seek to hire a full time outdoor recreation planner and a full time law enforcement officer.

This alternative was selected because it includes needed improvements in migratory bird and special status species management and makes an important contribution to regional biodiversity. It also provides a balanced mix of compatible wildlife-dependant recreation opportunities to meet the growing demand in the region. Implementation of this alternative will require additional staff and funding.

Alternative D
This alternative changes the focus of both Refuges to maximizing native biodiversity and contributing to the recovery of targeted special status species. It also focuses on non-consumptive visitor services such as: wildlife observation, photography, environmental education, and interpretation. Under Alternative D, wildlife and habitat management programs would be similar to Alternative C, with the following exceptions. Under Alternative D, the management of moist soil units would be substantially modified to maximize diversity of native food plants and improve habitat for shorebirds. In addition, the Service would pursue historic hydrologic conditions by continuously fluctuating water levels in the moist soil units in winter and early spring. The size of the sanctuary at Kern Refuge would be increased to 80 percent of the flooded wetland habitat. Under Alternative D, the Service would restore 30 acres of riparian habitat at Kern Refuge and 20 acres at Pixley Refuge.

Major new visitor services programs at Kern Refuge would be the same as Alternative C, with the following exceptions: an additional 7.4-mile auto tour route would be constructed, and the free roam hunt area would be reduced by 47 percent, from 2,183 acres to 1,165 acres. The Refuge would continue to be open to hunting on Wednesdays and Saturdays only. At Pixley Refuge, a new parking lot off Road 83, and a vernal pool foot trail in the Two Well Tract would also be developed.

Alternative D was not selected because the substantially reduced hunt area would not be large enough to meet the growing demand for this use at Kern Refuge. In addition, the enlarged sanctuary would probably draw waterfowl away from duck clubs in the Tulare Basin. Without waterfowl to hunt, these important private wetlands would likely be converted to other non-wetland uses as has occurred in the past.

Effects of management of the Refuges on the human environment

As described in the EA, implementing the selected alternative will have no significant impacts on any of the environmental resources identified in the EA. A summary of the impacts analysis and conclusions follows:

Soils
Construction activities associated with the rehabilitation of wetland units and salt cedar removal at Kern Refuge could result in large areas of bare soil that could be subject to erosion. However, because construction will occur during the dry season, and the terrain is flat, and dust control practices will be used, any erosion is expected to be minor and localized. Under the selected plan, the Service will pursue acquisition of the remaining undeveloped lands within Pixley Refuge's approved boundary, including about 340 acres labeled Farmland of Statewide Importance by the California Department of Conservation. If all 340 acres were purchased, retired, and restored to native uplands, this would represent a loss of Farmland of Statewide Importance in Tulare County of less than one tenth of one percent. Furthermore, this loss would be offset by the conversion of 310-acres of nonnative grasslands (in the Turkey Tract Unit) to a cultivated grain field.

Water Quality
Under the selected plan, the Service will plant about 25 acres of riparian vegetation along canals at Kern and Pixley Refuges. Plantings will occur during the winter when the canal is full. As a result, soils disturbed during the planting could enter the canal to the wetland cells adjacent to the restoration area and temporarily increase its turbidity. However, since the water in the canal is not flowing, any sediment suspended in the water will drop out quickly. As a result, this impact is not considered significant.

Air Quality
Under the selected plan, both short and long-term increases in pollutant emissions are expected. Short term increases in dust (PM10) and tailpipe emissions will result from projects which disturb the soil and/or require the use of heavy equipment. Long-term increases in emissions would result from the growing number of vehicular trips to, from, and on the Refuges as visitation increases. Prescribed fire is another potential source of PM10 emissions. Under the selected plan, fire will be used on a limited basis to control vegetation in the wetland units, as described in the Refuges' Fire Management Plan. In the context of current poor air quality conditions in the San Joaquin Valley air basin and likely worsening in the future, and with the mitigation measures described in the EA, the minor emission increases are not considered significant.

Vegetation
Management under the selected plan will have minimal adverse impacts on vegetation and will result in several beneficial impacts. The Service will complete the rehabilitation of wetland units 7, 7b, 8 and 14, which will increase the cover of native wetland vegetation on Kern Refuge. The Service will use herbicides to treat salt cedar in all riparian and upland units at Kern Refuge and mechanical removal and flooding in seasonal marsh units. This will have a beneficial effect on the Refuge's vegetation because it would improve the cover of native plant species. However, both herbicides could affect non-target plants through drift and runoff, or leaching from the roots of treated plants. These potential effects will be minimized by closely following label application instructions. Under the selected plan, the Service will plant 15 acres of riparian vegetation at Kern Refuge and 10 acres at Pixley Refuge. In addition, the Service will restore 440 acres of valley sink scrub at Kern Refuge. These projects will have a small beneficial effect on local and regional biodiversity, because both of these plant communities have been eliminated from most of their historic range. Under the selected plan, the Service will also develop a 272-acre grain unit on the Turkey Tract, an area currently dominated by nonnative annual grasses. Nonnative grassland is relatively common in the Tulare Basin so this impact is not considered significant.

Wildlife
Implementation of the selected plan will result in numerous beneficial impacts and potentially some adverse impacts on wildlife. The rehabilitation of wetland units 7, 7b, 8, and 14 could temporarily disturb and/or displace wildlife in these units. However, once the rehabilitation work is completed, there will be a long-term benefit to waterfowl, shorebirds, and other waterbirds due to improved habitat quality. Salt cedar treatment and removal at Kern Refuge could also temporarily disturb wildlife. However, it will have a long term beneficial effect on the Refuge's wildlife because it would improve the cover of native plant species that are higher value to native wildlife. Under the selected plan, the Service will plant 15 acres of riparian habitat on Kern Refuge and 10 acres at Pixley Refuge. This will benefit the variety of wildlife that use this habitat, including raptors, songbirds, and colonial nesting birds. In addition, the Service will restore 440 acres of saltbush scrub vegetation which would benefit a variety of upland birds, including quail and mourning dove.

Under the selected plan, the Service will allow local mosquito abatement districts to monitor and control mosquitoes on the Refuges. The primary agent used to treat mosquitoes will be *Bacillus thuringiensis israelensis* (Bti). The bacterium Bti is a microbial insecticide that, when ingested, is toxic to mosquitoes, black flies and some chironomid species. Chironomids and other insects are probably an important part of the diet of pintail and green-winged teal in late winter and spring. Methoprene, an insect growth regulator, is also used. It interferes with the normal maturation process of mosquitoes and can also kill aquatic beetles and backswimmers. However, during the fall and early winter, when most mosquito control on the Refuges could occur, pintail and teal feed mostly on seeds. As a result, the impact of mosquito control is not considered significant. If efforts to control immature mosquitoes fail, and mosquito-borne disease is detected within or near the Refuges, and a public health emergency is declared by State or county officials, adulticides may also be used.

As a result of the visitor services improvements included in the selected plan and regional population growth, visitation is expected to increase substantially to 15,500 visits per year for Kern Refuge, and 3,000 visits per year for Pixley Refuge. The wetland sanctuary area would be reduced by 13 percent to 3,431 acres. The

growing recreational use will increase the level of disturbance for birds and other wildlife that use the Refuges. However, given that most of Kern and Pixley Refuges are closed to public use, there is sufficient sanctuary for wildlife, so this impact is not considered significant. The take of migratory waterfowl is expected to increase by 30 percent under this alternative to about 10,000 ducks per season. This is less than one percent of the total ducks harvested State-wide each year and is not considered significant.

Threatened and Endangered Species
Under the selected plan, the federally-listed endangered blunt-nosed leopard lizard, Tipton kangaroo rat, and threatened mountain plover would continue to benefit from the Service's efforts to improve the habitat quality of the uplands through upland vegetation management including grazing. These species could also benefit when the Service restores 440 acres of valley sink scrub vegetation on Kern Refuge. In addition, the Service would pursue acquisition of approximately 3,200 acres of remaining undeveloped lands from willing sellers within Pixley Refuge's approved boundary. This effort would contribute to the recovery of blunt-nosed leopard lizard, Tipton kangaroo rat, and endangered San Joaquin kit fox by permanently protecting and linking disconnected Refuge habitats. Furthermore, the endangered Buena Vista Lake shrew could benefit from the Service's restoration of 25 acres of riparian habitat at Kern and Pixley Refuges.

Habitat for the blunt-nosed leopard lizard and Tipton kangaroo rat may be affected when the Service rehabilitates seasonal marsh units. Some small, isolated upland areas within these units may have provided marginal habitat for the blunt-nosed leopard lizard and Tipton kangaroo rat in the past. However, they have been inundated occasionally during larger flood events, such as the one that occurred in 1998. As a result, the blunt-nosed leopard lizard and Tipton kangaroo rat are no longer expected to inhabit this area.

The endangered blunt-nosed leopard lizard could be affected by the increase in visitors to the Refuges over time because it is active during the day and could be vulnerable to encounters with automobiles and other vehicles along the tour route. However, most Refuge visitors come during the cold fall and winter months when leopard lizards are inactive. The San Joaquin kit fox and Tipton kangaroo rat are both active at night when the Refuge is closed. As a result, this impact is not considered significant.

In its amended biological opinion (USFWS 2004b) on the CCP, the Service concluded that implementing the selected plan "is not likely to jeopardize the continued existence of the San Joaquin kit fox, blunt-nosed leopard lizard, Tipton kangaroo rat, vernal pool fairy shrimp, and Buena Vista Lake shrew, and is not likely to destroy or adversely modify designated critical habitat."

Visitor Services
Under the selected plan, the Service will improve and expand all visitor services on the Refuges. Hunting opportunities will be increased by opening an additional 540 acres to free roam hunting, and constructing nine new hunting blinds. Other major visitor services projects in the selected plan include: developing new interpretive signs and displays; publishing a new Refuge brochure; enhancing the pond at the Refuge entrance; constructing a new kiosk and boardwalk; constructing a new 4.3-mile tour route to be open every day; and constructing two new photo blinds. At Pixley Refuge, a wildlife viewing area and interpretive displays will be constructed on the Turkey Tract adjacent to State Highway 43. Visitation is expected to increase substantially over the 15-year life of the CCP, to about 15,500 visits per year at Kern Refuge, and 3,000 visits per year at Pixley Refuge.

Public Review

The planning process incorporated extensive public involvement in developing and reviewing the CCP. This included two public workshops, four planning updates, and public review and comment on the planning documents. The details of the Service's public involvement program are described in the CCP and EA.

Conclusions

Based on review and evaluation of the information contained in the supporting references, I have determined that implementing Alternative C as the CCP for management of Kern and Pixley National Wildlife Refuges is not a major Federal action that would significantly affect the quality of the human environment, within the meaning of section 102(2)(c) of the National Environmental Policy Act of 1969, as amended. Accordingly, the Service is not required to prepare an environmental impact statement.

This Finding of No Significant Impact and supporting references are on file at the U.S. Fish and Wildlife Service, Kern National Wildlife Refuge Complex, 10811 Corcoran Road, Delano, California, 93216 (telephone 661-725-2767) and U.S. Fish and Wildlife Service, California/Nevada Refuge Planning Office, 2800 Cottage Way, Sacramento, California, 95825 (telephone 916-414-6504). These documents can also be found on the Internet at http://pacific.fws.gov/planning/. These documents are available for public inspection. Interested and affected parties are being notified of this decision.

Supporting References

U.S. Fish and Wildlife Service. 2004. *Comprehensive Conservation Plan and Environmental Assessment, Kern and Pixley National Wildlife Refuges.* Sacramento, California.

U.S. Fish and Wildlife Service. 2004. *Amendment to Internal Formal Section 7 Consultation on Wetland/Riparian Enhancement and Endangered Species Management Actions, Within Comprehensive Conservation Plan, on Kern and Pixley National Wildlife Refuges, Kern and Tulare Counties, California. (1-1-04-F-2579).* Sacramento, California.

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9/30/2004

Date