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In Reply Refer To:
AESO/SE
02-21-05-F-0231 February 15, 2005

Memorandum

To: Refuge Manager, Imperial National Wildlife Refuge, Fish and Wildlife Service, Yuma, Arizona

From: Field Supervisor

Subject: Prescribed Burns on Imperial National Wildlife Refuge at Field 13 and Triangle, Yuma County, Arizona

Thank you for your request for intra-Service consultation with the Arizona Ecological Services Office (AESO) of the U.S. Fish and Wildlife Service (FWS) pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). Your request for formal consultation was dated January 28, 2005 and received by us on January 31, 2005. At issue are impacts that may result from two prescribed burns on the Imperial National Wildlife Refuge (INWR) in Yuma County, Arizona. The listed species of concern are the Yuma clapper rail (*Rallus longirostris yumanensis*), southwestern willow flycatcher (*Empidonax traillii extimus*), bald eagle (*Haliaeetus leucocephalus*), California brown pelican (*Pelecanus occidentalis californicus*), and razorback sucker (*Xyrauchen texanus*). The mountain plover (*Charadrius montanus*), a species proposed for listing, and the yellow-billed cuckoo (*Coccyzus americanus*), a candidate for Federal listing, are also found in the vicinity of the proposed action. Critical habitat for the razorback sucker includes the Colorado River and the 100-year floodplain in the vicinity of INWR. Proposed critical habitat for the southwestern willow flycatcher is also in the vicinity of the proposed action.

You requested our concurrence that the proposed action is not likely to adversely affect the southwestern willow flycatcher, bald eagle, and razorback sucker. No effects to critical habitat for the razorback were identified, and no effects to proposed critical habitat for the southwestern willow flycatcher are anticipated. You also found the proposed action would not affect the California brown pelican and mountain plover and is not likely to jeopardize the yellow-billed cuckoo. We concur with these findings. Our justification is found in Appendix A to this biological opinion. In this biological opinion, we analyze effects of the proposed action on the Yuma clapper rail only.

This biological opinion is based on information provided in the January 28, 2005, intra-Service section 7 biological evaluation form and other sources of information. Literature cited in this biological opinion is not a complete bibliography of all literature available on the species of

concern, use of prescribed fire in marsh management and its effects, or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at this office.

Consultation History

- Consultation on prescribed burns for Field 11 and the Headquarters Pond on INWR was done in 2003. Consultation on prescribed burns for Field 12 and Island Lake was done in 2004. The action under consultation reviewed herein is for similar activities in 2005.

- AESO received the request for formal consultation with the biological evaluation on January 31, 2005.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The proposed action consists of two prescribed burns on INWR: Field 13 and Triangle. The Fish and Wildlife Service Arizona Fire Team will conduct the prescribed burns. The burn plans provided with the intra-Service consultation form provide details on how and when the burns would be conducted, the safety measures to be employed, and contingency plans should the burns move out of control. Those documents are incorporated herein by reference. The burns would be conducted in February, with provisions to allow burning as late as March 14, 2004.

Field 13

Field 13 is a 10-acre prescribed burn to eliminate overgrown cattails and phragmites. The perimeter of the field will be mowed to act as a fire line, and a sprinkler system will be placed along the boundary with Field 12 to prevent the fire from moving out of the treatment area. Fields 11 and 12 adjacent to Field 13 will be flooded prior to the burn to reduce the risk of fire spreading into them. The burn will be considered successful if 50-100 percent of the vegetation is removed.

The purpose of this burn is to improve habitat for the Yuma clapper rail and is part of a future rotational management program for Fields 10-14. This area is also a study site for the ongoing research on the effects of prescribed fire in marsh habitats for management of clapper rail habitat. Prescribed fire or mechanical removal will be used to remove most or all of the vegetation in these fields on a 5-year cycle to keep the cattail habitat (*Typha* sp.) from becoming so dense that clapper rails are not able to use it. Portions of the fields may also be treated as needed if exotic or invasive plants are present. The only portion of the rotational management under consultation is the burning of Field 13 in 2005. Previous consultations have covered Fields 11 and 12.

Triangle

The area to be burned at Triangle is 45 acres. The purpose of this prescribed burn is to eliminate existing saltcedar, phragmites, and dense cattail to provide for cattail marsh development and establishment of native riparian vegetation on the site. At the western edge of the unit, a buffer zone 50-feet wide will be cleared of vegetation prior to the burn and a sprinkler system placed in the buffer zone to reduce the risk of the fire spreading out of the treatment area. A 50-foot wide buffer zone will be established on the north end of the site. No buffer zones are needed on the south or east sides. A successful burn will remove 50-100 percent of the vegetation. This burn would improve habitat for the Yuma clapper rail; however, the focus is on the re-sprouting of native willow species after burning.

STATUS OF THE SPECIES (RANGE-WIDE)

The Yuma clapper rail was listed as an endangered species on March 11, 1967, under endangered species legislation enacted in 1966 (Public Law 89-669). Only populations in the United States were listed, those in Mexico were not. There is no critical habitat for the species. The Yuma Clapper Rail Recovery Plan (USFWS 1983) was signed in 1983. The Yuma clapper rail is protected under the Migratory Bird Treaty Act (MBTA).

The Yuma clapper rail is a marsh bird found in dense cattail or cattail-bulrush marshes along the LCR from the Southerly International Boundary to the lower Muddy River and Virgin River in Utah above those rivers' confluence with Lake Mead. Significant populations are found in the Imperial Valley near and around the Salton Sea in California, and along the lower Gila River and Phoenix Metropolitan area in Arizona. The populations in Mexico are found along the LCR in the delta, marshes associated with tributaries to the LCR, and the Cienega de Santa Clara (Hinojosa-Huerta *et al*. 2000). Survey detections for the United States habitats have fluctuated between 467 and 907 over the last 10 years (USFWS survey data). Those figures represent birds counted, and are not statistical population estimates. The population in Mexico was estimated statistically at 6,300 birds in 2000 (Hinojosa-Huerta *et al.* 2001), but declined to an estimated 4,850 by 2002, likely due to overgrowth of cattails (Hinojosa-Huerta *et al*. 2003). Changes in water flow between 2002-2003 improved habitat quality and counts of rails increased.

Yuma clapper rails may be somewhat migratory, although the extent to which birds move seasonally is not known. They are capable of significant movements, and dispersal away from existing population centers is a source of individuals to augment or initiate outlier populations.

Life history information for the species is summarized in the Recovery Plan (USFWS 1983) and other papers (Todd 1986, Eddleman 1989). No significant new life history information has been developed since these papers were published; however, basic information on the potential of adverse effects to reproductive success relating to selenium concentrations in habitats occupied by clapper rails has been developed (Andrews *et al.* 1997, Garcia-Hernandez *et al.* 2001, King *et al.* 1993, 2000, 2003; Roberts 1996).

Threats to the Yuma clapper rail population in the United States include the loss of marsh habitats to channelization or other river maintenance, lack of long-term management of existing marshes to maintain their suitability as habitat, lack of protection for habitat areas related to land ownership and water supply issues, and the presence of environmental contaminants such as selenium in the LCR and Salton Sea.

Since 1983, AESO has processed 34 formal section 7 consultations involving the Yuma clapper rail. Of the 34 formal consultations, 15 were completed prior to 1991, and most of these involved Bureau of Reclamation (Reclamation) dredging, bank stabilization, and dike construction projects, and general management plans by BLM along the LCR and lower Gila River. Habitat losses due to Reclamation activities were offset by the creation of mitigation areas and backwaters as part of these projects. From 1991-2005, the 19 formal consultations involved use of prescribed fire to benefit habitat and management plans for wildfire, permits under section 404 of the Clean Water Act, and large-scale agency plans by Reclamation, BLM, and Environmental Protection Agency (EPA). There was one jeopardy opinion issued for the rail. The Roosevelt Habitat Conservation Plan in Gila County, Arizona, is the only completed section 10(a)(1)(B) permit that includes the species (USFWS 2003).

The FWS-Carlsbad Fish and Wildlife Office processes informal and formal consultations concerning the Yuma clapper rail in California. Many of these address issues with irrigation system maintenance and other projects in the Imperial Valley. A formal consultation for a geothermal plant adjacent to the Sonny Bono Salton Sea National Wildlife Refuge was recently completed. The most significant recent formal consultation addressed Reclamation's voluntary fish and wildlife conservation measures and associated conservation agreements with California water agencies in 2002 (USFWS 2002). This consultation is connected to the 400,000 afy water exchanges that were the subject of consultation between FWS-AESO and Reclamation (USFWS 2001) and address effects to listed species near the Salton Sea from water conservation actions of IID. Reclamation and state partners will fund the conservation measures (USFWS 2002).

ENVIRONMENTAL BASELINE

The environmental baseline includes past and present impacts of all Federal, State, or private actions in the action area, the anticipated impacts of all proposed Federal actions in the action area that have undergone formal or early section 7 consultation, and the impact of State and private actions which are contemporaneous with the consultation process. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform to assess the effects of the action now under consultation.

Description of the action area

The INWR encompasses 25,625 total acres and includes native upland desert, riparian, marsh, and aquatic communities as well as non-native riparian (salt cedar) and moist soil units managed for wildlife. Active and passive management of the various vegetation communities is practiced as appropriate to achieve wildlife goals.

Field 13 is within the farmlands unit of the refuge and contains extremely dense cattail stands with areas of phragmites. Triangle is north of the farmlands units and borders the Colorado River on the west. The proposed burn area is dominated by dense cattail, phragmites, and salt cedar.

Status of the species within the action area

The Yuma clapper rail is found in the LCR action area wherever suitable cattail marsh habitat is found. Because of the existing stabilization of the LCR, the creation and destruction of marsh habitats characteristic of the pre-development river no longer occur. More permanent marshes have formed at suitable areas along the LCR. However, as these marshes age and become overgrown or otherwise lose water area, the amount of habitat available declines. This changing habitat quality, largely to do accumulation of dead cattail stalks that reduces access within the stand and accretes material that raises the area above the water level, has a significant effect on local populations over the short term. Because of this variability, only the most recent annual survey data (2000-2004) are used to describe the current status of the species in the LCR action area. Survey effort over this period was reasonably consistent between areas on the LCR. The annual surveys provide an estimate of the minimum number of birds present, and do not provide an actual population estimate.

Based on data from annual survey efforts over the last 5 years, the LCR supports between 35% and 48% of the total birds surveyed in those years (Table 1) (USFWS survey data). Of the birds recorded from the LCR, the total found on National Wildlife Refuges (NWRs) ranged from 51% to 75% over this period. These habitats are secure from development or other disturbances; however, they are subject to declines in habitat quality due to accumulation of dead plant material. The other two significant habitat areas for the species are the marshes of the Imperial Division outside of the Imperial NWR, and the marshes in the Laguna Division immediately downstream of Imperial Dam.

Annual surveys for Yuma clapper rails are conducted on INWR. Data from 1993-2003 are presented in the biological evaluation. Survey data from 2004 are also available. The prescribed burns would occur before the breeding season of the clapper rail and adult birds will have completed their molt and will be able to fly. Field 13 is part of the Farmfields survey route and seven rails were documented on the burn site in 2004. These numbers represent a decline from 2003 (16 birds). Another six rails were in adjoining fields. Yuma clapper rails have not been recorded at the Triangle burn site.

Factors affecting species environment within the action area

All extant cattail habitats in the LCR action area are subject to declines in habitat quality through overgrowth of the marsh and the subsequent accumulation of dead plant material. Prior to the LCR being controlled, normal flow patterns cyclically created and destroyed marsh habitats and reduced the likelihood a marsh would be static long enough to become choked with dead plant material. These processes no longer function, and many marshes in the LCR action area have declined in quality as dead material accumulated. Wildfires, either lightning- or human-caused,

are a significant risk to clapper rail habitats, because they can burn during breeding seasons and are uncontrolled in their extent. A study evaluating the use of prescribed fire to burn marshes and remove accumulated material to restore habitat quality is currently underway on the LCR and Salton Sea areas. The managed fire does not kill the cattail roots, but does eliminate the dead vegetation on the surface. Initial results indicate that, when habitats where clapper rail use has declined due to overgrowth are burned, clapper rails return to the areas within a year once new growth of cattails appears and clapper rail numbers in the restored habitat increase. Active burn programs under this study are in place on Havasu and Imperial NWRs. Unlike wildfires that may occur at any time, these programs plan for burns outside of the clapper rail breeding and molting season to reduce adverse effects.

Other threats to the Yuma clapper rail in the LCR include selenium contamination of the forage base, noise and other disturbance from recreational activity, and elimination of habitat for development. The significance of existing selenium levels to Yuma clapper rail reproduction is not known; however, the levels of selenium in clapper rail habitats are high enough to be of concern (Roberts 1996, Andrews *et al.* 1997, King *et al.* 2000, 2003; Garcia-Hernandez *et al.* 2001). There is no current evidence that reproductive failures have occurred; however, no specific research looking for eggs and young birds to evaluate the potential for effects has been conducted.

Implementation of the 1983 recovery plan in the LCR action area includes the multi-agency cooperative survey and efforts to define proper management for clapper rail habitat and eventually provide continuity for such management in written management plans. Development of management plans for the FWS refuges on the LCR is in preliminary stages.

Federal and non-Federal activities have had significant adverse effects to the Yuma clapper rail. Construction of the large dams eliminated many miles of floodplain habitats due to the formation of lakes. Changes in flows, elimination of overbank flooding, and channelization of the river disconnected the river from the floodplain and eliminated the cycle of creation for marshes on the floodplain and along the secondary channels. Prior to this, the amount of marsh present on the LCR at any one time varied greatly, and the cycle of creation, aging, and destruction was based on river flows. The creation of the small diversion dams, especially Laguna and Imperial dams, provided stable water levels behind them where marshes could become permanently established. Whether or not there is more marsh available now than in the past is uncertain. The certain thing is that the marshes that are present now are more permanent. However, even these marshes will eventually be destroyed by high flows that deposit sediments but are unable to scour other areas to create new marshes and backwaters. Further, marshes age and become dryer land with the accumulation of sediments and dead plant materials that raise the ground surface above the water. Many marshes in the LCR exhibit this aging process. Because the natural cycle of creation and destruction is not operating, without active human interference through fire, dredging, or other management, these areas will cease to be marshes that can support Yuma clapper rails. The most significant areas of habitat for rails on the LCR are in Federal ownership and are protected from development pressures. Active management is necessary to provide for the long-term continuance of these marshes due to natural aging.

A change to salinity and selenium concentrations in LCR waters also has the potential for adverse effects to rails and their habitats. Small backwaters and marshes with high evaporation rates often have very high salinities that can affect the ability of cattails and bulrush to grow. Cattails generally will not grow at over 5,000-ppm salinity (Sanchez *et* al. 2000). Salinity levels can also affect the forage base in these areas. Selenium is known to interfere with successful reproduction in rail species, and while no such effects have been documented on the LCR, the levels of selenium now present in some areas are high enough to be of concern for reproduction. The change from more transient marshes and backwater to the more permanent ones characteristic of the LCR today may also have affected the local concentrations of selenium and the degree of possible exposure to the rail population. If there has been an increase in selenium in the LCR, and that trend continues because of the current pattern of river management, adverse effects to reproductive success may begin to appear. Differences in selenium concentrations between connected and isolated backwaters (Velasco and Marr 2003) and the relative value of those different habitats for rails is an issue for investigation.

The changed physical conditions also support invasive plant and animal species that may affect rails. The introduction of crayfish (*Procamberus* sp.) to the LCR provided the rails with a significant new food resource, although it is one that accumulates selenium in its tissues. Crayfish also have significant adverse effects on fish and other invertebrate populations, so any value of the crayfish to the rails may have been offset by the reduction in those natural forage bases. The spread of non-native plants, such as giant reed (*Arundo donax*) and, most recently, giant salvinia (*Salvinia molesta*), affects habitat quality and the ability of the rails to use the habitat available. Rails do not appear to select areas of giant reed, and replacement of native cattail and bulrush by these species would reduce the amount of available habitat. Salvinia is an invasive water plant (a member of the fern family) that prefers quiet waters and may grow into mats a foot or more thick that choke shallow waters and prevent access to the substrate by bottom-feeding birds such as rails. Very contaminated areas may also be anoxic much of the time, and not support invertebrate populations.

EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action that will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur.

Direct and Indirect Effects

The prescribed burns at INWR would temporarily eliminate habitat for the Yuma clapper rail in the areas burned. The cattails will grow back, beginning in the 2005-growing season, and habitat

values will be restored. The burns would take place prior to the breeding season, and clapper rails displaced by the fires would have time and adjacent habitat to set up nesting territories for the 2005 season. Efforts to protect adjacent habitat from the spread of fire are part of the proposed action and serve to limit the risk to these areas.

The occupied habitat at Field 13 will be burned in this action. In 2004, seven rails were documented in Field 13. Survey information indicates that clapper rails in the entire Farmfields area move among the areas of suitable habitat, with differences in rail locations seen between surveys (in the same year as well as different years), so the exact number of clapper rails that may be present is unknown. Effects would be from the elimination of habitat, with adjacent fields containing rails and rail habitats subject to increased noise from the fire crews and equipment and possibly some smoke passing over the area (depending on wind conditions).

Pre- and post-burn monitoring of clapper rail habitat and use of the burned areas will be accomplished as part of an ongoing research project led by Dr. Courtney Conway of the Cooperative Fish and Wildlife Research Unit at University of Arizona. The use of prescribed burns to manage clapper rail habitat over the long-term is the focus of the research. Results will guide habitat management for clapper rails in the future.

Interrelated and Interdependent Effects

No interrelated or interdependent effects have been identified for the proposed action.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Because the action area is entirely within the boundaries of a National Wildlife Refuge, we have determined that there are no cumulative effects.

CONCLUSION

After reviewing the status of the Yuma clapper rail, the environmental baseline for the action area, the effects of the proposed prescribed burns, and the cumulative effects, it is our biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the Yuma clapper rail.

This finding is based on the following factors:

- The prescribed burns will not permanently remove clapper rail habitat and will contribute to the long-term maintenance of suitable habitat on INWR.

- Substantial amounts of suitable habitat remain adjacent to the areas to be burned to provide habitat for resident clapper rails until the burned areas recover.

- The proposed action will not take place during the breeding season for the clapper rails, so no chicks would be at risk. The proposed action would also take place at a time when the adults are able to fly and escape a localized fire.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4 (d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined (50 CFR 17.3) to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. "Harass" is defined (50 CFR 17.3) as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns, which include, but are not limited to, breeding, feeding or sheltering. "Incidental take" is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the INWR so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The INWR has a continuing duty to regulate the activity covered by this Incidental Take Statement. If the INWR (1) fails to assume and implement the terms and conditions or (2) fails to require the applicant to adhere to the terms and conditions of the Incidental Take Statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the INWR must report the progress of the action and its impact on the species to the AESO as specified in the Incidental Take Statement [50 CFR§402.14(i)(3)].

Amount or extent of the take

The FWS anticipates that up to 7 individual Yuma clapper rails may be taken as a result of the prescribed burns. This take is based on the highest number of individual clapper rails documented in surveys of Field 13 from 1993-2003. The incidental take is expected to be in the form of harassment from the temporary elimination of habitat. Within this number, up to two individuals may be killed if they are unable to escape the flames, or are affected by heat and smoke. Up to an additional 10-20 rails may be disturbed by noise and smoke during the burn itself. These effects will be transitory and are not likely to result in permanent effects to clapper rails in the area.

Effect of the take

In this biological opinion we determine that this level of anticipated take is not likely to result in jeopardy to the Yuma clapper rail.

REASONABLE AND PRUDENT MEASURES AND TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the Act, the INWR must comply with the following terms and conditions, which implement the reasonable and prudent measures and outline reporting/monitoring requirements. These terms and conditions are non-discretionary. The proposed action contains adequate measures to reduce the extent of the take. These include the timing of the prescribe burns, the on-site preparation to contain the extent of fire to the desired areas, and the plan to immediately suppress fires that escape the prescription. We have not identified any additional measures that would further reduce the extent of the take.

Review requirement

If, during the course of the action, the level of incidental take is exceeded, such incidental take would represent new information requiring review. The INWR must immediately provide an explanation of the causes of the taking and review with the AESO the need for reasonable and prudent measures.

Disposition of dead or injured listed species

Upon locating a dead, injured or sick listed species initial notification must be made to the FWS Law Enforcement Office in Mesa, Arizona, within three working days of its finding. Written notification must be made within five calendar days and include the date, time, and location of the animal, a photograph if possible, and any other pertinent information. The notification will be sent to the Law Enforcement Office with a copy to this office. Care must be taken in handling sick or injured animals to ensure effective treatment and care, and in handling dead specimens to preserve the biological material in the best possible state.

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. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

We have identified no conservation recommendations for this proposed action.

REINITIATION NOTICE

This concludes formal consultation on the action outlined in the request. As provided in 50 CFR§402.16, reinitiation of formal consultation is required where discretionary Federal involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitats in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

We appreciate INWR's efforts to identify and minimize effects to listed species from this project. For further information, please contact Jeff Whitney (602) 242-0210 (x204) or Lesley Fitzpatrick (x236). Please refer to the consultation number 02-21-05-F-0231, in future correspondence concerning this project.

/s/ Steven L. Spangle

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (ARD-ES)
Director, Fish and Wildlife Service, Arlington, VA
Field Supervisor, Fish and Wildlife Service, Carlsbad, CA

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Regional Supervisor, Arizona Game and Fish Department, Yuma, AZ
Supervisor, California Department of Fish and Game, Blythe, CA

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TABLE

Table 1: Number of Yuma clapper rails recorded during surveys, 2000-2004, on the LCR and showing relevant percentages in relation to total birds surveyed and to birds surveyed on LCR. Survey data is from USFWS files.

YEAR	2000	2001	2002	2003	2004
Total birds surveyed rangewide (USA only)	477	531	608	830	907
Total birds on LCR	230	221	212	345	347
% birds on LCR vs total birds	(48%)	(42%)	(35%)	(42%)	(38%)
Total birds on National Wildlife Refuges on LCR	117	140	136	202	259
% birds on Refuges vs total birds	(24%)	(26%)	(22%)	(24%)	(29%)
% birds on Refuges vs LCR total	(51%)	(63%)	(64%)	(59%)	(75%)
Total birds in Imperial Division outside of Imperial NWR	23	17	13	21	22
% birds in ID vs LCR total	(10%)	(8%)	(6%)	(6%)	(6%)
Total birds in Laguna Division	90	53	60	119	63
% birds in LD vs LCR total	(41%)	(24%)	(27%)	(37%)	(18%)

Appendix A: Concurrences

Southwestern willow flycatcher

We concur with the finding of "may affect, not likely to adversely affect" for the flycatcher from the proposed action. The prescribed burns would not affect habitat for the southwestern willow flycatcher. Only migrating flycatchers have been recorded on INWR and the burns would be completed before any migrants arrive in May and June.

Bald eagle

We concur with the finding of "may affect, not likely to adversely affect" for the eagle from the proposed action. Bald eagles winter along the Colorado River and use riparian areas with tall trees for roosting and foraging perches. The prescribed burns would not directly affect these habitats; although the smoke and noise could be a disturbance to any eagles in the area. This disturbance is not considered significant.

Razorback sucker

We concur with the finding of "may affect, not likely to adversely affect" for the razorback from the proposed action. Razorbacks are found in the open waters of the INWR, and due to their preference for backwaters, may utilize the open water on the Colorado River. The burn there may temporarily affect water quality in the pond, but this effect is not likely to be significant enough to result in a fish kill. If a helicopter is needed to suppress fires, there is a risk for a razorback being taken as the water bucket is filled, but this risk is discountable since it is extremely unlikely to occur. No effects to critical habitat are anticipated.

Yellow-billed cuckoo

We concur with the finding of "not likely to jeopardize" for the cuckoo from the proposed action. Cuckoo habitat will not be affected by the proposed action, and, as a migratory species, individuals are not present on the INWR during February and early March.

Mountain plover

We concur with the finding of "no effect" for the mountain plover from the proposed action. This species has not been observed on the INWR and the types of habitat preferred by the species would not be affected by the proposed action.

California brown pelican

We concur with the finding of “no effect” for the California brown pelican from the proposed action. The pelican is a transitory species on the INWR and is most often observed in late summer, not early spring. The open water habitats used by the pelican would not be directly affected by the proposed action. Filling of the helicopter water bucket could disturb any pelicans in the area; however, it is not likely that any would be present.