United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington, D.C. 20240

In Reply Refer To:
FWS/AES/DMBM/

Memorandum

To: Attn > Assistant Director, Migratory Birds and State Programs

8/24/09 X Concurrence

From: Chief, Division of Migratory Bird Management

Subject: Section 7 Consultation on the Proposed 2009-2010 Migratory Game Bird Hunting Regulations

This document transmits the U.S. Fish and Wildlife Service's biological opinion based on our review of the proposed rule for the 2009-2010 Migratory Game Bird Hunting season, including Indian Tribal proposals, for any possible effects to endangered, threatened, proposed, and candidate species in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act).

We believe that there are potential adverse effects to the endangered whooping crane *(Grus americana)* and the Steller's eider *(Polysticta stelleri)*. It is our biological opinion that the proposed regulations will not jeopardize the continued existence of the whooping crane or the Steller's eider or adversely modify or destroy their designated critical habitat. However, we believe that the proposed regulations have the potential to cause some incidental take of whooping cranes and Steller's eiders.

Based upon Regional Office comments, the proposed regulations are not likely to adversely affect the following species or destroy or adversely modify their critical habitat: akiapolaau, Attwater's greater prairie-chicken, Audubon's crested caracara, black-capped vireo, brown pelican (Pacific Coast population), brown pelican (Gulf Coast population), brown pelican (Puerto Rican/Virgin Islands population), cactus ferruginous pygmy-owl*, California clapper rail, California condor*, coastal California gnatcatcher*, California least tern, Canada lynx, Cape Sable sparrow*, Eskimo curlew, Everglade snail kite*, Florida grasshopper sparrow, Florida scrub jay, golden-cheeked warbler, Hawaii creeper, Hawaiian goose, Inyo California towhee*, Ivory-billed woodpecker, Kirtland's warbler, least Bell's vireo*, least tern (Interior population), lesser prairie-chicken, light-footed clapper rail, marbled murrelet*, masked bobwhite quail, Mexican spotted owl*, Mississippi sandhill crane*, northern aplomado falcon, northern spotted owl*, palila, piping plover (Atlantic Coast population), piping plover* (Great Lakes population), piping plover* (Northern Great Plains population), Puerto Rican broad-winged hawk, Puerto Rican nightjar, Puerto Rican parrot,

Puerto Rican plain pigeon, Puerto Rican sharp-shinned hawk, red-cockaded woodpecker, red-knot, roseate tern, short-tailed albatross, southwestern willow flycatcher*, spectacled eider*, streaked horned lark, western snowy plover*, wood stork, yellow-shouldered blackbird*, and Yuma clapper rail (* Asterisk denotes a species for which critical habitat has been designated). The rationale substantiating these findings is contained in Appendix A.

On August 8, 2007, under the authority of the Endangered Species Act of 1973, as amended, we removed (delisted) the bald eagle (*Haliaeetus leucocephalus*) in the lower 48 States of the United States from the Federal List of Endangered and Threatened Wildlife and subsequently removed from this consultation. The exception is that in 2008, the Sonoran Desert bald eagle DPS was listed as threatened in the following areas in the State of Arizona: Yavapai, Gila, Graham, Pinal, and Maricopa Counties in their entirety, southern Mohave County (that portion south and east of the centerline of Interstate Highway 40 and east of Arizona Highway 95), eastern La Paz County (that portion east of the centerline of U.S. and Arizona Highways 95), and northern Yuma County (that portion east of the centerline of U.S. Highway 95 and north of the centerline of Interstate Highway 8). However, we also note that the protections provided to the bald eagle under the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA) will continue to remain in place. To help provide more clarity on the management of bald eagles after delisting, we recently published a regulatory definition of ‘‘disturb’’. The final National Bald Eagle Management Guidelines and a proposed rule for a new permit that would authorize limited take under BGEPA and grandfather existing Act authorizations.

This biological opinion is based on information provided from Regions 1 through 8, the proposed rule for 2009-10 migratory bird hunting [74 FR 16339], the biological opinions for the final rules for the 2007-08 and 2008-09 migratory bird hunting seasons, and information and comments submitted to the Division of Migratory Bird Management (DMBM) regarding listed species from the Service's Regional Directors in Regions 1 through 8. A complete administrative record of this consultation is on file at the U.S. Fish and Wildlife Service, Division of Migratory Bird Management, 4501 N. Fairfax Drive, Arlington, VA 22203.

CONSULTATION HISTORY

April 10, 2009 - the DMBM publishes Migratory Bird Hunting proposal to amend 50 CFR part 20; Proposed 2009-10 Migratory Game Bird Hunting Regulations (Preliminary).

May 21, 2009 - DMBM provides all FWS Regions with copies of the proposed regulations and the biological opinion for the migratory bird hunting season of 2009-10 and requests the Regions to update species information. Responses due to DMBM by June 25, 2009.

July 12, 2009 - DMBM determines that formal consultation under the Intra-Service Section 7 process regarding the proposed action and analysis of regional responses, including the monitoring results from 2008-09 hunting season as required in previous biological opinions, is required. DMBM determines that the biological opinion be completed by August 20, 2009.

August 6, 2009 – DMBM coordinates with Alaska FWS Region regarding the current status of Alaska-breeding Steller's eiders for consideration in the 2009-10 Migratory Game Bird Hunting Regulations Biological Opinion.

August 11, 2009 – DMBM provides draft biological opinion to Regional 7 Migratory Bird Coordinator and Endangered Species Staff for comments.

August 19, 2009 – Alaska Region 7 provides comments on draft biological opinion.

August 20, 2009 – DMBM incorporates comments into final biological opinion.

BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

The taking of migratory birds is expressly prohibited under the Migratory Bird Treaty Act unless specifically provided by regulation. The Service's DMBM proposes to establish annual hunting regulations for certain migratory game birds. These regulations will permit the hunting of designated species of the avian families Anatidae, Columbidae, Gruidae, Rallidae, and Scolopacidae during the 2009-10 season. These hunting regulations establish the frameworks (hunting zones, dates and season lengths, bag and possession limits, hunting hours, and special seasons, including falconry seasons) within which the States may establish their annual migratory bird hunting programs. The Service regulates the earliest and latest dates within which States can select hunting seasons. Most hunting season dates occur between September 1 and January 31, except geese which can extend to March 10.

Open hunting seasons occur in the contiguous United States, Alaska, Hawaii, Puerto Rico, and the Virgin Islands. Seasons are divided into early and late seasons for administrative and biological reasons. Early seasons generally begin around September 1 and pertain to all migratory game bird species in Alaska, Hawaii, Puerto Rico, and the Virgin Islands; migratory game birds other than waterfowl (e.g., dove); and special early waterfowl seasons, such as those for teal or resident Canada geese. Late seasons generally start near September 24 and include most waterfowl seasons not already established.

Significant new harvest survey estimates and documentation of Steller’s eider shooting mortality on the Arctic Coastal Plain during the Alaska Subsistence Harvest Seasons were documented in 2007 and 2008 (presented in *Status of Species*). Because of that information, the Service developed a new regulation for the Alaska Subsistence Harvest 2009 season and a suite of Conservation Measures designed to curtail shooting mortality of listed eiders on the ACP (presented in *Status of Species*). The Conservation Measures were implemented during the 2009 spring/summer subsistence harvest and prior to the fall hunt because the two seasons are back-to-back in Alaska; their implementation during the spring/summer subsistence harvest and the 2009-10 Migratory Bird Hunting Season was considered in this consultation. Therefore, prior to the conclusion of the 2009 Subsistence Harvest consultation, the Service had in place solutions that addressed the listed eider shooting problem and an unprecedented increase in community awareness and resolve to collaborate with the Service to protect listed eiders.

In addition to the measures described above, all parts of 50 CFR part 20 are part of the proposed action, including the emergency closure clause 20.26 which states:

"(a) The Director may close or temporarily suspend any season established under subpart K of this part: (1) Upon a finding that a continuation of such a season would constitute an imminent threat to the safety of any endangered or threatened species or other migratory bird populations. (2) Upon issuance of local public notice by such means as publication in local newspapers of general circulation, posting of the areas affected, notifying the State wildlife conservation agency, and announcement on local radio and television."

In response to an illegal hunt conducted in 2004, and to reduce the chance of shooting a whooping crane during the migratory game bird hunting seasons, the State of Kansas has implemented the following:

1) Delayed the initiation of the statewide sandhill crane hunting season in Kansas from the first Saturday in November to the first Wednesday after the first Saturday in November (November 11).

2) Developed a mandatory web-based species identification test for Kansas sandhill crane hunters.

3) Included graphics of whooping crane "look-alike" species, warnings about the fines associated with the take of an endangered species and the web site address that has been developed for sandhill crane and waterfowl hunters in the Kansas Department of Wildlife and Parks Annual Hunting Guides.

4) Expanded the Quivira NWR website to not only warn hunters about the presence of whooping cranes, but to encourage hunters to clearly identify target species before shooting (e.g., "Shoot - Don't Shoot" video scenarios). In addition, the refuge has added a link to the Sandhill Crane and Waterfowl Hunter website.

5) Modified the Sandhill Crane and Waterfowl Hunter website to update sighting report submission instructions.

6) Exploring the possibility of working with the Central Flyway Council to develop a Public Service Announcement that can be distributed throughout the Central Flyway.

7) Increased the presence of Law Enforcement officers in the field in areas containing whooping cranes in Kansas.

Hunting of any species that is protected under the ESA is not authorized. As a matter of policy, the DMBM also includes species that have been designated as candidates for protection under the ESA in this consultation.

DMBM addressed lead poisoning in waterfowl in an Environmental Impact Statement (EIS) in 1976, and again in a 1986 supplemental EIS. The 1986 document justified a ban on the use of lead shot to hunt waterfowl. The subsequent approval of steel shot for hunting waterfowl and coots began that year, with a complete ban of lead for waterfowl and coot hunting in 1991. Subsequent to this ban, DMBM published final rules for approval of nontoxic shot types for

hunting waterfowl and coots as follows:

- bismuth-tin shot in January 1997;
- tungsten-iron and tungsten-polymer shot types in August 1999;
- tungsten-matrix shots for hunting waterfowl and coots in September 2000;
- tungsten-nickel-iron shots for hunting waterfowl and coots in January 2001;
- tungsten-iron-nickel-tin shots for hunting waterfowl and coots in January 2003;
- tungsten-bronze, a new formulation of tungsten-iron, and tungsten-tin-bismuth shots for hunting waterfowl and coots in August 2004;
- an additional iron-tungsten-nickel alloy in August 2005;
- and tungsten-iron-copper-nickel, additional iron-tungsten-nickel alloys, an additional formulation of tungsten-bronze, and tungsten-tin-iron in January 2006.

The Service has now listed 11 approved and another proposed nontoxic shot type (see http://www.fws.gov/migratorybirds/issues/nontoxic_shot/nontoxic.htm). In analyzing the potential effects of these shots on listed migratory birds, DCHRS concurred with the DMBM finding that no adverse effects are anticipated from such use (U.S. Fish and Wildlife Service 1997, 1999, 2000, 2001b, 2002b, 2003, 2004, 2005b, 2006a).

ENVIRONMENTAL BASELINE

The environmental baseline includes the effects of past and ongoing human and natural factors leading to the current status of the species, its habitat, and ecosystem, within the action area.

Whooping Crane

In the mid-1800s, the whooping crane's principal breeding range extended from central Illinois north-westward through northern Iowa, western Minnesota, northeastern North Dakota, Southern Manitoba and Saskatchewan, and into central Alberta. The whooping crane disappeared from its breeding range in the north-central United States by the 1890s. Historically, the whooping crane wintered along the coast of the Gulf of Mexico from Florida to Central Mexico. A non-migratory breeding population existed along the coast of Louisiana until the mid-1940s. There were two important migration routes, one between Louisiana and Manitoba and the other from Texas and the Rio Grande Delta region to the Canadian provinces.

Action Area: The proposed action may affect the wild population of whooping cranes (WHCR) in or adjacent to areas open to migratory game bird hunting on the Gulf coast on or around Aransas NWR, Texas, and migration and staging areas through Northeastern Montana, northeastern Colorado, the western half of North Dakota, central South Dakota, Nebraska, Kansas, Oklahoma, and east-central Texas, the non-migratory population in Florida, and the

eastern migratory population found in 20 eastern States.

Status of the Species in the Action Area: The only wild population of whooping cranes nests in the Wood Buffalo National Park, Northwest Territories, Canada and winters at Aransas NWR, Texas. A record total of 266 whooping cranes were present at Aransas in the 2007-08 winter. No mortalities were known to have occurred during the 2007-08 winter. A record 66 nests were found in 2008. Six adult pairs failed to nest. The Aransas-Wood Buffalo whooping cranes suffered 21.4% mortality of the flock (57 birds) between spring, 2008 and spring, 2009, leaving the flock estimate at 247 in spring, 2009. A total of 52 chicks hatched from 62 nests in Canada in June 2009.

Aransas NWR allows hunting of white-tailed deer and feral hogs, but contains a provision that management may immediately close the entire refuge or any portion thereof to hunting, in the event of the appearance of whooping cranes in the hunt area " [CRF 50 §32.63]. Waterfowl, white-tailed deer, and feral hog hunting is permitted on Matagorda Island NWR and on private lands, both being locations where whooping cranes occur throughout the winter. Closing of these lands due to the presence of whooping cranes has not been considered.

The remaining populations are designated as non-essential experimental populations pursuant to section 10(j) of the Act. Section 10(j) states that "each member of an experimental population shall be treated as a threatened species" and further states that any experimental population considered to be non-essential to the continued existence of a species shall be treated as a species proposed to be listed, "except when it occurs in an area within the National Wildlife Refuge System or the National Park System", where it would be considered threatened for the purposes of section 7. The first re-introduced population of WHCRs were released in the Kissimmee Prairie area of central Florida, and is designated a non-essential experimental population. From 1993 to 2005, 289 isolation-reared cranes were released in this area, in an effort to establish a non-migratory flock. As of July 2009, there were 30 surviving individuals in this population.

A second re-introduction project of a non-essential experimental population was initiated in 2001 to establish an eastern migratory flock of WHCRs that would breed in central Wisconsin and winter in west-central Florida. Each year, fledgling age individuals from this population have been led behind ultralight aircraft to Chassahowitzka NWR to facilitate learning of migratory routes and behavior. As of July 2009, there are 78 individuals in this migratory population. This includes the first wild born chick that was taught the migration route by its parents. Individuals from the migratory population are now making unassisted migrations to and from the wintering areas at Chassahowitzka NWR, principally following a course through central and western Georgia, north-central Alabama, central Tennessee, western Kentucky and on through Region 3 to the core breeding area of central Wisconsin. Still, WHCRs from this population may occur anywhere in Region 4. During the 2006-2007 winter, the majority of the cranes from the migratory population wintered in central and northern Florida, however several wintered in other locations in Region 4: four in coastal South Carolina, a pair in the Okefenokee NWR in Georgia, a pair at Wheeler NWR in Alabama, one north of Lake Ponchetrain in Louisiana, one in western Tennessee, and three

Life History and Distribution

The whooping crane stands 5 feet tall and has a long, sinuous neck and long legs. Its snowy white body feathers are accented by jet-black wingtips and a red and black head with a long, pointed, beak. The whooping crane's wingspan measures about 7 feet. The whooping crane is named for its call, which has been described as a shrill, bugle-like trumpeting.

Whooping cranes feed and roost in wetlands and upland grain fields where they associate with ducks, geese, and sandhill cranes. Whooping cranes nest in marshy areas among bulrushes, cattails, and sedges that provide food and protection from predators. They eat insects, minnows, crabs, clams, crayfish, frogs, rodents, small birds, and berries. Whooping cranes usually nest once each year, normally laying two eggs in late April to mid-May, with hatching occurring about one month later. Survival is usually limited to one nestling. Parents share incubation and rearing duties, but females take the primary role in feeding and caring for the young. Autumn migration normally begins in mid-September with individuals arriving in wintering grounds in late October and mid-November, with some later arrivals occurring in early January. Whooping cranes may live up to 30 years in the wild and 35 to 40 years in captivity.

Although widely distributed, the whooping crane was never common, although at one time it is believed there were more than 10,000 whooping cranes in North America (USFWS 2007). The total population had already been much reduced by the mid 1800s and may have been 1,300 to 1,400 according to one estimate (Nebraska State Game 2002). The whooping crane was listed as endangered on March 11, 1967 (32 FR 4001).

Whooping Crane Abundance and Trends

Whooping cranes currently exist in three wild populations and at ten captive locations. Captive breeding efforts started shortly after the species was listed, because of the risk of losing the entire wild flock of whooping cranes due to a natural disaster such as disease or hurricane, and to help increase whooping crane numbers. Captive populations are located at three primary locations: Patuxent Wildlife Research Center in Laurel, Maryland; the International Crane Foundation in Baraboo, Wisconsin; and the Calgary Zoo in Alberta, Canada. A fourth captive population was started in 1998 at the Audubon Species Survival Center in New Orleans, Louisiana, and a few pairs also breed at the San Antonio Zoo in Texas. On January 22, 1993, and July 21, 1997, the Service designated non-essential experimental populations of whooping cranes in the States of Colorado, Idaho, Florida, New Mexico, Utah and the western half of Wyoming (58 FR 5647-5658, 62 FR 38932-38939). The non-essential experimental population status was extended to the states of Alabama, Arkansas, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, North Carolina, Ohio, South Carolina, Tennessee, Virginia, Wisconsin, and West Virginia on June 26, 2001 (66 FR 33903-33917).

The only fully wild population of whooping cranes nests in the Northwest Territories and adjacent areas of Alberta, Canada, primarily within the boundaries of Wood Buffalo National Park. Whooping cranes arrive at this breeding area in late April. The birds winter along the central Texas Gulf of Mexico coast at Aransas National Wildlife Refuge and adjacent areas, typically arriving between late October and mid-November. Occasionally, stragglers may not arrive until late December. Fifty pairs from this population nested in

2000, and 187 adult whooping cranes were reported in spring 2000. In the spring of both 2001 and 2002, 174 whooping cranes migrated north from Aransas NWR. In the spring of 2003, 184 whooping cranes migrated north from Aransas NWR. In the winter of 2004-05, whooping cranes wintering in and around Aransas NWR exceeded 200 birds, thought to be the highest number in the last 100 years. Although one juvenile and one adult crane from the population of 217 died while at Aransas NWR, 215 individuals survived to spring 2005, an increase of 22 birds from the 193 during the spring of 2004 (Stehn, personal communication). Fifty-eight pairs nested in 2005 (Brian Johns, CWS, personal communication). Although 30 juveniles hatched in 2005 survived to reach Aransas, mortality between spring and fall was estimated at 25 cranes. This kept the population from showing significant growth. The only carcass recovered was a 28-year old banded female in Saskatchewan in the fall. The peak population reached 220 in 2005, but 6 birds subsequently died, leaving the flock at 214 in spring of 2006. A record 62 pairs nested in 2006 and in 2007. The only wild population of whooping cranes nests in the Wood Buffalo National Park, Northwest Territories, Canada and winters at Aransas NWR, Texas. A record total of 266 whooping cranes were present at Aransas in the 2007-08 winter. No mortalities were known to have occurred during the 2007-08 winter. A record 66 nests were found in 2008. Six adult pairs failed to nest.

The Aransas-Wood Buffalo whooping cranes suffered 21.4% mortality of the flock (57 birds) between spring, 2008 and spring, 2009, leaving the flock estimate at 247. The drought in Texas that resulted in reduced numbers of blue crabs and wolfberries, primary whooping crane foods, was believed to be a major factor in the losses (Stehn, pers.comm. 2009). Necropsies on two carcasses recovered at Aransas indicated cause of death as

1. Starvation related to a knee injury affecting mobility, and
2. Predation on a bird with Infectious Bursal Disease, the first documented instance of this disease in the Central Flyway.

A total of 52 chicks hatched from 62 nests in Canada in June 2009.

Critical habitat for this population was designated on May 15, 1978, in nine areas within their 2,400-mile migration route between northeastern Alberta and east-central Texas. Four of these critical habitat locations were subsequently removed in 1997. The remaining five areas of critical habitat are found within Kansas, Nebraska, Oklahoma, and Texas, primarily on Federal lands.

The second largest population, designated as a non-essential experimental population, is found in the Kissimmee Prairie area of central Florida. From 1993 to 2005, 289 isolation-reared cranes were released in this area, in an effort to establish a non-migratory flock. This flock successfully fledged its first whooping crane chick born in the wild during summer 2002. In February of 2007, seventeen juvenile whooping cranes died as a result of the storms that swept through central Florida. As of June 2008, there were 32 surviving individuals in this population.

A second non-essential experimental population was reintroduced in the eastern U.S. that would summer and breed in central Wisconsin and winter in west-central Florida. These whooping cranes were led behind ultralight aircraft to Chassahowitzka NWR to establish migratory behavior. The five surviving whooping cranes from the 2001 ultralight-led fall migration arrived in Wisconsin from Chassahowitzka NWR in April 2002, following a nine-

day, 1,230-mile, unassisted northern migration. This historic journey marked the first time in more than a century that whooping cranes had migrated over skies of eastern North America (Jobman 2002a). In addition, 4 juveniles were released into the wild in central Wisconsin in the Fall 2005 and followed wild cranes south to appropriate wintering areas and migrated back north in the spring. If this process continues to work, it provides an alternate methodology to reintroduce migratory whooping cranes into the eastern North America. As of June 2008, there are 72 individuals in this migratory population. This includes the first wild born chick that was taught the migration route by its parents. Individuals from the migratory population are now making unassisted migrations to and from the wintering areas in Central Florida, principally following a course through central and western Georgia, north-central Alabama, central Tennessee, western Kentucky and on through Region 3 to the core breeding area of central Wisconsin. Still, WHCRs from this population may occur anywhere in Region 4. During the 2007-2008 winter, the majority of the cranes from the migratory population wintered in central and northern Florida (39), however several wintered in other locations in Region 4: two pairs in coastal South Carolina, a pair Carroll County Georgia, a pair at Wheeler NWR in Alabama, and eighteen at Hiawassee Refuge in Tennessee.

As of July 2009 the following number of wild and introduced whooping cranes present are described in Table 1 and 2 below.

Table 1. The number of Whooping Cranes in Wild Populations as of July 2009.

	Adult	Young	Total	Adult Pairs
Aransas/Wood Buffalo	247	0[B]	247[A]	72
Rocky Mountains	0	0	0	0
Florida non-migratory	28	1	30	8
Wisconsin/Florida migratory	78	34	78	11
Subtotal in the Wild	353	35	388	91

A The peak population for the Aransas-Wood Buffalo flock in the 2008-09 winter was 270. However, 23 birds died during the winter, leaving 247.

B Fifty-two chicks hatched in Canada in 2009 but are not yet fledged and thus are not included in the table.

Table 2. The number of Whooping Cranes in Captive Populations as of July 2009.

	Adult	Young[E]	Total	Breeding Pairs
Patuxent WRC, Maryland	64	1	64	13
International Crane Foundation, WI	31	0	31	11
Devonian Wildl. Cons.Cent./Calgary	23	0	23	6
Species Survival Center, Louisiana	11	0	11	1
Calgary Zoo, Alberta	2	0	2	0
New Orleans Zoo, Louisiana	2	0	2	0
San Antonio Zoo, Texas	7	0	7	1
Homosassa Springs Wildl State Park	2	0	2	0
Lowry Park Zoo, Tampa, Florida	2	0	2	0
Jacksonville Zoo, Florida	2	0	2	0
Milwaukee County Zoo, Wisconsin	2	0	2	0

Subtotal in Captivity	148	1	149	32

[E] The table does not reflect chicks hatched in 2009 since none have reached fledging age.

TOTALS (Wild + Captive) 388 + 149= 537

The current status of cranes is a result of both human and natural activities. Historically, shooting of cranes caused a significant loss of individuals, but contemporary losses due to this cause are low. Collisions with structures, such as power lines, have resulted in deaths or injuries. Habitat degradation and loss is considered one of the more important factors in the decline of the cranes. Conversion of lands in the plain States to agriculture, draining of marshes and wetlands in the Gulf States, and encroachment of woody vegetation into portions of the Platte River channel in Nebraska have all contributed to the decline of the species (Lewis, 1995). Human disturbance may also cause reduction in productivity. Disturbances include boat and barge traffic, fishing, crabbing, clamming, tour boats, and aerial flights. Biological attributes of cranes that preclude a rapid recovery of the species include delayed sexual maturity, small clutch size, and low recruitment (FWS 1994). There were no known cases of cranes being shot in 2002-03. Adult mortality between April and December 2003 was only four cranes (Stehn, 2003). One whooping crane was illegally shot and killed in Texas on November 14, 2003 outside of any prescribed hunting season. The most recent loss of whooping cranes due to hunting-related activities involved two (and possibly three) whooping cranes illegally shot in Kansas in the fall of 2004. The illegal take that occurred in Kansas in 2004 warrants further deliberation, and is discussed below. According to the Office of Law Enforcement, during the period of 2003-2004 one whooping crane was taken during an illegal waterfowl hunt that was outside of the legal hunting season.

The sandhill crane season in Kansas has opened the first Saturday in November since its inception in 1993. From 1982-92, approximately 70 percent of the whooping crane use-days (number of individuals times number of days reported) in Kansas were reported before November 4, the midpoint of possible dates on which the first Saturday in November could occur. Since 1993, the migration of whooping cranes has delayed slightly, with approximately 60 percent of whooping crane use-days occurring prior to November 4.

The latest whooping crane observation in Kansas was November 12 during 1961-1981, December 6 during 1982-1992, and December 31 during 1993-2003. The number of whooping crane sightings in Kansas has increased as their total population has increased, going from 334 during the 10-year period 1984-1993, to 474 during the most recent ten years, 1994-2003. Not surprisingly, the number of groups ($r = 0.81$, $df = 38$, $P < 0.01$) and number of individual whooping cranes ($r = 0.74$, $P < 0.74$, $P < 0.01$) reported in Kansas since 1961 are significantly correlated with peak whooping crane population the previous winter. As the total number of whooping cranes increases, we should expect some lengthening of the migration period, regardless of weather, and possibly some expansion of the area where they are observed in Kansas.

The sandhill crane migration has also shifted slightly later, although peak numbers still occur during the first half of November. Based on bi-weekly waterfowl surveys at selected sites throughout Kansas during 1982-1992, numbers of sandhill cranes observed during the second half of November were almost identical to those observed during the second half of October. During 1993-2003, the number of sandhill cranes observed in Kansas during the second half

of November was almost double that reported for the second half of October. Preliminary results from a recent (1999-2003) satellite telemetry study of sandhill cranes indicate that for Kansas mean arrival date was October 30, median departure date was November 18, and median length of stay was 20 days (Gary Krapu, USGS, unpublished data). However, these results are from only 15 cranes.

No known shootings were reported in 2007, but the overall loss of 25 and 22 whooping cranes between spring and fall, 2005 and 2006, respectively, was above long-term averages. Based on the above discussion, for the 2004-05 hunting season and beyond, additional protective measures were developed specifically to address the illegal shooting mortalities in Kansas. Delaying the initiation of the statewide sandhill crane hunt to the first Wednesday following the first Saturday in November will reduce adverse effects because analyses indicate a higher number of use-days (74%) will have already occurred in Kansas, suggesting most whooping cranes have left the state for points farther south (Region 6 FWS pers. comm). In addition, fewer hunters typically frequent the field during mid-week, which should also reduce exposure of whooping cranes to pressure by hunters.

Steller's Eider

Action Area: The proposed action may affect Steller's eider where fall and winter populations overlap with hunting activities in southwest, western, south-central, north, and northwest Alaska, the Aleutian Islands, the Alaska Peninsula, and Kodiak Island.

Status of the Species in the Action Area:

Steller's eiders are divided into Atlantic and Pacific populations; the Pacific population is further divided into the Russia-breeding population along the Russian eastern arctic coastal plain, and the Alaska-breeding population. On June 11, 1997, the Alaska-breeding population of Steller's eiders was listed as threatened due to a substantial decrease in the species' breeding range in Alaska and the resulting increased vulnerability of the remaining Alaska-breeding population to extirpation (Federal Register 62(112):31748-31757). The Service concluded the available information did not support listing the species range-wide because counts in 1992 indicated at least 138,000 Steller's eiders wintered in southwest Alaska, and the counts were too imprecise to determine trends with confidence. Although population size estimates for the Alaska-breeding population were also imprecise, it was clear Steller's eiders had essentially disappeared as a breeding species from YKD, where they had historically occurred in significant numbers, and that their ACP breeding range was much reduced. On the ACP, they historically occurred east to the Canada border (Brooks 1915), but have not been observed in the eastern ACP in recent decades (USFWS 2002). The Alaska-breeding population of Steller's eiders now nests primarily only on the ACP, particularly around Barrow and at very low densities from Wainwright to at least as far east as Prudhoe Bay. A few pairs also apparently remain on the YKD (approximately 9 nests found in the last 14 years).

Steller's eiders arrive in pairs on the ACP in early June, but may be periodic breeders; Steller's eiders near Barrow nested in 10 of 18 years since 1991 (summarized by Rojek 2008, and 2008 Service unpublished data). Non-breeding years are common in long-lived eider species and are typically related to inadequate body condition (Coulson 1984), but reasons

for Steller's eiders non-breeding may be more complex. In the Barrow area Steller's eider nesting has been observed related to lemming numbers and other environmental cues; nest success could be enhanced in years of lemming abundance because nest predators are less likely to prey-switch to eider eggs and young, or because avian predator such as pomarine jaegers (*Stercorarius pomarinus*) and snowy owls (*Nyctea scandiaca*) that nest nearby (and consume abundant lemmings) may protect eider nests from mammalian predators such as arctic fox (Quakenbush and Suydam 1999, and summarized by Rojek 2006).

When they do breed, Alaska-breeding Steller's eiders nest on coastal tundra adjacent to small ponds or within drained lake basins, occasionally as far as 90 km inland. Nests are initiated in the first half of June (Quakenbush et al. 1995), and hatching occurs from July 7 to August 3 (Quakenbush et al. 1998). Nests located in the vicinity of Barrow were in wet tundra, in drained lake basins or low-center or low indistinct flat-centered polygon areas (Quakenbush et al. 1998). Average clutch sizes at Barrow varied from 5.3-6.3, with clutches of up to 8 reported (Quakenbush et al. 1998, Rojek 2005). Nest success (proportion of nests with at least one egg hatched) at Barrow averaged 16% from 1991-2004; and after limited arctic fox control has been conducted in the vicinity of nesting Steller's eiders, nest success increased to approximately 50% during 2005-2008 (Service, unpublished data). As with spectacled eiders, nest and egg loss was attributed to predation by jaegers, common raven (*Corvus corax*), arctic fox, and possibly glaucous gulls (*Larus hyperboreus*) (Quakenbush et al. 1995, Obritschkewitsch et al. 2001).

Immediately after hatch, hens move their broods to adjacent ponds with emergent vegetation, particularly *Carex* spp. (Rojek 2005) and *Arctophila fulva* (Quakenbush et al. 1998). Here they feed on insect larvae and other wetland invertebrates. Broods may move up to several kilometers from the nest prior to fledging (Quakenbush et al. 1998, Rojek 2005). Fledging occurs from 32-37 days post hatch (Obritschkewitsch et al. 2001, Quakenbush et al. 1995, Rojek 2005).

Departure from the breeding grounds differs between sexes and between breeding and non-breeding years. Male Steller's eiders typically leave the breeding grounds after females begin incubating, around the end of June or early July (Quakenbush et al. 1995, and Obritschkewitsch et al. 2001). Females whose nests fail may remain near Barrow later in summer; a single failed-breeding female equipped with a transmitter in 2000 remained near the breeding site until the end of July and stayed in the Beaufort Sea off Barrow until late August (Martin et al. in prep). Successfully-breeding females and fledged young depart the breeding grounds in early to mid-September. In a non-breeding year, satellite-transmittered males and females dispersed across the area between Wainwright and Admiralty Inlet in late June and early July, with most birds entering marine waters by the first week of July. They were tracked at coastal locations from Barrow to Cape Lisburne, and made extensive use of lagoons and bays on the north coast of Chukotka (Martin et al. in prep.).

After the breeding season, Steller's eiders move to marine waters where they undergo a complete flightless molt for about 3 weeks. The combined (Russia- and Alaska-breeding) Pacific population molts in numerous locations in southwest Alaska, with exceptional concentrations in four areas along the north side of the Alaska Peninsula: Izembek Lagoon, Nelson Lagoon, Port Heiden, and Seal Islands (Gill et al. 1981, Petersen 1981, Metzner 1993). Molting areas are characterized by extensive shallow eelgrass (*Zostera marina*) beds and intertidal sand flats and mudflats, where Steller's eiders forage on marine invertebrates

such as mollusks and crustaceans (Petersen 1980, 1981; Metzner 1993).

After molt, many of the Pacific-wintering population of Steller's eiders disperse to winter in the eastern Aleutian Islands, the south side of the Alaskan Peninsula, and east to Cook Inlet, although thousands may remain in lagoons used for molt unless or until freezing conditions force them to move (USFWS 2002b). Wintering Steller's eiders usually (although not always; Martin et al. in prep.) occur in waters less than 10 m deep, which are normally within 400 m of shore or at offshore shallows. The listed Alaska-breeding population is only a small proportion of the Pacific-wintering population of Steller's eiders, approximately 0.7%. This estimate is derived by taking the most recent North Slope breeding bird estimate of 576 birds (described below, Stehn and Platte, 2009), adding 1 for the YKD population, and then dividing by the population estimate of Pacific-wintering Steller's eiders from 2007 (87,400; Larned 2007). Thus, 576 ÷ 87,400 = (0.00659 * 100) = 0.7% or rounded to 1%.

Prior to spring migration, thousands of Steller's eiders stage in estuaries along the north side of the Alaska Peninsula, including some molting lagoons, and at the Kuskokwim Shoals near the mouth of the Kuskokwim River in late May (Larned 2005, Martin et al. in prep.). Like other eiders, Steller's eider may use spring leads for feeding and resting, but there are few conclusive data about habitat use during spring migration. It seems likely Steller's eiders are also using the Chukchi lead system similarly to king eiders (Steffen Oppel, University of Alaska-Fairbanks, unpublished data).

During winter, Steller's eiders generally use and feed in shallower water than the other eider species, although they may also use deeper (20-30 m) habitats if feeding on water-column invertebrates (Philip Martin, USFWS, pers. comm.). They are likely associated with shallow spring leads, therefore, although they possibly also use leads in deeper water if an abundant and nutritious invertebrate community is present in the water column. Alaska-breeding Steller's eiders typically return to breeding areas near Barrow in early June (Rojek 2006).

Alaska-breeding Steller's Eider Population Estimate

Stehn and Platte (2009) recently conducted a review of the distribution, abundance, and trend of the listed population of Steller's eiders on the ACP. Utilizing information from three aerial surveys, they assessed the population status and trend of the Steller's eider population nesting on tundra wetlands of northern Alaska. The three surveys are the ACP, the North Slope eider survey (NSE) and the Barrow Triangle survey (ABR). Data reported from these three surveys provide different estimates of average population size and trend. The 1989-2008 ACP survey (Mallek et al. 2007) estimated a total average population size of 866 birds with a declining growth rate of 0.778; the NSE are from 1992-2008 (Larned et al. 2009) averaged 162 birds with increasing growth rate of 1.059. The ABR survey from 1999-2007 (Obrishkewitsch et al. 2008) averaged 100 birds with a growth rate of 0.934. Average population size and trend can be biased by changes in observer, detection rates and survey timing. Survey timing was considered especially important for species with male departure early in incubation, or other marked shifts in habitat use, movements, or flocking behavior (ground breeding surveys near Barrow indicate the best time for aerial surveys of breeding Steller's is about 12-20 June, after arrival of most breeding individuals but before most males depart. Using a subset of data least confounded by changes in survey timing and observer, the appropriately-timed NSE survey observations from 1993-2008 averaged 173 indicated total Steller's eiders (88-258, 90% confidence interval) with an estimated growth rate of 1.011 (0.857 – 1.193, 90% CI). The authors assumed a detection probability of 30%

(based upon reasonable estimates with similar species and habitats), yielding a total average population of Steller's eiders breeding in the ACP of about 576 (292-859, 90% CI) individuals (Stehn and Platte 2009).

Standardized ground surveys for eiders near Barrow have been conducted since 1999, and have found an average density near Barrow of 0.66 birds/ km^2 (Rojek 2006). The Barrow vicinity supports the largest known concentration of nesting Steller's eiders in North America. Steller's eiders are periodic breeders near Barrow, and have nested in only 10 of 18 years since 1991 (see Rojek 2008 for summary). The highest number of Steller's eiders observed during systematic surveys at Barrow occurred in 1999 with 135 males counted during ground surveys (36 nests found); in 2008, 120 male Steller's eiders were counted during ground surveys (28 nests found). Counts of males are the most reliable indicator of Steller's eider presences because females are cryptic and are often undercounted. Approximately 90% of all Steller's eiders nests found near Barrow since 1991 are within one mile of a road in the vicinity of Barrow (1991-2007 locations are summarized in Rojek 2008; 2008 locations are Service unpublished data).

Steller's Eider Recovery Goals

The Steller's Eider Recovery Plan (USFWS 2002) presents research and management priorities, that are re-evaluated and adjusted every year, with the objective of recovery and delisting so that protection under the Act is no longer required. When the Alaska-breeding population was listed as threatened, factors causing the decline were unknown, but potential causes identified were predation, over hunting, ingestion of spent lead shot in wetlands, and habitat loss. Since listing, other potential threats have been identified, including exposure to oil or other contaminants near fish processing facilities in southwest Alaska, but causes of decline and obstacles to recovery remain poorly understood.

Criteria to be used in determining when species are recovered are often based on historical abundance and distribution, or on the number needed to ensure the risk of extinction is tolerably low (with extinction risk estimated by population modeling). For Steller's eiders, information on historical abundance is lacking, and life history parameters needed for accurate population modeling are inadequately understood. Therefore, the Recovery Plan for Steller's eiders establishes interim recovery criteria based on extinction risk, with the assumption that numeric population goals will be developed as life history parameters become better understood. Under the Recovery Plan, the Alaska-breeding population will be considered for reclassification to endangered when the population has $\geq$ 20% probability of extinction in the next 100 years for 3 consecutive years, or the population has $\geq$ 20% probability of extinction in the next 100 years and is decreasing in abundance. The Alaska-breeding population will be considered for delisting from threatened status when it has $\leq$ 1% probability of extinction in the next 100 years, and each of the northern and western subpopulations are stable or increasing and have $\leq$ 10% probability of extinction in 100 years.

Steller's Eider Critical Habitat

In 2001, the Service designated 2,830 mi^2 (7,330 km^2) of critical habitat for the Alaska-breeding population of Steller's eiders at breeding areas on the YKD, a molting and spring-staging area in the Kuskokwim Shoals, and molting areas in marine waters at the Seal Islands, Nelson Lagoon, and Izembek Lagoon (66 FR 8849, February 2, 2001). No critical habitat for Steller's eiders has been designated on the ACP.

Subsistence Harvest

In addition to the proposed action, the Service annually promulagates regulations to open the Alaska Migratory Bird Subsistence Harvest (subsistence harvest). The take of Steller's eider is closed in both hunts. However, harvest estimates and direct counts of dead birds indicate tens of each species are shot annually on the North Slope in the subsistence harvest season, especially near Barrow. In the 2008 subsistence harvest season, the Service documented that 20 Steller's eiders were shot and 7 died of unknown causes. Therefore, the Service utilized its authorities to enforce the subsistence harvest regulations at Barrow to protect breeding Steller's eiders. The Service conducted in-season verification of the harvest for listed eiders for the first time in 2008.

In 2009, the Service focused on eliminating those threats to Steller's eiders through a combination of regulations, conservation measures, and conservation partnerships. Regulations (e.g., no shooting after dark) for the 2009 subsistence hunt provided additional protection to Steller's eiders on the North Slope. However, the Service does not believe regulations alone afforded sufficient new protection for Steller's eiders to satisfy the non-jeopardy requirement of the ESA, nor eliminate adverse impacts of the subsistence harvest on Steller's eiders. Therefore, the following conservation measures were required: (i) increased migratory bird hunter outreach prior to the hunts, (ii) increased Service enforcement of migratory bird regulations; and (iii) in-season subsistence harvest verification of Steller's eider mortality and injury. The 2009 Subsistence Harvest regulations, conservation measures, and conservation partnerships are summarized below.

The migratory bird hunter outreach was jointly designed and implemented by the AMBCC, North Slope Borough (NSB), Native village of Barrow (NVB), Inupiat Community of the Arctic Slope (ICAS), the Migratory Bird Task Force (which was formed following a Barrow Hunter-to-Hunter meeting in September 2008), the Service, ADF&G, and other affected parties.

<u>2009 Subsistence Harvest Regulations</u>

Previously Adopted Subsistence Harvest Regulations:

All previously adopted AMBCC migratory bird subsistence harvest regulations were in place and enforced in 2009. Previously adopted regulations that are relevant to the protection of listed eiders are:

1. Steller's eiders and spectacled eiders are closed to hunting and egg gathering;
2. Possession or use of lead shot or other toxic shot while hunting is prohibited;
3. Possession of closed species is prohibited;
4. No person shall at any time, by any means, or any manner, possess or have in custody any migratory bird or part thereof, taken in violation of subpart C and D of this part; and,
5. Upon request from a Service law enforcement officer, hunters taking, attempting to take, or transporting migratory birds taken during the subsistence harvest season must present them to the officer for species identification.

New 2009 Subsistence Harvest Regulations:

Citing the goal of eliminating or significantly reducing the potential impact of the subsistence harvest to Steller's eiders, the following regulation applied to the North Coastal Zone area of the North Slope Region:

> 1. Migratory bird hunting is permitted from one-half hour before sunrise and until sunset.

In addition, the 2009 subsistence harvest regulations include a new section that describes how the Service's emergency closure authority would be used to protect Steller's eiders:

> "§92.32 *Emergency regulations to protect Steller's eiders*. Upon finding that continuation of these subsistence regulations would pose an imminent threat to the conservation of threatened Steller's eiders, the U.S. Fish and Wildlife Service Alaska Regional Director, in consultation with the Co-management Council, will immediately under § 92.21 take action as is necessary to prevent further take. Regulation changes implemented could range from a temporary closure of duck hunting in a small geographic area to large-scale regional or State-wide long-term closures of all subsistence migratory bird hunting. Such closures or temporary suspensions will remain in effect until the Regional Director, in consultation with the Co-management Council, determines that the potential for additional Steller's eiders to be taken no longer exists."

Conservation Measures

The 2009 subsistence harvest were finalized with new regulations and a clearly articulated emergency closure procedure to protect Steller's eiders. The Service did not believe the existing and new regulations alone would be sufficient to eliminate the threat of extinction or adverse affects for Steller's eiders and therefore, conservation measures were initiated to supplement the regulations to avoid possible jeopardy under the ESA. The conservation measures are:

1. Increased migratory bird hunter outreach prior to opening the hunts;

2. Increased Service enforcement of migratory bird regulations; and,

3. In-season harvest verification of Steller's eider mortality and injury.

The new protective measures for Steller's and spectacled eiders during the 2009 subsistence harvest focused on Barrow, Alaska, where the listed population is known to attempt to breed. 2009 outreach to the general public and hunters included: multiple public and hunter meetings regarding closed species and the lead shot ban, with similar outreach conducted via numerous radio call-in shows, public service announcements on the local television and radio shows, almost weekly newspaper articles regarding Steller's eider conservation issues. A hunter outreach meeting was also held in Wainwright, Alaska by USFWS outreach and law enforcement prior to the arrival of eiders in the spring *(the 2009 outreach effort is summarized in the attachment below)*. A Memorandum of Understanding was signed between the USFWS, the North Slope Borough, Ukpeagvik Inupiat Corporation, Inupiat

Community of the Arctic Slope and Native Village of Barrow on March 26, 2009, in which the parties reached a common understanding for implementing the regulations and conservation measures, and those groups met biweekly to discuss issues and progress during the subsistence harvest. Much direct hunter outreach occurred in 2009 with daily USFWS law enforcement presence and contacts at popular hunting areas and along roadsides. The USFWS provided daily law enforcement at Barrow of the subsistence hunting regulations regarding closed eider species, lead shot, and closed shooting hours, and also conducted in-season harvest verification. A few violations for lead shot were issued in 2009, but no harvest of Steller's or spectacled eiders were detected during the subsistence season. Monitoring for the presence and breeding activity of the listed eiders was also conducted near Barrow in 2009 by the USFWS (unpublished data) with a total of 9 Steller's eiders observed during systematic foot surveys of their principle breeding area, and no Steller's eider nests detected near Barrow in 2009. The USFWS completed the Steller's eider nest search surveys on July 14, concluding that 2009 was a non-breeding year at Barrow for the listed population of Steller's eiders. USFWS biologists observed three female Steller's eiders on a Barrow coastal lagoon on July 12. A total of five spectacled eider nests were found during the Steller's eider nest searches near Barrow, with two of those nests known to hatch, indicating.

EFFECTS OF THE ACTION:

Effects of the action are the direct and indirect effects of the proposed action on the species or its critical habitat and the effects of any interrelated or interdependent activities.

Whooping Crane

The most likely adverse effect to whooping cranes that would be caused by establishing hunting regulations for certain migratory game birds is accidental death or injury caused by hunters who confuse whooping cranes with other species of migratory waterfowl that may be lawfully hunted. The cranes' migratory routes and wintering area in Texas are located in areas where hunting is allowed. The migration of whooping cranes and migratory bird hunting seasons has a considerable amount of overlap. The Fall migration for cranes starts in mid-September and may continue until mid-December (with occasional stragglers arriving at the southern terminus as late as early January) and the hunting season can last from September 1 until March 10, although most seasons are concluded by the first week in February. Furthermore, in the past, whooping cranes have been shot when mistaken for geese or sandhill cranes, especially one-half hour before sunrise. In nine of the last ten years, whooping cranes have been confirmed in snow goose or sandhill crane hunt areas in the Dakotas, Nebraska, Kansas, Oklahoma, Colorado, and Texas. These birds were monitored and, in some instances, a small area was closed to hunting until they departed.

Sandhill Crane Hunting

State regulatory mechanisms in Texas, Oklahoma, and Kansas as well as other States have been implemented to provide legal protection for whooping cranes during sandhill crane hunting. Cranes (the family Gruidae) are protected internationally under the migratory bird conventions between the United States and Canada (1916) and between the United States and

Mexico (1937). Hunting of migratory birds in the United States is regulated by the Migratory Bird Treaty Act (40 Stat. 755; 16 U.S.C. 703) which gives effect to the international treaties. Migratory birds defined as "game birds" in the terms of these conventions and Migratory Bird Treaty Act are listed in section 20.11 of Part 1, Title 50, Code of Federal Regulations and include the Family Gruidae. The treaty with Canada in 1916 listed "Gruidae or cranes, including little brown, sandhill, and whooping cranes." Subsequently, the little brown crane and sandhill cranes were shown to be subspecies of a single species (Oberholser 1921); and it was shown also that there are intermediates between the lesser and greater subspecies. The "little brown crane" is now called the lesser sandhill crane; the "sandhill crane" is now called the greater sandhill crane. The intermediate population had been described and named the Canadian sandhill crane (Walkinshaw 1965) until recent genetic studies suggested that genotypically there likely are only two subspecies, the lesser and the greater sandhill crane (Rhymer et al. 2001, Petersen et al. 2003, and Jones et al. 2005).

A general closed season was established on all cranes in the United States May 20, 1916, and remained in effect until January 1, 1961, when the Federal government authorized a 30-day season on lesser sandhill cranes in eastern New Mexico and western Texas. Texas was unable to participate at that time since cranes were not classed as game birds by State statute. This reinstatement of sandhill crane hunting in New Mexico was followed by 30-day seasons in Alaska (September 1-30) and west Texas (November 4-December 3) in 1961. Minor changes were made in subsequent seasons in these States. The area open to hunting in New Mexico and Texas was enlarged slightly, and the hunting period in Alaska was increased to 45 days during the 1964-65 season. In 1967, hunting was permitted in the Central Flyway portion of Colorado, exclusive of the San Luis Valley and, in the following year, in western Oklahoma, the eastern portion of the Texas panhandle, and prescribed areas of North and South Dakota. In 1972, hunting was permitted in prescribed areas of Montana and Wyoming and in 1993 Kansas initiated its first sandhill crane hunting season. The birds have been legally hunted in Mexico at least since 1940 and in portions of Canada since 1959.

Concern over the impact hunting may have on populations of sandhill cranes prompted the U.S. Fish and Wildlife Service to initiate a special sandhill crane hunting permit system during the 1975-76 hunting season. The permits were supplied to the States by the Service and were issued free to hunters upon request. Each permit holder was mailed a questionnaire at the close of the hunting season. The questionnaire included inquiries about the number of days hunted, number of cranes harvested, numbers crippled, counties hunted, and information on the identification of whooping cranes. One follow-up questionnaire was mailed to non-respondents about 3 weeks after the first mailing. Non-respondents to the follow-up were assumed to have the same average hunting activity and harvests as respondents, and reported harvests have been expanded accordingly.

The implementation of point-of-sale electronic records and Internet-based license issuing systems in Colorado, Texas, and North Dakota compromised the mandatory exposure of sandhill crane hunters to whooping crane identification materials. Therefore, States began to publish information on whooping crane identification in their hunting brochures and the U.S. Fish and Wildlife Service created a web site to assist in this identification (http://migratorybirds.fws.gov/issues/SandhillCrane/SandhillCraneHunters.htm).

Since sandhill crane hunting was resumed in 1961, the Service and the Central Flyway have adopted a risk-averse approach in the expansion of sandhill crane hunting opportunities. This

approach was adopted to insure protection for the various breeding stocks of Mid-Continent Population sandhill cranes, address anti-crane hunting concerns, and to protect the recovering Wood Buffalo/Aransas Population of whooping cranes. With respect to conflicts in sandhill crane hunting and whooping cranes, the development and implementation of hunter education and awareness programs was the primary tool adopted in the Flyway. In some cases, hunting seasons within States were adjusted within Federal frameworks to facilitate spatial and temporal use by whooping cranes. Sandhill crane hunting seasons in Canada and the United States in the migration corridor were originally seasonally timed or geographically limited to protect whooping cranes (Buller 1967, Archibald et al. 1976, Thompson and George 1987). Recent expansions of sandhill crane hunting seasons offer an increased potential for overlap with whooping crane migration periods that may have increased the risks to whooping cranes (Konrad 1987, Brian Johns, CWS, pers. comm.). Finally, the use of the State-Federal Contingency Plan (USFWS 2008) was implemented to provide additional protection of whooping cranes at site specific areas within a state.

Federal Framework for Sandhill Crane Hunting - 2007

Outside Dates: Between September 1 and February 28.
Shooting Hours: One half hour before sunrise to sunset.

Hunting Seasons: Seasons not to exceed 37 consecutive days may be selected in designated portions of North Dakota (Area 2) and Texas (Area 2). Seasons not to exceed 58 consecutive days may be selected in designated portions of the following States: Colorado, Kansas, Montana, North Dakota, South Dakota, and Wyoming. Seasons not to exceed 93 consecutive days may be selected in designated portions of the following States: New Mexico, Oklahoma, and Texas.
Daily Bag Limits: 3 sandhill cranes, except 2 sandhill cranes in designated portions of North Dakota (Area 2) and Texas (Area 2).

Further State Restrictions within the framework

Outside Dates:

Colorado - delayed opening (Oct. 2)
Kansas - delayed opening (Nov. 11)
Montana - delayed opening (Sept. 25, Sheridan County=Sept. 11)
New Mexico - delayed opening (Oct. 31)
North Dakota - delayed opening (Sept. 18)
Oklahoma - delayed opening (Oct. 30)
South Dakota - delayed opening (Sept. 25)
Texas - delayed opening (Area A=Nov. 6, Area B=Nov. 27, Area C=Dec. 18)
Wyoming - delayed opening (Sept. 18)

Shooting Hours:

Kansas - delayed to sunrise, close at 2:00 pm

Local Area Restrictions: Numerous State and National Wildlife Refuges, e.g. Quivira National Wildlife Refuge (NWR) and Cheyenne Bottoms State Management Area.

In Kansas, regulations adopted beginning in August 1993 addressed some of the concerns for

whooping cranes by establishing shooting hours of sunrise to 2:00 p.m. and delaying the season opener until the first Saturday in November. Based on the data available at that time, approximately 71% of historical whooping crane reports in Kansas occurred prior to November 4. The 2:00 p.m. closure reduced human disturbance of whooping cranes as they returned to roost sites. Two important areas for the whooping crane, Cheyenne Bottoms Wildlife Area and Quivira NWR, have protective restrictions in place. Quivira NWR is closed to crane hunting and other hunting when the whooping cranes are on the Refuge. If whooping cranes are reported at Cheyenne Bottoms Wildlife Area, the pool they are using will be closed to all activities and the area also will be closed to light goose and sandhill crane hunting.

Since the initiation of sandhill crane hunting in Texas during the early 1960s, an effort was made to provide temporal and spatial separation between sandhill crane hunters and whooping cranes (Thompson and George 1987). The first of ultimately three sandhill crane hunting zones, designated as Zone A, permitted sandhill crane hunting in the Trans-Pecos and Western Panhandle regions of Texas starting in 1961, well to the west of known whooping crane migration routes. Zone B, opened the Eastern Panhandle in 1968, overlapped suspected whooping crane migration routes and was consequently restricted from opening until around December 1 to allow completion of the mid-October to mid-November whooping crane migration. Zone C, a limited season and area in South Texas, was implemented in 1983 and was designed to open after all whooping cranes had reached the Texas Coast in the fall and terminate before the whooping cranes began their return migration in the spring (Thompson and George 1987).

Whooping Crane Contingency Plan

Another protective program for the whooping crane involves thirteen States that cooperate with the Service in the Contingency Plan for Federal-State Cooperative Protection of Whooping Cranes (Federal-State Contingency Plan Committee 2006). Protection of whooping cranes is increased through implementation of the Contingency Plan. The Contingency Plan provides a mechanism for designating appropriate response options and reporting requirements whenever whooping cranes are confirmed as sick, injured, or dead, or when they are healthy but in a situation where they face hazards, such as shooting/hunting activities or contaminants and disease. Furthermore, Plan objectives include reducing the likelihood of illegal shooting of whooping cranes by non-sportsmen or vandals, and increasing the opportunity to recover and rehabilitate wild whooping cranes found injured or sick.

The Plan outlines cooperative Federal-State efforts to protect migratory whooping cranes in the Central Flyway but no longer covers whooping cranes listed as experimental nonessential. The plan outlines responses to a number of hazards potentially faced by whooping cranes such as disease, powerlines, contaminants, and hunting. Films, posters, brochures, informational website, and other conservation education materials are provided to the public as part of the contingency plan. The primary emphasis of this plan is to list the response options when cranes are observed in hazardous situations or when cranes are found injured, sick, or dead. Two Federal and two State personnel are responsible for implementing the plan in each State. If whooping cranes are reported in an area open to hunting, State and/or Federal personnel check the sighting report. When whooping cranes are confirmed in an active hunting area situation, the personnel decide if the activity of the bird(s) should be

monitored and a several square-mile area may be closed to hunting (spot-closure) until the whooping crane(s) leave the area.

The Contingency Plan, first implemented in 1985, was significantly updated in March 2006. Implemented by Provincial, State and Federal agencies, the Plan is believed to have led to an increase in reported sightings and reduced losses to shooting and disease (Lewis 1992). However, the Plan has major limitations, and implementation is an unfunded program (Stehn 2005). Further, it is unknown where and when whooping cranes may choose to make a migration stop. In general, the Contingency Plan has less stringent measures for handling a scenario when a few cranes stop in a location only occasionally frequented by whooping cranes. When regular usage by a large number of whooping cranes occurs in a known location, the more protective measures in the Contingency Plan are called for (Stehn 2005).

Mortality

The historical number of whooping cranes killed by hunters has been reported in Kraft and Hands (2005). The most recent loss of whooping cranes involved two whooping cranes illegally shot in Kansas in the fall of 2004. With the loss of these two birds, the total known loss is 15 individuals that have been shot (both illegally and incidentally), going back to 1955 (Tom Stehn, USFWS, Whooping Crane Coordinator, personal communication). This total includes three shootings in Florida and one in Canada. Most of these shootings (13) occurred between 1989-2004, and while 6 were connected with hunting seasons, at most 2 of the 13 incidents could have been considered incidental take.

Within the Central Flyway, prior to fall of 2003, a whooping crane was illegally shot November 14, 2003, south of Dallas, Texas by an individual who was hunting ducks when the season was closed. The individual stated he shot the whooper because he thought it was a sandhill crane, although he was in an area that was not open to crane hunting. During April 1991, a whooping crane was shot by a vandal near Bend, Texas when no hunting seasons were open. A vandal shot a whooping crane in April 1990 in Saskatchewan. In January 1989, a whooping crane was shot and killed near Aransas NWR by a waterfowl hunter who thought he was shooting a snow goose. In 1968, a whooping crane was illegally killed near Aransas NWR by a snow goose hunter, and in 1955 a snow goose hunter killed a whooping crane near Sioux Falls, South Dakota.

The following compilation (1950 through 1987) represents the most complete comparison of known causes of mortality in the Aransas-Wood Buffalo population of whooping cranes during migration (Lewis et al. 1992). Although whooping cranes are intensively monitored throughout their annual cycle compared to other birds, only 13 whooping crane carcasses were found during migration from winter 1950 through spring 1987. These carcasses represent 8 percent of the 157 whooping cranes presumed to have died while migrating during that period. Probable causes of death for these 13 whoopers were collision with power lines (5), trauma either from collision or gunshot (4), shot (1), muskrat trap (1), heart muscle disease (1), and viral infection (1).

Since 1987, probable causes of mortality in the Aransas-Wood Buffalo population include 6 shot and 4 colliding with power lines (Tom Stehn, USFWS, personal communication). However, these mortalities may not be representative of total mortalities because they comprise only 6 percent of the 178 individuals missing from Aransas NWR during spring through fall 1987-2004.

As indicated above, the most recent event took place on November 6, 2004, when a group of hunters in Stafford County, Kansas illegally shot at a small flock of whooping cranes (3) several miles from Quivira NWR on the opening day of the sandhill crane season. Two birds subsequently went down some distance from the hunters. The two wounded cranes were captured by State and Federal personnel and transported to the Kansas State Veterinary Medical Center for treatment. One crane died at Kansas State on November 10, 2004. The other crane was transported to the Patuxent Wildlife Research Center for further treatment, but died on December 9, 2004. Both steel and HeviShot were taken from the birds during necropsies indicating multiple shooters. In addition, one of the cranes had ingested several compression wads from shotgun shotshells. The take was determined to be illegal (not incidental), because the birds were fired upon before legal shooting time (sunrise) and several hunters lacked the proper sandhill crane hunting permits. The third bird shot at apparently returned to the refuge, with a report received of a whooping crane in flight with blood on it that same day. This single crane delayed its migration, initially flew less than normal, but may have re-initiated migration on December 9. However, this bird was never subsequently reported in migration, and there is no evidence that this bird ever made it to the wintering grounds and was considered as a mortality that occurred between spring and fall.

While mortality of whooping cranes has occurred as result of hunting, regulatory mechanisms have been developed to minimize death or injury to the whooping crane. The sandhill crane hunting restrictions, devised to protect whooping cranes, were implemented because of the similarity in appearance between the two crane species. Specific restrictions for the State of Kansas will be implemented to avoid the accidental shooting of whooping cranes. In addition, the whooping Crane Contingency Plan reduces the likelihood of several threats to the species.

Nonetheless, the information provided above suggests that there is reason to expect an occasional incidental mortality caused by a migratory waterfowl hunter. The Service anticipates that one whooping crane may be accidentally killed or injured by migratory waterfowl hunters within a ten year period. This estimate is based on the historical numbers killed or injured over the same timeframe, the protective measures that minimize risk of death or injury to whooping cranes, and the small likelihood of hunters misidentifying whooping cranes.

Critical Habitat

There are five areas of critical habitat designated for the whooping crane, located in Kansas, Nebraska, Oklahoma, and Texas, primarily on Federal and State wildlife management lands. These areas provide roosting, resting, and foraging habitat for the cranes as they migrate between their breeding and wintering grounds. Hunting activities within the Cheyenne Bottoms State Wildlife Management area designated as critical habitat are substantially regulated. Many NWRs designated as critical habitat require a reservation to gain access. Access is primarily on foot and not expected to result in destruction or adverse modification of the critical habitat.

Steller's Eider

Annual Migratory Game Bird Hunting Season (sport or fall hunting season)

We believe take of Steller's eiders during the sport hunting season (fall and winter) occurs because hunters are unaware of prohibitions against shooting Steller's eiders or are unable to identify Steller's eiders on the wing prior to shooting. Although such take has been documented, no harvest monitoring mechanism adequately measures take of Steller's eiders by migratory game bird hunters. Current harvest monitoring mechanisms include the Harvest Information Program (HIP) and the Parts Collection Survey, both cooperative efforts of the Service and Alaska Department of Fish and Game (ADF&G). The Harvest Information Program (administered by the Service) asks a sample of state-licensed migratory game bird hunters to report their harvest of birds in general categories such as ducks, geese, and sea ducks. Also administered by the Service, the Parts Collection Survey, a sample of successful hunters from previous seasons, estimates the age, sex, and species composition of the harvest based on returned wings and tail feathers. Together, these surveys are used to develop species-specific state-level and national harvest estimates. However, these methods are inadequate tools for effectively monitoring harvest levels of rare or rarely harvested species like Steller's eiders, which would seldom be picked up in the random sample. In addition, the distribution of sport hunting pressure within the range of Steller's eiders during fall and winter remains unclear. Finally, it is uncertain what proportion of subsistence hunters' purchases Fall/Winter waterfowl hunting licenses, which they must do to fall within the sample universe of the Harvest Information Program or the Parts Collection Survey.

The proposed action would regulate hunting in areas occupied by Steller's eider. In 2003 and 2004 we concluded that the proposed action would be likely to adversely affect the listed population of Steller's eiders. Law enforcement efforts determined that, in 2002/2003, at least 12 male and 12 female Steller's eiders were killed by sport hunters on Kodiak Island. In 2003/2004, Service law enforcement efforts identified a take of 2 Steller's eiders. Because law enforcement presence has been minimal across the remote range of this species, and because the Harvest Information Program and Parts Collection Survey probably do not adequately sample subsistence hunters, there is almost certainly additional unreported take of Steller's eiders by hunters beyond that reported by law enforcement agents. Additional law enforcement efforts would likely result in additional reports of take of Steller's eiders. Based on these assumptions, we expect that a minimum of 24 Steller's eiders (both listed and non-listed entities) are inadvertently shot during the sport hunting season.

Pursuant to the terms and conditions starting with the 2004-2005 Biological Opinion, educational and law enforcement efforts were implemented to reduce the likelihood of take of Steller's eiders during 2008 hunting season. Though we do not have final figures, preliminary information on the results of these efforts indicates that we were successful in significantly reducing incidental take of Steller's eiders during the fall hunting seasons, though some take apparently still occurred. Assuming that progress continues in addressing the terms and conditions set forth in the 2004-05 Biological Opinion, we believe it is reasonable to assume that take of Steller's eiders is likely to decline over time. No citations for illegal shooting of Steller's eiders by hunters were issued during the 2007-08 and 2008-09 fall/winter hunting seasons. We expect that the number of listed birds taken during the Fall/Winter Waterfowl Season is less than or equal to one bird per year.

Current Effects of the Subsistence Harvest on Listed Eiders

The Service believes subsistence hunts continue to have adverse effects on listed eiders through shooting mortality, crippling loss, and disturbance to nesting birds with loss of eggs

and/or ducklings. Known and potential impacts are described below.

Shooting Mortality: Limited information exists about the number of Steller's and spectacled eiders killed during the subsistence harvest and fall hunts on the North Slope. However, the Service documented direct effects of the subsistence hunt on listed eiders through shooting mortality (summarized above). Particular concerns are that prior to 2008, monitoring the subsistence hunt for take of listed species did not occur and enforcement of migratory bird regulations was not an established priority in parts of the North Slope. Since the regulated subsistence harvest began in 2003, North Slope subsistence harvest data are available for 2005 and 2007. Harvest information is obtained by household surveys among various subsistence villages each year. Potential reporting errors recognized in 2003 by the Subsistence Harvest Survey Ad-Hoc Committee are inaccurate reporting by households, non-reporting of households, and nonparticipation by villages. However, recommendations to increase precision and reduce reporting errors and optimize harvest surveys have been considered; survey estimates are the best available information on subsistence harvest. Other information about shooting mortality of listed eiders includes direct counts of shot birds found by the North Slope Borough, the Service, and the public. No reported mortality occurred during the 2009 subsistence harvest season, to date.

Using a combination of harvest survey information and direct observation of shot birds, the Service concluded that direct mortality of tens of Steller's eider occurs annually from shooting during the subsistence harvest on the North Slope of Alaska. This mortality is not permitted and in the case of Steller's eider may cause extinction of the North American breeding population, if subsistence harvest were to continue without the modified regulations, conservation measures, and increased partnerships (USFWS 2009).

Crippling Loss: The Service is also concerned about the potential for crippling loss of listed eiders during the hunts. No specific information exists regarding crippling loss of listed eiders during the subsistence harvest or fall hunts, but some amount of crippling loss is inherent in any hunt. Bellrose (1953) estimated crippling loss can be very high in waterfowl hunts. Whereas some birds may recover and survive with embedded shot, crippling can also result in mortality or injury that can preclude reproduction. Crippling loss of eiders may occur because typical hunting practices along the sea coast are especially challenging, with conditions that include pass shooting and birds falling into the ocean or ice making retrieval difficult. Observations made during fall migration at Point Barrow Duck Camp in 1963 counted 1.5 crippled eiders per hour that were not recovered, while 3.5 eiders were killed per hour (Thompson and Person 1963).

Disturbance to Nesting Birds: Approximately 90% of Steller's eider nests found near Barrow since 1991 occurs within 1 mile of the road network (Rojek 2008, USFWS unpubl. data). Most shot birds found near Barrow in 2008 were found near roads. In 2008, an incubating female Steller's eider was shot while on her nest. Because Steller's eiders apparently arrive on the North Slope paired ready to initiate nesting, the Service assumes the loss of either adult on the breeding grounds represents the loss of the individual bird and the reproductive potential for the pair that year. Therefore, the Service believes that shooting affects the size and breeding performance of the population. Given this season was a non-breeding year for Steller's eiders, effects from this disturbance was not apparent in 2009.

Summary and Chronology of Risk to Steller's Eiders during the North Slope Waterfowl Hunts: Steller's eiders are at risk to shooting during the subsistence harvest and fall hunts, but the location and type of risk differs as the birds' breeding chronology progresses. Little is specifically known about Steller's eiders during migration, but they are thought to migrate northward from the Bering Sea to the North Slope as leads develop in the Bering and Chukchi Sea pack ice. They may fly in flocks of only Steller's eiders and also in mixed flocks with other species of eiders. During the early part of the subsistence harvest (April and May), Steller's eiders are moving northward as the sea ice opens. The subsistence harvest of waterfowl commences on the ice in conjunction with whaling and occurs as birds are migrating north through leads of open water in the pack ice. North Slope Village residents in Wainwright, Point Hope, Point Lay, and Barrow are likely to encounter migrating Steller's eiders during the subsistence harvest.

Steller's eiders tend to arrive on the North Slope in early June, with very few migrating east of the Barrow peninsula. When near Barrow, Steller's eiders often can be observed from the roadside, especially during June when initial melting tends to occur near roads while tundra ponds are still frozen. Unlike other eider species that migrate past Point Barrow while enroute to and from breeding areas further east, breeding Steller's eiders arrive and remain near Barrow for several weeks in non-breeding years, and several months in breeding years. In non-breeding years, both male and female Steller's eiders may return to the ocean by mid-summer. In breeding years, male Steller's eiders are the first to return to the ocean in mid-summer. However, successfully breeding females and their ducklings remain on tundra ponds during July to September, possibly spending an increasing amount of time in lagoons and the ocean near the Barrow Spit before moving to the ocean to begin their southward migration during September or possibly later. Breeding and non-breeding Steller's eiders near Barrow have been observed repeatedly moving between the ocean and tundra during the subsistence harvest and the fall hunts. These local movements include flights past or over Duck Camp where eider subsistence harvest hunters take large numbers of common eiders (*Somateria mollissima*) and king eiders (*Somateria spectabilis*) each year.

Mortality

Hunting for Steller's eiders was closed in 1991 by Alaska State regulations and Service policy. Outreach efforts have been conducted by the North Slope Borough, Bureau of Land Management (BLM), and Service to encourage compliance. No citations for illegal shooting of Steller's eiders by sport hunters were issued during the 2007-08 or 2008-09 fall/winter hunting seasons.

Limited information exists about the number of Steller's eiders killed during the subsistence harvest and fall hunts on the North Slope. However, the Service documented direct effects of the subsistence hunt on listed eiders through shooting mortality (summarized below).

Listed eider mortality and injury (near Barrow unless otherwise noted) during Subsistence Harvest

1999: 4 Steller's eider shot;

2000: 2 Steller's eiders dead;

2001: no reported mortality;

2002: no reported mortality;

2003: no reported mortality;

2004: no reported mortality;

2005: AMBCC Subsistence Harvest Survey for the North Slope*:
Steller's eider: estimated take 18.7 (9-37 95% CI); 9 reported taken;
1 Steller's eider dead of suspected wire collision
* Because of the concern about hunting mortality of listed eiders on the North Slope, a 2005 Intensive Migratory Bird Subsistence Harvest Survey analysis was conducted by the NSB under contract with AMBCC, focusing on North Slope villages (Point Hope, Point Lay, Wainwright, and Barrow) that had some amount of listed eider harvest. A complete census of the community was attempted, with emphasis on high harvesters (>10 birds of any kind taken). Additional statistical analyses were conducted to reduce the variance of the estimated harvest (William Ostrand, AMBCC/USFWS, unpubl. data).

2006: 4 Steller's eiders shot (3 at Duck Camp, 1 along Gaswell Road)
1 Steller's eider dead of unknown cause;

2007: AMBCC Subsistence Harvest Survey (preliminary data for Barrow):
Steller's eider: estimated take 36 (2-71 95% CI) (Naves 2008); estimate not corrected for reported take of 10 (Dewhurst, pers. com.);

2008: 20 Steller's eiders shot (16 at Duck Camp, 4 along Gaswell and Cakeeater Roads) during subsistence harvest season
7 Steller's eiders dead of unknown causes
2 Steller's eiders injured due to wire collision (survived and relocated to captive population) and;

2008 AMBCC subsistence harvest survey information not currently available.

In 2008, the Service OLE documented that at least 20 Steller's eiders were shot in the vicinity of Barrow and seven were found dead of unknown causes (many too heavily scavenged to determine cause of death) during the subsistence harvest season. A total of 29 Steller's eiders, including sub-adults, was known to be removed from the North American population in 2008 near Barrow due to a combination of shooting during the subsistence harvest, unknown causes, and injury from apparent wire collisions. Of the Steller's eiders confirmed shot near Barrow in 2008, 80% (16/20) were found near a traditional pass-shooting area called Duck Camp located at the base of the Barrow Spit, and 20% of the shot Steller's eiders (4/20) were found along Gaswell and Cakeeater Roads.

Critical Habitat

Critical habitat for the Alaska-breeding population of the Steller's eider has been designated on 2,830 mi^2 (7,330 km^2) of breeding areas on the Yukon-Kuskokwim Delta, a molting and spring-staging area in the Kuskokwim Shoals, and molting areas in marine waters at the Seal Islands, Nelson Lagoon, and Izembek Lagoon. (USFWS 2001d). The proposed action is not

anticipated to result in destruction or adverse modification of the species' critical habitat.

CUMULATIVE EFFECTS:

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

Whooping Crane

Whooping cranes are exposed to a variety of hazards such as collision with obstructions, predators, disease and illegal shooting. Snow and hail storms, low temperatures and drought can present navigational handicaps or reduce food availability. Collision with powerlines is the most prevalent cause of death for fledged whooping cranes, accounting for the death or serious injury of at least 19 whooping cranes between 1956 and 1995 (Lewis, 1995). Most deaths, other than those of chicks, are believed to occur during migration (USFWS 2005). Deaths from April through November are three times greater than deaths on the wintering grounds (Lewis et al. 1992). Conversion of wetlands and prairie to hay and grain production made much of their original habitat unsuitable. The frequent stopovers necessary during migration become increasingly perilous as more land is developed for agriculture, industry or habitation, and fewer suitable resting sites remain (Nebraska Game and Parks Commission, 2002). Direct habitat loss from draining and clearing wetlands and human disturbance in breeding areas and along the migration routes is expected to continue.

Steller's Eider

Community Growth

Community growth is anticipated to continue across the North Slope. The footprints of North Slope villages will likely increase, along with associated infrastructure such as roads, powerlines, communication towers, landfills, and gravel pits and these activities may adversely affect listed species. The scale of impacts will depend not only on the amount of growth, but the location as it relates to eider habitat. For example, community development projects at Barrow may potentially impact Steller's eiders to a much higher degree than developments at Point Lay.

Because over 97% of the Action Area is wetlands or open water (USGS National Land Cover Database), and listed eiders breed near and use wetland areas, a section 404 permit from the COE would likely be necessary for all large scale community development projects that may impact eiders. The issuance of these permits would also trigger consultation under the ESA.

Projected Growth in Hunter Numbers

United States 2000 Census data indicate the estimated village size in the Wade-Hampton and Bethel census areas, where subsistence hunters on the YKD might encounter Steller's or spectacled eiders. Census data is also provided for the North Slope, which encompasses the ACP breeding area for these two species. At current rates of population growth the increases in the numbers of households and projected population numbers can be approximated (Table 4).

Predicting future levels of take of either eider species as a result of population growth is problematic. However, the Service anticipates that the potential number of subsistence hunters will grow in Alaska, indicating a continuing and growing need for careful management of the subsistence hunt and a need for long-term education, outreach, and law enforcement activities to protect listed species during the hunt.

Table 4. Projected human population and household increases in rural Alaska areas where Steller's and Spectacled Eiders are found during spring and summer

Census Area	Bethel Population	Bethel Households	Wade-Hampton Population	Wade-Hampton Households	North Slope Population	North Slope Households
2000	16006	4226	7028	2063	7385	2109
2010	18538	4847	8264	2364	8788	2543
2020	21056	5559	9718	2709	10457	2958
2030	24151	6376	11428	3104	12443	3567

Oil and Gas Development

Oil and gas development, whether in Federal or State waters or in the terrestrial environment on State, private, Native-owned, or Federal lands, would require Federal permits (such as section 404 of the Clean Water Act authorization from the U.S. Army Corps of Engineers (COE), and National Pollution Discharge Elimination System permits from the Environmental Protection Agency) and, therefore, are not considered cumulative effects.

Gas Line

The BLM now considers the development and export of North Slope natural gas from the Action area via pipeline to be reasonably foreseeable. While much of this line is likely to be on State lands, a project of this magnitude would require Federal permits and section 7 consultation. It is therefore, not a cumulative effect under the ESA.

Increased Scientific Research

Scientific research across the North Slope is increasing as concern about effects of climate change in the arctic grows. There are a number of long-term study plots near Barrow and NPR-A providing baseline data, further increasing interest in the area. While much research is conducted by universities and private institutions, all activities in NPR-A require land use authorization by BLM and therefore, require section 7 consultation. The Service has also consulted on the major long-term research area near Barrow, and researchers are currently conducting activities in ways that minimize impacts to listed eiders.

Summary of Effects/Cumulative Effects and Interrelated and Interdependent Activities

In summary, we anticipate community growth, a gradual increase in subsistence hunter numbers (with community growth), terrestrial and offshore oil and gas development, scientific activities, and other activities will continue in the Action Area in coming decades. Most notably activities with potential to affect significant numbers of individuals of listed species (such as oil and gas development, community growth, and large-scale science projects) are expected to require consultation under the ESA, whereas those that may not

require consultation (such as non-federal research) will likely have minor impacts to only a few individuals.

CONCLUSIONS

After reviewing the above information, while some incidental take of the whooping crane and Steller's eider may occur as a result of the proposed action, it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the whooping crane or Steller's eider, and the action is not likely to result in destruction or adverse modification of their designated critical habitat.

INCIDENTAL TAKE STATEMENT

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

The measures described below are non-discretionary, and must be undertaken by the DMBM of the Service 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 DMBM has a continuing duty to regulate the activity covered by this incidental take statement. If the DMBM (1) fails to assume and implement the terms and conditions or (2) fails to require the States 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 DMBM must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. [50 CFR §402.14(I)(3)].

WHOOPING CRANES

Any taking of whooping cranes must be immediately reported to the National Whooping Crane Coordinator, U.S. Fish and Wildlife Service, P.O. Box 100, Austwell, Texas 77950 (Phone: 361-286-3559), who, in conjunction with his counterpart in the Canadian Wildlife Service, will determine the disposition of any live or dead specimens.

AMOUNT OR EXTENT OF TAKE

As previously described, shootings of whooping cranes during legal migratory bird hunting

seasons are rare, due in large part to physical dissimilarities between whooping cranes and sandhill cranes or snow geese. In addition, with the continued implementation of the Contingency Plan for Federal-State Cooperative Protection of Whooping Cranes, the Service anticipates that the potential for incidental take is further reduced. Accordingly, the Service anticipates that no more than one whooping crane will be incidentally taken within ten years starting on September 1, 2001, until midnight on August 30, 2011, as a result of the proposed action. The incidental take is expected to be in the form of injury or death through shooting.

EFFECT OF THE TAKE

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to jeopardize the continued existence of the whooping crane or destroy or adversely modify their critical habitat.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of whooping crane:

1. Work cooperatively with States and Tribes to reduce the likelihood that whooping cranes will be killed or injured by waterfowl hunters.

2. Monitor and report any incidental or illegal take of whooping cranes that is caused by waterfowl hunters.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of ESA, DMBM or the Service must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline the reporting/monitoring requirements. These terms and conditions are non-discretionary.

1. DMBM shall ensure that sandhill crane hunters in the States participating in the Federal-State Contingency Plan receive educational materials that help identify whooping cranes. Educational materials will be made available when hunters obtain their Federal Sandhill Crane Hunting Permit.

    1.1. DMBM shall continue to work with those States where sandhill crane hunting licenses are issued over the Internet or have recently converted to a Point-of Sale Licensing Program (Texas and Colorado) to develop special informational materials for distribution to sandhill crane and snow goose hunters on how to identify whooping cranes.

    1.2. DMBM shall work collaboratively and cooperatively with the States participating in the Federal-State Contingency Plan by providing waterfowl hunters educational materials to help identify whooping cranes.

    1.3. DMBM shall post information and educational materials to help identify

whooping cranes on a central U.S. Fish and Wildlife Service web site and provide a link that can be utilized on web sites of States where whooping cranes are present or utilize migratory corridors.

1.4. DMBM shall continue to work cooperatively with the Central Flyway Council and States throughout the Central Flyway to coordinate the timing of sandhill crane hunting seasons and whooping cranes migration. Additional protective measures will be assessed as whooping crane populations increase and migration distribution changes.

2. DMBM shall continue to work with the whooping crane recovery coordinator to monitor the take of whooping cranes for the period of 2001-11 to ensure that no more that one whooping crane is incidentally taken during that period. The monitoring results have been received for 2009 and should continue to be submitted along with a description of the proposed action, to be incorporated into each annual consultation.

STELLER'S EIDER

AMOUNT OR EXTENT OF TAKE

There is the potential that shootings of Steller's eider may occur as a result of the proposed action. The Service anticipates that no more than 1 threatened Steller's eider may be incidentally taken each year.

EFFECT OF THE TAKE

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to jeopardize the continued existence of the Steller's eider or destroy or adversely modify its critical habitat.

REASONABLE AND PRUDENT MEASURES

Steller's Eider

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of Steller's eider:

1. Work cooperatively Alaska Department of Fish and Game and Ecological Services, and in cooperation with the Alaska Migratory Bird Co-Management Council, other Service programs, and Conservation Partners to reduce the likelihood that Steller's eiders will be killed or injured by waterfowl hunters during the fall migratory bird sport hunting season.

2. Monitor and report any incidental or illegal take of Steller’s eiders that is caused by waterfowl hunters in the vicinity of Barrow, Alaska, where birds are known to concentrate for nesting.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of ESA, DMBM or the Service must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline the reporting/monitoring requirements. These terms and conditions are non-discretionary.

The conservation measures developed during the 2009 Subsistence Harvest Season and as adopted as Service policies were implemented and will continue as long as the birds are within the vicinity of Barrow, Alaska. The educational outreach and monitoring are extensive enough to meet the reasonable and prudent measures for the 2009 sport hunting season.

CONSERVATION RECOMMENDATIONS

Section 7(a)(l) 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.

The following conservation measures are recommended for the benefit and recovery of all listed migratory birds.

Lead poisoning as a result of hunting is known to be a continuing problem for target and non-target species. The use of lead shot for hunting waterfowl and certain other migratory game birds is prohibited. However, Region 2 (Arizona) provided comments in the past that lead poisoning was still a problem affecting bald eagles. Similar comments were made in the Biological Opinion on the 2003-2004 Migratory Game Bird Hunting Regulations with a recommendation that further investigations into the pathways of lead in the environment were needed for these species. This concern is further substantiated in the report from the USGS National Wildlife Health Center's Wildlife Mortality Database, which details endangered and threatened species cases collected between Sept 1, 2008 and February 28, 2009, that were associated with hunting activity, gunshot wounds, or lead poisoning. This report was submitted to supplement the monitoring requirements of last year's biological opinion for migratory bird hunting. There were no know cases reported during this period; however, in the past the bald eagle have been recovered in which cause of death was determined to be an unknown source of lead.

1. DMBM should monitor the incidence of lead poisoning for all listed species in all affected areas and further investigate the occurrences of lead poisoning in the States of AR, AZ, AK, CO, FL, IA, LA, MD, MN, MO, MS, ND, VA, and WI, wherever mortalities occur, to determine if further conservation measures need to be incorporated into the migratory game bird hunting regulations to discourage the use of lead shot for upland species.

2. DMBM should encourage and support State wildlife officials in efforts to enforce the ban on the use of lead shot in waterfowl hunting areas.

Region 7 also notes that the State of Alaska, Native organizations, local governments and the Service have made great strides in reducing the deposition of lead shot from waterfowl

hunting throughout Alaska's wetlands. We offer the following discretionary conservation recommendations as possible ways to further reduce the prevalence of lead shot within spectacled and Steller's eider habitats in Alaska.

1. The National Refuge System in Alaska should evaluate the feasibility of phasing out the use of toxic lead shot (not including rifle ammunition or shotgun slugs) for all hunting within the range of spectacled and Steller's eiders on the Yukon Delta NWR. Results of this evaluation should be made available to the Anchorage U. S. Fish and Wildlife Service Field Office Supervisor and other interested parties by September 2009.

2. The Service should continue to work with villages, Native organizations, ADF&G, and other Federal agencies to eliminate the use of lead shot for waterfowl hunting in Alaska.

3. The Service should work with villages, Native organizations, ADF&G, and other Federal agencies to consider the prohibition of lead shot (not including rifle ammunition or shotgun slugs) for all hunting throughout the range of spectacled and Steller's eiders.

As discussed in Appendix A, the Hawaiian goose, or nene, is not likely to be adversely affected by the proposed action. While the present understanding of the use of dogs to hunt mourning dove on the Island of Hawaii does not indicate any potential adverse effects, there is a very low risk that dogs may mistakenly flush, injure, or kill adult or juvenile nene. We suggest that DMBM develop additional information to support the present determination that nene are not likely to be adversely affected.

1. DMBM should, in cooperation with state wildlife and Endangered Species staff, explore if there is any evidence that would indicate any potential adverse effects to the nene involving the use of dogs when hunting mourning doves.

2. DMBM should also educate game bird hunters about the nene, where they might nest and live, and possible problems associated with the use of dogs.

Although the likelihood of possible adverse effects related to the proposed hunting regulations are considered negligible, the following conservation actions have been developed to avoid adverse effects to Ivory-billed woodpeckers (IBWO):

1) Continue the use of the required refuge hunting permit which includes information on the ivory-billed woodpecker along with Sibley colored illustrations of both male and female IBWOs, pileated woodpeckers, wood ducks, and red-headed woodpeckers;
2) Refurbish as necessary, entrance signs with special information alerting visitors that they are entering IBWO habitat and may see one;
3) Retain existing hunt brochure and permit wording cautioning hunters to be sure of their targets due to the similarities in flight between the IBWO and pintail;
4) Continue the use of refuge tear sheets with IBWO/refuge information;
5) Refurbish as needed, the large information panels at refuge HQ with IBWO information;
6) Retain the Managed Access Area boundary and distinction and allow unregulated public access with contingency plans in place to reinstate

regulated access if needed;

7) Law enforcement officers will monitor public use at the State Highway 17 access and provide additional coverage at peak use periods. Peak use periods will coincide with hunting seasons and organized birding events;
8) Refurbish the boundary of the Managed Access Area as needed with special boundary signs; and
9) Continue to coordinate with the Arkansas Game and Fish Commission.

The recommendations provided here relate only to the proposed action and do not necessarily represent complete fulfillment of DMBM's 7(a)(l) responsibility for these species.

The DMBM should notify the Endangered Species Program of the implementation of any conservation recommendations.

The Service (Endangered Species Program) believes that no more than one whooping crane will be incidentally taken within ten years starting on September 1, 2001, until midnight on August 30, 2011, as a result of the proposed action, and no more than one Steller's eider will be incidentally taken per year as a result of the proposed action. The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The DMBM must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the proposed action. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the action that may affect listed species or critical habitat in a matter 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 the listed species or critical habitat not considered in this biological opinion; or (4) a new species is listed or critical habitat designated that may be affected by the identified action.

cc: 3242-MIB-FWS/AES
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Appendix A

SPECIES ASSESSMENTS

Region 1:

No migratory bird hunting seasons are authorized for the Commonwealth of the Northern Mariana Islands, Guam, and other Pacific possessions. Therefore, no listed species in those areas will be affected by the proposed action.

Akiapolaau *(Hemignathm munroi)* [E]

The akiapolaau is a medium-sized, stocky, short-tailed, insectivorous, Hawaiian honeycreeper endemic to the Island of Hawaii. It primarily inhabits montane mesic and wet forests dominated by koa and ohia or subalpine dry forests dominated by mamane and naio; it has recently been found in young koa plantations. Breeding and molting occur mainly from February to July, but akiapolaau can be found breeding or molting during any month of the year. The majority of nests have been found in the leafy, terminal branches of tall ohia trees. Akiapolaau primarily forage on insects found on mature trees. They use their beak to probe crevices and insect borings or to locate and extract prey in a manner similar to a woodpecker.

In the unlikely event that hunting under the proposed regulations does occur in areas occupied by akiapolaau it is unlikely that they would be mistaken for a mourning dove *(Zenaida macrourd)* due to significant differences in size, shape, behavior, and flight pattern. Falconry is not allowed on Hawaii and therefore would have no effect on this species.

Because akiapolaau nest high up in trees they are unlikely to be adversely affected by the temporary presence of migratory game bird hunters.

Effect Determination: Not likely to adversely affect.

Hawaii Creeper *(Oreomystis mand)* [E]

The Hawaii creeper is a small insectivorous Hawaiian honeycreeper which is most common in mesic and wet forests above 5,000 feet in elevation. Its distribution is limited to 4 populations on the island of Hawaii. It is predominantly olive green on the back and dull greenish-buff below, with a white chin and throat. Nests of Hawaii creepers have been found from January to August, but peak breeding occurs from February to May, and molt occurs from May to August. Hawaii creepers generally build cup nests at mid-canopy at about 43 feet (range 9 to 79 feet) in height and about 5 feet (range 0 to 16 feet) from the main bole of the tree. Most (86 percent) are open cup nests but a few (14 percent) are cavity or pseudo-cavity nests. The Hawaii creeper generally feeds on insects, spiders, and invertebrates that are gleaned from the trunks and branches of mature trees.

Mourning doves *(Zenaida macrourd)*, the only legally hunted migratory game bird in the State of Hawaii, are not likely to inhabit the undisturbed forests that the Hawaii creeper prefers. In the unlikely event that hunting under the proposed regulations does occur in areas occupied by Hawaii creepers it is unlikely that they would be mistaken for a mourning dove due to significant differences in size, shape, behavior, and flight pattern. Falconry is not allowed on

Hawaii, and therefore, would have no effect on this species. Because Hawaii creepers nest high up in trees they are unlikely to experience significant disturbance to their behavior the temporary presence of migratory game bird hunters or their dogs.

Effect Determination: Not likely to adversely affect.

Hawaiian Goose/Nene *(Branta sandvicensis)* [E]

The nene is a medium-sized, grey-brown goose with a black face, head and nape of neck, buff cheeks, a pale beige neck with deep furrows, and sides that appear barred due to dark feathers with light edging. Nene historically utilized lowland grasslands, shrublands and dry forest and montane shrubland and dry forest. Their present distribution has been highly influenced by the location of release sites of captive-bred birds. Nene currently inhabit elevations ranging from sea level to 2,500 meters (8,000 feet) in coastal dune vegetation, normative grasslands (such as golf courses and pastures), sparsely vegetated low- and high-elevation lava flows, mid-elevation native and nonnative shrubland, early successional cinderfall, cinder deserts, native alpine grasslands and shrublands, and open native and nonnative alpine shrubland-woodland community interfaces (Banko *et al.* 1999). The breeding season of the nene is the reverse of other *Branta* species, being triggered by decreasing day length. Although eggs have been recorded as early as September and as late as April, the single nesting period generally extends from October through March.

Within the State of Hawaii mourning dove *(Zenaida macrourd)* hunting is only permitted on the island of Hawaii (Hawaii Administrative Rules Title 13, Chapter 122). The mourning dove hunting season on the island of Hawaii (early-November to late-January) occurs during the peak nesting season of the Hawaiian goose (October through March/April). Nene may nest earlier or later depending on weather and loss of first clutch. Nene have the most extended breeding season of any wild goose.

Hunting for mourning doves on Hawaii is limited and is usually incidental (i.e., hunters that are after other game birds may flush a mourning dove and shoot it). On the Island of Hawaii, nene nesting areas and areas where mourning doves are likely to be hunted overlap in only two places: Kapapala Ranch and Puuwaawaa. Although nene nest at other areas on the Island of Hawaii that are open to hunting (e.g., the Saddle Road area, and Puu Anahulu), these areas are not likely to be inhabited by mourning doves due to their elevation or vegetation community.

A 1996 biological opinion (issued to the Federal Aid Program in Region 1 involving changes to a hunting program at the Kapapala Ranch Cooperative Game Management Area [GMA], on the island of Hawaii) addressed the potential effects on the Hawaiian goose from hunting dogs in the following way: "...The use of Kapapala Ranch GMA for game bird hunting places the hunters and their dogs in the vicinity of the nene that routinely use the area for loafing and foraging. Many of these nene are flightless and accompanied by similarly flightless goslings, making them particularly vulnerable to predation or disturbance by the hunters and their dogs."

The revised draft Recovery Plan (2004) for the nene states that feral and domestic dogs are a primary cause of death of nene on Kaua'i, and possibly have an impact on Hawaii (island) populations. Telfer (2003) [in the revised draft Recovery plan] reported that dogs have been a continual problem to nene on Kaua'i and found that 4 of 10 nene mortalities recorded there

from July 1, 2001, to June 30, 2002, were attributed to predation by dogs. Dogs and mongooses are responsible for most of the known cases of predation on adult nene. Two mechanisms identified in the revised draft Recovery Plan to control effects of hunting dogs on Hawaiian goose include a recommendation for incorporating discussion of this problem in hunter education efforts, and a recommendation to consider enacting no hunting zones near important nesting or molting habitat.

To alleviate the risks to the nene at the Kapapala Ranch GMA, the State of Hawaii created a safety zone, making the majority of the sites used by the nene off-limits to hunting, and created educational materials to inform the hunters of the presence and vulnerability of the nene in the area. At the check station, hunters are given copies of a colored information sheet on nene and a map of the GMA, clearly showing the nene safety zone, where no hunting is allowed and where hunters must keep their dogs restrained. In addition, game bird hunting dogs are trained to point out wild birds, not to attack them. Threats to nene are more likely from feral dogs, pig hunting dogs, and vehicles on the highway that separates the Kau Desert from the Kapapala Ranch GMA. Lost hunting dogs must be found and accounted for before the hunters may leave the area. In addition, hunters are instructed to catch and turn in any lost dogs that they come across. There are additional terms and conditions to minimize take of the Hawaiian goose associated with the use of hunting dogs in the Service's 1996 biological opinion.

Since the initiation of the public game hunting program at the Kapapala Ranch GMA, there have been no known injuries or mortalities of nene that are attributable to the hunting program and no negative interactions between nene and the hunters and their dogs.

Although it is conceivable that mourning dove hunters could flush a nene from its nest, we believe that this extremely unlikely to occur because of the limited amount of hunters that are in the field as a result of the mourning dove hunting season and the fact that there are only two places where nene nesting and mourning dove hunting are likely to overlap (one of which has restrictions that reduce the likelihood of interactions between hunters and nene). Accidental shooting of the Hawaiian goose is not anticipated because it is unlikely that a hunter will mistake a Hawaiian goose for a mourning dove due to differences in their size, shape, behavior, and flight pattern.

Effect Determination: Not likely to adversely affect.

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Marbled Murrelet *(Brachyramphus marmoratus)* (Washington, Oregon, and California Population) [T]

The marbled murrelet is a small diving seabird that breeds along the Pacific coast of North America from the Aleutian Archipelago and southwestern Alaska to central California. It forages almost exclusively in the nearshore marine environment, but flies inland to nest in mature conifer trees located in forest stands with old-growth forest characteristics. Marbled murrelet nesting occurs over an extended period from late-March to late-September. Murrelets have been detected at inland sites throughout the year but it is believed that most individuals go out to sea for extended periods during the winter.

The marbled murrelet occurs in several coastal and forest locations containing band-tailed pigeons and mourning doves. Hunters are unlikely to mistake a marbled murrelet for any legally hunted migratory game bird, as it is not similar in appearance to any legally hunted species under the proposed regulations. Noise associated with gunshots from legal hunting activities and hunters moving through the forest are unlikely to significantly alter breeding of murrelets because the proposed action will occur outside of the murrelet breeding season. There have been no records of take of marbled murrelets during open hunting season due to misidentification by sport hunters. Any temporary displacement of murrelets during marine/estuarine hunting activities is not expected to result in a measurable adverse effect to murrelet breeding, foraging, or loafing because they are likely to simply move away from the disturbance and continue their loafing or feeding activities elsewhere.

Effect Determination: Not likely to adversely affect.

Marbled Murrelet Critical Habitat

Critical habitat for the marbled murrelet has been designated in old growth forests of Washington, Oregon, and California. The proposed action will have no effect on old growth habitat function or value and therefore will not affect marbled murrelet critical habitat.

Effect Determination: The action is not likely to affect that critical habitat. Therefore, there is no destruction or adverse modification of critical habitat.

Northern Spotted Owl *(Strix occidentalis caurina)* [T]

The northern spotted owl is a dark brown medium-sized owl with a barred tail and white spots on the head and breast. It inhabits mature and old growth forests from northwestern California to southwestern British Columbia. Spotted owls begin courtship activities in late February or March, most eggs hatch in late April or May, and the majority of young fledge in June.

The northern spotted owl occurs in several coastal locations within Region 1 where hunting for band-tailed pigeons and mourning doves may occur. The spotted owl's nocturnal habitats, its silhouette, size, and color make it highly unlikely that it would be mistaken for a band-tailed pigeon or a mourning dove. Noise associated with gunshots from legal hunting activities and hunters moving through the forest are unlikely to significantly alter breeding, feeding, or sheltering of owls because the proposed action will occur outside of the owl breeding season.

Effect Determination: Not likely to adversely affect.

Northern Spotted Owl Critical Habitat

Critical habitat for the northern spotted owl has been designated in old growth forests of Washington, Oregon, and California. The proposed action will have no effect on old growth habitat function or value and therefore will not affect northern spotted owl critical habitat.

Effect Determination: The action is not likely to affect that critical habitat. Therefore, there is no destruction or adverse modification of critical habitat.

Palila *(Loxioides bailleui)* [E]

The palila is one of the larger Hawaiian honeycreepers with an overall length of 6 to 6.5 inches. The current range of the palila includes about 54 square miles or about 26 percent of the 212 square miles of mamane woodlands remaining on Mauna Kea on the island of Hawaii. Adult palila have a yellow head and breast, greenish wings and tail, and are gray dorsally and white ventrally. Adult females have less yellow on the nape and the lores are gray rather than black as in males. Nesting may begin in January or February, but palila usually start nesting from March to early May; egg laying continues through August or mid-September. The palila is an extreme food specialist, preferring unhardened mamane *(Sophora chrysophylld)* seeds in green pods or in pods that are just beginning to turn brown. Palila are dependent on the mamane and mamane/naio forests for all their needs.

Mourning doves, the only legally hunted migratory game bird in the State of Hawaii are not likely to inhabit the undisturbed high elevation forests that the palila prefers. In 25 years of observations (1980 to present), there have been only one possible detection (audio, not visual) of a mourning dove in the area. The detection is not confirmed and was in an area of very low palila population density due to the sparseness of mamane forest habitat. In the unlikely event that hunting under the proposed regulations does occur in areas occupied by palila it is unlikely that they would be mistaken for a mourning dove due to significant differences in size, shape, behavior, and flight pattern. Falconry is not allowed on Hawaii and therefore would have no effect on this species. Because mourning dove hunting season is outside palila breeding season (see above), palila are unlikely to experience significant disturbance to their behavior from the temporary presence of migratory game bird hunters.

Effect Determination: Not likely to adversely affect.

Palila Critical Habitat

Critical habitat for the palila was designated in 1997 in mamane forests on the slopes of Mauna Kea Volcano between approximately 6,000 and 10,000 foot elevation. The proposed action will have no effect on mamane forest habitat function or value and therefore will not affect palila critical habitat.

Effect Determination: The action is not likely to affect that critical habitat. Therefore, there is no destruction or adverse modification of critical habitat.

Short-tailed Albatross

The short-tailed albatross is the largest of the North Pacific albatrosses (adult wingspan can reach over 7 feet), with a prominent pink bill and white body. Immature birds are dark.

The short-tailed albatross nests exclusively on a few small volcanic islands off the coast of Japan but are an occasional visitor to the waters off the Pacific coast of the U.S. from California to Alaska. Almost all short-tailed albatross sighting in the lower 48 States, which are very rare, have occurred out at sea. Therefore, it is extremely unlikely that migratory game bird hunting activities would occur in areas occupied by short-tailed albatross.

Effect Determination: No effect.

Southwestern Willow Flycatcher *(Empidonax traillii extimus)* [E]

The southwestern willow flycatcher is a small migratory songbird that is seasonally present (May-September) in riparian woodlands of the Southwest, with over 90 percent of breeding sites occurring in Arizona, New Mexico, and southern California. This species does occur in waterfowl and dove-hunting areas, but generally not during the hunting season. In the unlikely event that a southwestern willow flycatcher was present during the migratory bird hunting season it is unlikely that hunters would mistake them for a game bird because of their size, coloration, flight profile, and flight pattern.

Effect Determination: No effect.

Southwestern Willow Flycatcher Critical Habitat

Critical habitat was designated for this species, but was then vacated. We are currently in the process of re-proposing critical habitat.

Effect Determination: Not likely to adversely affect.

Streaked Horned Lark *(Eremophila Aletris stigmata)* [C]

The streaked horned lark is a small, ground-dwelling songbird with conspicuous feather tufts, or "horns," on its head. Its back is heavily streaked with black, contrasting sharply with its deeply ruddy nape and yellow underparts. The streaked horned lark nests on the ground in sparsely vegetated sites in short-grass dominated habitats. Historically, this type of habitat was found in prairies in western Oregon and Washington. More recently, streaked horned larks have used manmade habitats for nesting, including fallow agricultural fields, lightly to moderately grazed pastures, seasonal mudflats, airports, and dredged material islands in the Columbia River. Streaked horned larks are also found in dune habitats along the coast. This migratory species is generally believed to winter in California, but documentation is lacking. The horned lark nesting season extends from March to June.

Although the streaked horned lark may occur in some migratory bird hunting areas, it is unlikely that it would be confused with any migratory game bird species covered by the proposed regulations due to its size, coloration, flight pattern, and distinct silhouette. Furthermore, its nesting season, when it is most vulnerable to disturbance, does not overlap with the proposed hunting seasons. Although streaked horned larks may be disturbed on their wintering grounds, we do not anticipate that a temporary disruption of behavior patterns from proposed activities would be significant nor would it be likely to result in injury to individual birds.

Effect Determination: Upon listing not likely to adversely affect.

Western Snowy Plover *(Charadrius Alexandrians novices)* [T]

The western snowy plover, a small shorebird, breeds primarily on coastal beaches from Washington to Baja California and winters in coastal areas from southern Washington to

Central America. It is pale gray-brown above and white below, with a white hind-neck collar and dark lateral breast patches, forehead bar, and eye patches.

The western snowy plover nesting season extends from early March through late September. While some snowy plovers remain in their coastal breeding areas year-round, others migrate south or north for winter. Most plovers that nest inland migrate to the coast for the winter. The departure from inland nesting areas begins by early July and is completed, except for stragglers, by mid-October.

Due to its small size, silhouette and flight pattern it is extremely unlikely that the western snowy plover would be confused with any migratory game bird species. Disturbance of nesting plovers is not anticipated under the proposed action because hunting seasons will not overlap with the nesting season.

The recovery plan for this species notes that sport of training falcons for hunting could result in losses of snowy plovers when it introduces predators to snowy plover habitats. However, because the proposed action includes a conservation measure that prohibits falconry activities in the vicinity of nesting colonies or nesting concentrations of Federally listed threatened and endangered shorebirds, the introduction of predators due to legal falconry practices will not occur.

Effect Determination: No effect.

Yellow-billed Cuckoo (Western U.S. **D.S.)** ***(Coccyzus americanus)*** **[C]**

The yellow-billed cuckoo is a medium sized bird that occurs in riparian habitats where waterfowl hunting may occur. This species has a slender, long-tailed profile, with a fairly stout and slightly down-curved bill. The tail feathers are boldly patterned with black and white below. The breeding season for the yellow-billed cuckoo generally begins with pair formation in mid-June and lasts until mid-August. Yellow-billed cuckoos annually migrate to wintering grounds in South America. Spring migration begins in late May and lasts until late June, and fall migration begins in late August and lasts until mid-September.

We do not anticipate adverse effects to this species as a result of the proposed action because it is not present in the action area during the migratory game bird hunting season.

Effect Determination: Upon listing, no effect.

Yuma Clapper Rail ***(Rallus longirostris yumanensis)*** **[E]**

The Yuma clapper rail is a marsh bird with a short tail, long legs, a downcurved beak, and short rounded wings that uses freshwater marsh habitats. Within Region 1, this species occurs year-round along the lower Colorado River and at the Salton Sea. The mating season for Yuma clapper rails occurs from mid March to July.

Migratory game bird hunting occurs in these areas but hunting is limited to ducks, geese, coots, and moorhens; there are no legally hunted rail species within the range of the Yuma clapper rail in Region 1. These rails are secretive, reluctant to fly, and are not likely to be confused for any legally hunted migratory game bird along the lower Colorado River or at the Salton Sea. Migratory game bird hunting will not occur during the nesting season for the Yuma clapper rail and we believe that disturbance of Yuma clapper rails caused by the proposed regulations is rare. We do not anticipate that a temporary disruption of behavior patterns from proposed activities would be significant nor would it be likely to result in injury to individual birds.

Effect Determination: Not likely to adversely affect.

Region 2:

Attwater's' prairie-chicken *(Tympanuchus cupido attwateri)* (Endangered) - Appearance is slightly similar in color and size to some waterfowl and flight patterns might be briefly confused with legally-hunted migratory species. In general, prairie-chickens are an upland species seldom found in areas where ducks are being hunted. While prairie-chickens are occasionally found in harvested rice fields where geese are commonly hunted, coloration and flight patterns of prairie-chickens are quite different from geese. One prairie-chicken was shot by a waterfowl hunter near Sealy, Texas in 1990. To date, this is the only such incident of which Region 2 has knowledge, and the circumstances surrounding this event make it unlikely that it would happen in the future.

Effect Determination: Not likely to adversely affect

Bald eagle *(Haliaeetus leucocephalus)* (Threatened, Sonoran Desert Distinct Population Segment (DPS)) - Although the bald eagle feeds and roosts in association with wetlands, the species is dissimilar in appearance to any legally hunted game bird. In 2004 a bald eagle died from lead toxicosis near Santa Rosa Reservoir in New Mexico. Whether previously deposited lead shot and or sinkers in this reservoir are available to waterfowl or fish and subsequently available to eagles remains a valid question. However, because the proposed regulations do not allow the use of lead shot, lead poisoning from eating game birds contaminated by lead shot is not of concern.

The bald eagle was delisted in 2007 in the lower 48 states due to the species recovery. In 2008 the Sonoran Desert bald eagle was listed as threatened by a court ruling in the following areas in the State of Arizona: Yavapai, Gila, Graham, Pinal, and Maricopa Counties in their entirety, southern Mohave County (that portion south and east of the centerline of Interstate Highway 40 and east of Arizona Highway 95), eastern La Paz County (that portion east of the centerline of U.S. and Arizona Highways 95), and northern Yuma County (that portion east of the centerline of U.S. Highway 95 and north of the centerline of Interstate Highway 8).

Effect Determination: Not likely to adversely affect

Black-capped vireo *(Vireo atricapillus)* (Endangered) - Preferred habitat is scattered trees and numerous dense clumps of shrubs interspersed with open areas. This small bird is not similar in appearance to any legally-hunted game bird.

Effect Determination: Not likely to adversely affect

Brown pelican *(Pelecanus occidentalis)* (Endangered) - Although this species frequents wetlands where migratory waterfowl may be hunted, the bird's large size, slow flight, and distinctive silhouette make it readily distinguishable from legally-hunted migratory game birds.

Effect Determination: Not likely to adversely affect

California condor *(Gymnogyps californianus)* (Endangered/Experimental nonessential) – This large bird is not similar in appearance or behavior to legally-hunted game birds. The proposed regulations do not allow the use of lead shot, therefore lead poisoning from eating game birds contaminated by lead shot is not of concern.

Effect Determination: Not likely to adversely affect

Golden-cheeked warbler *(JJendroica chrysoparia)* (Endangered) - Inhabits oak-juniper woodlands. This small bird is unlikely to be mistaken for any of the game birds covered by the proposed regulations.

Effect Determination: Not likely to adversely affect

Least tern *(Sterna antillarum)* (Endangered) - Although occasionally found in areas used by migratory bird hunters, the least tern is not similar in size, behavior, or flight characteristics to legally-hunted game birds.

Effect Determination: Not likely to adversely affect

Lesser prairie-chicken *(Tympanuchus pallidicinctus)* (Candidate) - As discussed below, appearance is slightly similar in color and size to some waterfowl and flight patterns might be briefly confused with legally-hunted game birds. The LPC is an upland species found in short-, mid-, and tall-grass prairies, and shrubsteppes. Currently, the LPC is classified as a game species in Kansas, New Mexico, Oklahoma, and Texas, although the legal harvest is closed in New Mexico, Oklahoma, and Texas. In March of 2009, Texas adopted a temporary, indefinite suspension of their current two-day season until LPC populations recover to huntable levels. In Kansas, the bag limit is one bird daily for LPCs located south of Interstate 70 and two birds for LPCs located north of Interstate 70. During the 2006 season, Kansas hunters expended 1,900 hunter-days and harvested approximately 200 LPCs. Given the low number of LPCs harvested per year in Kansas relative to the population size, the statewide harvest is probably insignificant at the population level. It is unlikely that the LPC would be mistaken as a legally-hunted game bird in New Mexico, Texas, and Oklahoma because it does not occur in the habitats of the other game species. In general, LPCs are an upland species seldom found in areas where waterfowl are being hunted. While the flight patterns of prairie-chickens may be similar to those of other game birds at first glance, their flight patterns are actually quite different. In addition, there have been no reported incidences of LPCs being shot because they were mistaken for another legally hunted game bird.

Effect Determination: Not likely to adversely affect

Masked bobwhite quail *(Colinus virginianus ridgewayi)* (Endangered) - Inhabits upland desert areas where it would not be in contact with waterfowl hunters. The quail may be encountered by dove hunters at desert water holes. However, bobwhite quail are distinctive in their body features and flight characteristics such that it is unlikely that they would be mistaken by dove hunters.

Effect Determination: Not likely to adversely affect

Mexican spotted owl *(Strix occidentalis lucida)* (Threatened) - Would not be in contact with waterfowl hunters, but occurs in several locations inhabited by mourning doves. The owls' nocturnal habits, silhouette, size, and color make it highly unlikely that it would be mistaken for a dove.

Effect Determination: Not likely to adversely affect

Northern aplomado falcon *(Falco femoralis septentrionalis)* (Endangered) - Inhabits savanna type areas, but may occasionally visit wetlands where migratory bird hunting could occur. Falcons are not similar in appearance to any legally-hunted game bird.

Effect Determination: Not likely to adversely affect

Piping plover *(Charadrius melodus)* (Threatened) - Piping plovers infrequently use areas utilized by waterfowl hunters. Plovers have no similarity in appearance to any legally-hunted game bird.

Effect Determination: Not likely to adversely affect

Red-cockaded woodpecker *(Picoides borealis)* (Endangered) - The secretive nature, small size, and complete lack of similarity between this woodpecker and any legally-hunted game bird makes it unlikely that it would be mistaken as such.

Effect Determination: Not likely to adversely affect

Red Knot (*Calidris canutus rufa*) Candidate Species

The rufa subspecies of red knot could be migrating and wintering along the Atlantic and Gulf coasts during hunting seasons for Rallidae and Scolopacidae species. Red knot could be present in coastal bays and marshes where hunting for rails or snipe occurs and could possibly be mistaken by inexperienced hunters. In recent times, however, we have not seen any reports of red knot being killed by hunters, so we believe the probability of that event is very low. Therefore, we believe that migratory bird hunting is not likely to adversely affect red knot.

Effect Determination: Not likely to adversely affect.

Southwestern willow flycatcher *(Empidonax traillii extimis)* (Endangered) - This small bird frequents habitats where waterfowl hunting may occur, but it is not similar in appearance to any legally-hunted game bird.

Effect Determination: Not likely to adversely affect

Whooping crane *(Grus Americana)* (Endangered) - Whooping cranes feed and roost in wetlands and upland grain fields where they associate with ducks, geese, and sandhill cranes.
They winter on the central Texas Gulf Coast where they associate with ducks, snow geese, and occasionally sandhill cranes. Shooting has been a matter of concern for recovery of whooping cranes. Most shooting incidents involving whooping cranes have been associated with the hunting of look-alike species, such as snow geese and sandhill cranes.

In response to an illegal shooting in 2004, and to reduce the chance of shooting a whooping crane, the State of Kansas is implementing a contingency plan with guidelines designed to achieve the following objectives:

I. To designate the appropriate response options and reporting requirements whenever whooping cranes are confirmed as sick, injured, or dead, or when they are healthy but in hazardous situations.

2. To inform and educate hunters as to the occurrence of whooping cranes in areas open to sandhill crane and waterfowl hunting so as to minimize accidental shooting incidents.

3. To reduce the likelihood of illegal shooting of whooping cranes by poachers or vandals.

4. To reduce whooping crane use of sites deemed to be a disease or pollutant hazard.

5. To increase the opportunity to recover and rehabilitate wild whooping cranes found injured or sick and to help identify causes of death of whooping cranes.

6. To gain sighting information on presence of whooping cranes outside of traditional summer and winter areas.

The contingency plan is intended for guidance in those areas where AWBP whooping cranes occur in the wild excluding their traditional summer and winter ranges. This includes Regions 2 and 6 of the Fish and Wildlife Service.

Effect Determination: Not likely to adversely affect

Yuma clapper rail *(Rallus longirostris yumanensis)* (Endangered) - It is possible that this rail could be confused with legally-hunted rail species. However, no interest exists for hunting rails in the range of the Yuma clapper rail. There are no known losses of the species as a result of legally hunting game birds and none are anticipated.

Effect Determination: Not likely to adversely affect

Region 3:

Piping plover, Kirtland's warbler, and Interior population of Least tern

We do not anticipate any adverse effects from the proposed hunting regulations. The timing of migratory bird hunting is such that hunters are not in the breeding habitat during nesting so disturbance at this crucial time doesn't happen because of migratory bird hunting. And although these species may be migrating through areas being hunted for migratory birds, information we have suggests that the migratory bird hunting regulations have no affect (we have gathered information for years on shooting of non-target species and have no information suggesting any of these species are taken).

Moreover, none of these species resemble any hunted migratory bird, and therefore it is unlikely that lawful hunting activities will adversely affect these listed species.

Effect Determination: No effect.

Piping plover critical habitat

Designated critical habitat for the piping plover occurs within Region 3 in areas of Minnesota, Illinois, Indiana, Michigan, Ohio, and Wisconsin. Migratory hunting activities are not likely to occur within these designated areas as critical habitat is confined to the sandy beach areas along the shores of the Great Lakes and Pine and Curry Islands of Lake of the Woods. Thus, we believe the proposed action will not affect piping plover critical habitat.

Effect Determination: The action is not likely to affect that critical habitat. Therefore, there is no destruction or adverse modification of critical habitat.

Whooping crane

The whooping cranes found within Region 3 belong to a recently introduced population in Wisconsin. This population is classified as a nonessential experimental population, and for section 7 purposes, only whooping cranes using National Wildlife Refuge and National Park Service lands are applicable to our analyses.

The main reintroduction release site for this whooping crane population is Necedah National Wildlife Refuge (NWR) in central Wisconsin. Other National Wildlife Refuges within Region 3 that are or may be utilized by whooping cranes in the summer or during the spring and fall migration include Horicon NWR and Fox River NWR in Wisconsin, Upper Mississippi NWR in Illinois and Wisconsin, and Muscatatuck NWR in Indiana. All of these Refuges also allow migratory game bird hunting, and thus, whooping cranes using these sites during that time may be exposed to disturbance and possible mortality from the proposed migratory game bird regulations.

Although incidental shooting or disturbance could occur, we believe for the following reasons that the likelihood of either is low: 1) the small number of birds in the population; 2) the limited time period when these whooping cranes are exposed to threats from hunting; 3) the limited area to which this analysis applies (only those Refuge lands open to hunting); and 4) the lack of sandhill crane hunting seasons within the action area. Each of these risk factors

contrasts greatly with the risks to which the natural wild flock of migratory whooping cranes is exposed. Therefore, we believe that this risk is very low, and may be considered to be discountable.

Effect Determination: Not likely to adversely affect.

Region 4:

Ivory-billed Woodpecker *(Campephilus principalis)* [E]

In April 2005, rediscovery of the endangered ivory-billed woodpecker (IBWO) on Cache River National Wildlife Refuge (NWR) in Monroe County, east-central Arkansas was announced. The rediscovery in Arkansas of the IBWO constitutes the only confirmed occurrence of the species throughout its historical range in the southeastern United States since the 1940's. While the recent rediscovery gives renewed hope of finding the species outside of eastern Arkansas, lack of confirmed reports suggests that the species is extirpated or rare elsewhere in its former range.

Overlap in habitat use, frequently poor visibility, and potential for misidentification make duck hunting the most likely form of migratory game bird hunting to potentially result in direct (e.g., accidental shooting) impacts to IBWO. It should be noted that we have no record of take of IBWO incidental to regulated activities associated with harvest of waterfowl or other migratory birds. While activities authorized by the proposed regulations may affect IBWO through disturbance, Pileated woodpecker and other non-game birds remain common and sustainable within areas of high public hunting pressure. This suggests that the potential indirect effects of migratory game bird hunting do not adversely affect the populations of other species occupying the same habitat. Since IBWO is only known from one localized area in eastern Arkansas, and it appears to be exceptionally rare anywhere it might occur, and because of the other considerations noted above, we conclude that the proposed action may affect but is unlikely to adversely affect the IBWO. The probability of the proposed regulations resulting in an adverse affect or in incidental take of IBWO is discountable. Though the accidental shooting of a single IBWO may be considered highly significant to the species, such an occurrence is extremely unlikely. As an extra precaution in the area of eastern Arkansas, where the only confirmed reports of IBWO exist, educational information is provided for hunters. This further diminishes the possibility for incidental take due to migratory game bird hunting.

Although the likelihood of possible adverse effects related to the proposed hunting regulations are considered negligible, the following conservation actions have been developed to avoid adverse effects:

1) Continue the use of the required refuge hunting permit which includes information on the ivory-billed woodpecker along with Sibley colored illustrations of both male and female IBWOs, pileated woodpeckers, wood ducks, and red-headed woodpeckers;
2) Refurbish as necessary, entrance signs with special information alerting visitors that they are entering IBWO habitat and may see one;
3) Retain existing hunt brochure and permit wording cautioning hunters to be sure of their targets due to the similarities in flight between the IBWO and

pintail;
4) Continue the use of refuge tear sheets with IBWO/refuge information;
5) Refurbish as needed, the large information panels at refuge HQ with IBWO information;
6) Retain the Managed Access Area boundary and distinction and allow unregulated public access with contingency plans in place to reinstate regulated access if needed;
8) Law enforcement officers will monitor public use at the State Highway 17 access and provide additional coverage at peak use periods. Peak use periods will coincide with hunting seasons and organized birding events;
9) Refurbish the boundary of the Managed Access Area as needed with special boundary signs; and
10) Continue to coordinate with the Arkansas Game and Fish Commission.

Effect Determination: Not likely to adversely affect. See conservation recommendations above.

Audubon's crested caracara *(Polyborus plancus audubonii)* [T]

The caracara's size and appearance virtually eliminate the possibility of this species being accidentally shot, so no adverse effect is likely.

Effect Determination: Not likely to adversely affect.

Brown pelican *(Pelecanus occidentalis)* [E]

Although the brown pelican occurs in coastal locations where waterfowl hunting may occur, its unique appearance makes it unlikely for hunters to mistake it for waterfowl.

Effect Determination: Not likely to adversely affect.

Cape Sable seaside sparrow *(Ammodramus maritimus mirabilis)* [E]

The small size and solitary habits of this sparrow, coupled with the fact that it does not resemble any species covered in the regulations, preclude the likelihood of incidental take.

Critical habitat for the Cape Sable seaside sparrow has been designated in Collier, Miami-Dade, and Monroe Counties, Florida. This action does not affect that area and no destruction or adverse modification of that critical habitat is anticipated.

Effect Determination: Not likely to adversely affect.

Everglade snail kite *(Rostrhamus sociabilis plumbeus}* [E]

The Recovery Plan points out possible pre-nesting disturbance problems posed by waterfowl hunters, however, further review by Region 4 determined that there was no overlap between waterfowl hunting and kite activity.

Critical habitat for the Everglade snail kite has been designated in three conservation areas of the Everglades National Park and the Loxahatchee NWR, Florida. This action does not affect that area and no destruction or adverse modification of that critical habitat is anticipated.

Effect Determination: Not likely to adversely affect.

Florida grasshopper sparrow *(Ammodramus savannarum floridanus)* [E]

This small brown upland sparrow would not be confused with any species covered by the regulations.

Effect Determination: Not likely to adversely affect.

Florida scrub jay *(Aphelocoma coerulescens)* [T]

The scrub jay's unique blue coloration combined with the upland habitat preference of this species make incidental take unlikely.

Effect Determination: Not likely to adversely affect.

Least tern *(Sterna antillaruni)* (Interior population) [E]

The silhouette, feeding habits, and flight patterns of the interior least tern make the likelihood of incidental take virtually impossible.

Effect Determination: Not likely to adversely affect.

Mississippi sandhill crane *(Grus canadensis pulld)* [E]
These cranes are confined to a fairly small section of Jackson County, Mississippi. As they would not be mistaken for any legally hunted migratory birds in that area, no adverse effect is anticipated.

Critical habitat for the Mississippi sandhill crane has been designated on the Mississippi Sandhill Crane NWR in Jackson County, Mississippi. This action does not affect that area and no destruction or adverse modification of that critical habitat is anticipated.

Effect Determination: Not likely to adversely affect.

Piping plover *(Charadrius melodus)* [E]

Any encounters with plovers would occur on the wintering ground, however, these are virtually all sandy beaches where little waterfowl hunting occurs. The small sandy-colored plovers do not resemble any species covered by these regulations, so incidental take is not anticipated.

Critical habitat for the Great Lakes Piping plover has been designated for breeding habitat along the shorelines of the Great Lakes in New York, Minnesota, Illinois, Indiana, Michigan, Ohio, Pennsylvania, and Wisconsin; as well as their wintering habitat along the Gulf Coast in

Texas, Louisiana, Alabama, and Florida. This action does not affect that area and no destruction or adverse modification of that critical habitat is anticipated.

Effect Determination: Not likely to adversely affect.

Puerto Rican broad-winged hawk *(Buteoplatypterm brunnescens)* [E]

This raptor is restricted to montane, primarily government-owned forest in Puerto Rico. The bird is an extremely rare, small, dark chocolate colored hawk. The silhouette, habitat, and rarity of this species make it extremely unlikely that they would be incidentally taken during lawful hunting.

Effect Determination: Not likely to adversely affect.

Puerto Rican nightjar *(Caprimulgus noctitherus)* [E]

The secretive nature, drab appearance, and nocturnal feeding habits of the Puerto Rican nightjar make incidental take virtually impossible.

Effect Determination: Not likely to adversely affect.

Puerto Rican parrot *(Amazona vittatd)* [E]

Although deliberate shooting for food and to protect crops has been a significant mortality factor, there is no correlation with the proposed regulations. The El Verde Closure Area on Puerto Rico (58 FR 41608) will continue in effect. No incidental take is anticipated.

Effect Determination: Not likely to adversely affect.

Puerto Rican Plain pigeon *(Columba inornata wetmorei)* [E]

Poorly regulated hunting contributed substantially to the decline of this species, and some pigeons are still being shot either deliberately or when mistaken for the legally hunted red-necked pigeon, which is similar in appearance to the plain pigeon. To preclude shooting losses, the Service has established closed areas on Puerto Rico consisting of Cidra Municipality and portions of Aguas, Buenas, Caguas, Cayer, and Come Rio Municipalities (56 FR 41608). This should preclude any incidental take.

Effect Determination: Not likely to adversely affect.

Puerto Rican sharp-shinned hawk *(Accipiter striatus venator)* [E]

This raptor is restricted to montane, primarily government-owned forest in Puerto Rico. The adults are small, dark slate grey on top and heavily barred rufous underneath. Immature birds are brown above and heavily streaked below. The silhouette, habitat, and rarity of this species make it unlikely that they would be incidentally taken during lawful hunting.

Effect Determination: Not likely to adversely affect.

Red-cockaded woodpecker *(Picoides borealis)* [E]

The secretive nature, small size, and complete lack of similarity between this woodpecker and any hunted migratory species preclude adverse effects from migratory bird hunting regulations.

Effect Determination: Not likely to adversely affect.

Red Knot (*Calidris canutus rufa*) Candidate Species

The rufa subspecies of red knot could be migrating and wintering along the Atlantic and Gulf coasts during hunting seasons for Rallidae and Scolopacidae species. Red knot could be present in coastal bays and marshes where hunting for rails or snipe occurs and could possibly be mistaken by inexperienced hunters. In recent times, however, we have not seen any reports of red knot being killed by hunters, so we believe the probability of that event is very low. Therefore, we believe that migratory bird hunting is not likely to adversely affect red knot.

Effect Determination: Not likely to adversely affect.

Roseate tern *(Sterna dougallii)* [T]

The silhouette, feeding habits and flight patterns of the roseate tern make the likelihood of incidental take virtually impossible.

Effect Determination: Not likely to adversely affect.

Wood stork *(Mycteria americand)* [E]

Although migratory bird hunting occurs within the range of the wood stork, they are not likely to be incidentally taken because they do not resemble hunted species.

Effect Determination: Not likely to adversely affect.

Yellow-shouldered blackbird *(Agelaius xanthomus)* [E]

Yellow-shouldered blackbird's distinct coloration and habitat preferences preclude the possibility of incidental take.

Critical habitat for the yellow-shouldered blackbird has been designated in Puerto Rico and nearby Mona Island. This action does not affect that area and no destruction or adverse modification of that critical habitat is anticipated.

Effect Determination: Not likely to adversely affect.

Whooping Crane *(Grus americana)* [E]

The Whooping Crane (WHCR) was listed as endangered on March 11, 1967, (32 FR 4001). On January 22, 1993, WHCR was designated as a non-essential experimental population in the states of Colorado, Idaho, Florida, New Mexico, and Western half of Wyoming (58 FR 5647-5658). The non-essential experimental population status was extended to the states of Alabama, Arkansas, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, North Carolina, Ohio, South Carolina, Tennessee, Virginia, Wisconsin, and West Virginia on June 26, 2001, (66 FR 33903-33917) to accommodate reintroduction efforts in the Eastern United States. Critical habitat was designated on May 15, 1978, in nine areas within their 2,400-mile migration route, between northeastern Alberta and east-central Texas. Four of these critical habitat locations were subsequently removed in 1997. The remaining five areas of critical habitat occur within Idaho, Kansas, Nebraska, Oklahoma, and Texas, primarily on Federal lands. Thus, critical habitat designations do not apply to Region 4.

The WHCRs from migratory and non-migratory populations occur in Region 4. The first reintroduced population of WHCRs were released on the Kissimmee Prairie area of central Florida, and is designated a non-essential experimental population. From 1993 to 2005, 289 isolation-reared cranes were released in this area, in an effort to establish a non-migratory flock. As of June 2009, there were 26 surviving individuals being monitored in this population.

A second reintroduction project of a non-essential experimental population was initiated in 2001 to establish an eastern migratory flock of WHCRs that would breed in central Wisconsin and winter in west-central Florida. Each year, 15 to 25 fledgling age individuals that were captive born and reared in isolation at the Necedah NWR in Wisconsin, have been led behind ultralight aircraft to Chassahowitzka NWR and also to St. Marks NWR in 2009 to facilitate learning of migratory routes and behavior. As of June 2009, there were 79 birds (48 males and 31 females) in this migratory population. This includes twelve breeding pairs, seven sub adult pairs and 41 unpaired adults and sub adults. This also includes one wild born chick that was taught the migration route by its parents and is now an adult and is part of a breeding pair. Individuals from this population migrate to and from the core wintering area in central Florida, principally following a course through western Georgia, eastern Alabama, central Tennessee, western Kentucky and on through Region 3 to the core breeding area of central Wisconsin. The wintering population may occur anywhere in Region 4. During 2008-2009, the migratory flock winter distribution included 44 individuals in Florida, South Carolina (4), Georgia (4), Alabama (9) Tennessee (18), and Indiana (1).

With the exception of individuals that may stray from the population of WHCRs wintering in and around Aransas NWR in Texas, cranes found in Region 4 consist of individuals from non-essential experimental populations. Following section 10(j) of the Endangered Species Act, each member of an experimental population shall be treated as a threatened species and further states that any experimental population considered to be non-essential to the continued existence of a species will be treated as a species proposed to be listed, except when it occurs in an area within the National Wildlife Refuge System or the National Park System where it would be considered threatened for the purposes of section 7. Therefore, WHCRs from non-essential experimental populations are afforded more protection (or more protection must be extended) where they occur on national parks and national wildlife refuges.

For migratory WHCR populations, migratory game bird hunting seasons have a considerable amount of overlap with periods of fall migration. Fall migration starts in mid-September and may continue until mid-November with stragglers arriving on wintering areas as late as early January. Following restrictions on season length, species hunted, bag limits, etc., Federal migratory game bird frameworks typically permit hunting between September 1 and January 25. Migratory routes followed by WHCRs occur in and adjacent to areas where waterfowl and other migratory game bird hunting activity are allowed.

Establishment of hunting regulations for certain migratory game birds could result in the accidental death of WHCRs. Due to similarities of appearance and shared habitat use, Sandhill crane and "light goose" (i.e., snow goose, Ross's goose) hunting are the most likely forms of migratory game bird hunting to potentially result in direct (e.g., accidental shooting) take of WHCR. In the past, WHCRs have been shot when mistaken for geese and could be mistaken for sandhill cranes, especially before sunrise and when weather conditions restrict visibility. Other forms of migratory game bird hunting, such as dove, woodcock and certain types of duck hunting have extremely limited potential to put hunters in contact with WHCRs. Since 1968, records document two WHCRs taken during goose hunting seasons in Texas, one attempted take in New Mexico, and another was hit but not killed during the hunting season (location unknown). One whooping crane was shot and killed out of season in Texas on November 14, 2003. Two (possibly 3) birds were killed by sandhill crane hunters in central Kansas in November 2004. In nine of the last 11 years, WHCRs have been confirmed in snow goose or sandhill crane hunt areas in the Dakotas, Nebraska, Kansas, Oklahoma, Colorado, Wyoming, and Texas. These cranes were monitored and in some instances, a small area was closed to hunting until they departed. None of these birds were injured or lost because of the hunting activities. Most recently, a WHCR was shot and killed in northern Alabama during the 2004-2005 hunting season. This bird was determined to be from the non-essential experimental migratory population that breeds in Wisconsin and winters in central Florida.

In addition to illegal shooting, WHCRs are exposed to hazards such as collision with obstructions, predators, and disease. Snow and hail storms, low temperatures and drought can present navigational handicaps or reduce food availability. Collision with powerlines is the most prevalent cause of death for cranes, accounting for the death or serious injury of at least 42 birds in three populations between 1956 and 2005. Direct habitat loss from draining and clearing of wetlands and human disturbance in breeding areas and along the migration routes is expected to continue. Conversion of wetlands and prairie to hay and grain production made much of their original habitat unsuitable. Most deaths, other than those of chicks, occur during migration and in the summer. Deaths from April through November are three times greater than deaths on the wintering grounds. The frequent stopovers necessary during migration become hazardous with more agricultural activities, industrial sites and fewer suitable resting sites.

Lead poisoning because of hunting is a continuing problem for target and non-target species. This concern is substantiated in the report from the United States Geological Survey National Wildlife Health Centers Wildlife Mortality Database, which details endangered and threatened species cases collected between Sept 1, 2002, and February 28, 2003, that were associated with hunting activity, gunshot wounds or lead poisoning. Though use of lead shot for hunting waterfowl and certain other migratory game birds is prohibited, some hunters continue to illegally use lead shot in waterfowl hunting areas, some of which are

frequented by listed species. The extent to which lead poisoning caused by imbedded or ingested shot pellets affects WHCRs is largely undocumented.

The above information suggests that while accidental shootings of WHCRs are possible and have occurred in the past as a result of past hunting regulations, the likelihood of take of the WHCR remains extremely low as to be discountable. The proposed action may result in hunting activities in or adjacent to known occurrences of migratory and non-migratory WHCRs within Region 4, but very rarely would they result in take. Death or injury of WHCRs in association with migratory game bird hunting is infrequent, and measures such as the cooperative Federal-State plan are in place to protect them. Therefore, as it relates to Region 4, we conclude that the proposed action may affect but is not likely to adversely affect this species.

Effect Determination: May affect but not likely to adversely affect.

Region 5:

Piping plover *(Charadrius melodus)* [T] and roseate tern *(Sterna douglalli)* [E]

No effect. They have migrated south prior to any waterfowl seasons.

Critical habitat for the Great Lakes Piping plover has been designated for breeding habitat along the shorelines of the Great Lakes in New York, Minnesota, Illinois, Indiana, Michigan, Ohio, Pennsylvania, and Wisconsin. Critical habitat for wintering piping plovers has been designated along the Gulf Coast in Texas, Louisiana, Alabama, and Florida. To date, no breeding habitat for the Atlantic piping plover or roseate tern has been proposed for Critical Habitat. This action does not affect any of these areas and no destruction or adverse modification of critical habitat is anticipated.

Effect Determination: Not likely to adversely affect.

Red-cockaded woodpecker *(Picoides borealis)* [E]

The secretive nature, small size, and complete lack of similarity between this woodpecker and any hunted migratory species preclude adverse effects from migratory bird hunting regulations. Further, because known occurrences of this species in Virginia are limited to lands where migratory bird hunting is not allowed, and any birds that leave that area differ in appearance from legal game, this action is not likely to adversely affect red-cockaded woodpeckers.

Effect Determination: Not likely to adversely affect.

Red Knot (*Calidris canutus rufa*) Candidate Species

The rufa subspecies of red knot could be migrating and wintering along the Atlantic and Gulf coasts during hunting seasons for Rallidae and Scolopacidae species. Red knot could be present in coastal bays and marshes where hunting for rails or snipe occurs and could possibly be mistaken by inexperienced hunters. Historically, red knots were targeted by market hunter and were killed in huge numbers on Cape Cod, Long Island, and other coastal

areas and shipped via rail by the barrels to major cities. In recent times, however, we have not seen any reports of red knot being killed by hunters, so we believe the probability of that event is very low. Therefore, we believe that migratory bird hunting is not likely to adversely affect red knot.

Effect Determination: Not likely to adversely affect.

Canada Lynx (*Lynx canadensis*) [E]

The secretive nature and complete lack of similarity between the Canada lynx and any hunted migratory species preclude adverse effects from migratory bird hunting regulations. Although three lynx have been illegally shot in Maine in 2000, these shootings occurred outside of the migratory bird hunting seasons and there is no information to support a connection between the proposed action and the shooting of lynx.

Effect Determination: Not likely to adversely affect.

Region 6:

Least tern *(Sterna antillarum)* (Interior population) [E], piping plover *(Charadrius melodus)* [T], Mexican spotted owl *(Strix occidentalis lucida)* [T]

It is highly unlikely that these listed birds would be adversely affected by implementation of the proposed migratory game bird hunting regulations. It is unlikely that these species would be misidentified for any bird species covered by these regulations. Some losses of these species occur each year to other causes, but Region 6 has no current records of take by migratory bird hunters.

Critical habitat for the Northern Great Plains piping plover has been designated in areas of Texas, Louisiana, Alabama and Florida for their wintering habitat along the gulf coast; and areas of Minnesota, Montana, North Dakota, and South Dakota, for breeding habitat. Critical habitat for the Mexican spotted owl has been designated on National Forest Service lands in Colorado and Utah. This action does not affect these areas and no destruction or adverse modification of critical habitat is anticipated.

Effect Determination: Not likely to adversely affect.

Southwestern Willow Flycatcher *(Empidonax traillii extimus)* [E]

The southwestern willow flycatcher is a small migratory songbird that is seasonally present (May-September) in riparian woodlands of the Southwest, with over 90 percent of breeding sites occurring in Arizona, New Mexico, and southern California. This species does occur in waterfowl and dove-hunting areas, but generally not during the hunting season. In the unlikely event that a southwestern willow flycatcher was present during the migratory bird hunting season it is unlikely that hunters would mistake them for a game bird because of their size, coloration, flight profile, and flight pattern.

Effect Determination: Not likely to adversely affect.

Southwestern Willow Flycatcher Critical Habitat

Critical habitat was designated for this species in Washington County, Utah. However, we do not expect any adverse effects to critical habitat from your proposed action as the proposed regulations would not alter the primary constituent element of this habitat.

Effect Determination: No effect.

Region 7

Aleutian Canada goose *(Branta canadensis leucopareid)* [Delisted March 20, 2001]
Although the Semidi Islands subpopulation is still low, the overall population of this species at the time of delisting far exceeded the levels established by the recovery plan. It is unlikely that sport hunting, with prudent restrictions in wintering areas, will reverse this population trend.

Effect Determination: No effect.

Eskimo curlew *(Numenius borealis)* [E]

It is unlikely that hunters will encounter Eskimo curlew, and migratory game bird hunting is not known to currently have an adverse effect on the species.

Effect Determination: No effect.

Spectacled eider *(Somateria flscheri)* [T]

Spectacled eiders are not likely to be shot accidentally by licensed sport hunters. The species has a very remote geographic range during the waterfowl hunting season. Spectacled eiders also do not concentrate around hunting villages like Barrow, Alaska, during their breeding seasons. Logistics, expense, and climate limit interest in hunting on St. Lawrence Island. Only hunters specifically interested in hunting eiders are likely to seek hunting opportunities at this remote location, as other sea duck species are more easily hunted elsewhere. The possibility exists that some eiders could be taken along the Yukon-Kuskokwim coast as hen eiders with young move to Norton Sound, but again the logistics and numbers of sport hunters in the area make this effect so unlikely as to be discountable.

There have been no records of take of spectacled eiders during the open hunting season due to misidentification by sport hunters. Male spectacled eiders are readily identified on water or in flight by distinct markings on the head, back, and wings. Although female spectacled eiders can be difficult to distinguish from female common or king eiders in some conditions, spectacled eiders typically flock separately from other species, which reduces the chance of misidentification.

Critical habitat for the spectacled eider has been designated in the Yukon-Kuskokwim Delta in Alaska. This action does not affect sport hunting in that area and no destruction or adverse modification of that critical habitat is anticipated due to sport hunting.

Effect Determination: Not likely to adversely affect.

Short-tailed Albatross *(Phoebastria albatrus)* [E]

The short-tailed albatross is the largest of the North Pacific albatrosses (adult wingspan can reach over 7 feet). All birds present in U.S. waters have a prominent pink bill. Adults have a white body with black on the wings. Some adults have a golden-colored hood. Immature birds are dark. There are many plumage variations between all dark and all light birds.

The short-tailed albatross nests exclusively on a few small volcanic islands off the coast of Japan but are regular visitors to the marine waters off Alaska. Because this rarely-encountered species looks unlike any species that may be harvested, and because it rarely ventures near shore, we believe that the chance of this species being harvested during the Fall/Winter Waterfowl Hunting Season is discountable.

Effect Determination: No effect.

Region 8 – California and Nevada

Brown Pelican *(Pelicanm occidentalis)* (Pacific coast population) [E]

Brown pelicans are one of the largest marine birds along the Pacific coast and are easily identified by their large bill and wingspan, and distinctive flight pattern. They feed almost entirely on fish including smelt, and anchovy; they will also consume crustaceans. Although brown pelicans occur in some migratory bird hunting areas, it is extremely unlikely that this species would be mistaken for any migratory game bird covered by the proposed regulations due to their size, unique appearance, and flight pattern. Hunting activities are not likely to disturb pelicans outside of their nesting grounds where they are generally tolerant of human presence and will readily move without a significant impact to their energetic requirements or feeding behavior.

The Pacific coast population of brown pelicans nest from the Channel Islands of southern California southward along the Baja California coast and in the Gulf of California to coastal southern Mexico. The only breeding population in United States waters is the Southern California Bight population, which consists of breeding birds on the Channel Islands and several islands off Baja California: West Anacapa Island, Santa Barbara Island, Isla Coronado Medio, and Isla Coronado Norte. Migratory game bird hunting is not anticipated in these areas; therefore, breeding pelicans will not be affected by the proposed regulations.

Effect Determination: Not likely to adversely affect.

California Condor *(Gymnogyps californianus)* [E]

A limited amount of band-tailed pigeon and mourning dove hunting occurs within the occupied range of this species. Hunters cannot mistake the condor for any legally hunted species of bird covered by the proposed regulations. The proposed regulations do not allow the use of lead shot for hunting waterfowl; therefore, lead poisoning of the California condor from eating waterfowl contaminated by lead shot is not an issue in this consultation.

Effect Determination: Not likely to adversely affect.

California Condor Critical Habitat

Critical habitat for the California condor has been designated in Los Angeles, Ventura, Santa Barbara, San Luis Obispo, Kern, and Tulare Counties, California. Although hunting for migratory game birds will occur in these areas, habitat components essential to the conservation of the condor will not be affected by the proposed action.

Effect Determination: The action is not likely to affect that critical habitat. Therefore, there is no destruction or adverse modification of critical habitat.

California Clapper Rail *(Rallus longirostris obsoletus)* [E]

The California clapper rail, one of the largest rails, is a year-round resident of coastal salt and brackish marshes and tidal sloughs of San Francisco Bay and Suisun Bay. Males and females are similar in appearance, with olive brown back and wings marked by dark brown streaks; the breast is rusty cinnamon, and black and white bars criss-cross its flanks. The breeding season of California clapper rails begins by February. Nesting starts in mid-March and extends into August. The end of the breeding season is typically defined as the end of August, which corresponds with the time when eggs laid during renesting attempts have hatched and young are mobile.

Migratory game bird hunting does occur in Suisun Bay and San Francisco Bay but not during the nesting season for California clapper rails. There are no legally hunted rail species within the range of the California clapper rail and are not likely to be confused for any legally hunted migratory game bird within their range. They are secretive, rarely fly, and spend most of their time hidden in thick marsh vegetation. Although hunters may temporarily displace California clapper rails this is expected to occur infrequently due to their preference for thick marsh vegetation. We do not expect the short-term temporary displacement of California clapper rails to significantly affect their ability to feed or shelter.

Effect Determination: Not likely to adversely affect.

Coastal California Gnatcatcher *(Polioptila californica)* [T]

The coastal California gnatcatcher is a small, long-tailed member of the old-world warbler and gnatcatcher family which is restricted to coastal southern California and Baja California, and is primarily found in coastal sage scrub communities. It is dark blue-gray above and grayish-white below. The tail is mostly black above and below. The male has a distinctive black cap, which is absent during the winter. The breeding season of the coastal California gnatcatcher extends from about February 15 through August 30, with the peak of nesting activity occurring from mid-March through mid-May.

Because of its relatively small size and the limited migratory game bird hunting opportunities in coastal sage scrub habitats, it is extremely unlikely that the gnatcatcher would be mistaken for any of the migratory game birds covered by the proposed regulations.

Hunters traversing coastal sage scrub habitats in southern California may cause gnatcatchers to temporarily alter their normal behavioral patterns. However, given the limited hunting

opportunities for migratory game birds in coastal sage scrub habitats, the short-term nature of any potential interactions between hunters and gnatcatchers, and the fact that hunting will not occur during the gnatcatcher breeding season, we believe that disturbance of gnatcatchers caused by the proposed regulations is rare and we do not anticipate that a temporary disruption of behavior patterns from proposed activities would be significant nor would it be likely to result in injury to individual birds.

Effect Determination: Not likely to adversely affect.

Coastal California Gnatcatcher Critical Habitat

Critical habitat for the coastal California gnatcatcher was designated, then remanded, but remains in place until a new, final rule designating critical habitat becomes effective. A new proposal for gnatcatcher critical habitat has been published in the Federal Register. Although hunting for migratory game birds may occur in areas designated or proposed as critical habitat, the proposed action would not result in the removal or degradation of habitat components essential to the conservation of the gnatcatcher.

Effect Determination: The action is not likely to affect that critical habitat. Therefore, there is no destruction or adverse modification of critical habitat.

California Least Tern *(Sterna antillarum)* [E]

The California least tern, the smallest member of the gull and tern family, is a colonial nesting shorebird that occurs along the coastline of California from April to September, where it nests on sandy beaches or mudflats near the ocean. This species does occur in waterfowl and dove-hunting areas, but generally not during the hunting season. In the unlikely event that a least tern was present during the migratory bird hunting season it is unlikely that hunters would mistake them for a game bird because of their size, coloration, flight profile, and flight pattern.

Effect Determination: No effect.

Inyo California Towhee *(Pipilo crissalis eremophilus)* [T]

This medium-sized, sparrow-like, nonmigratory songbird is restricted to riparian thickets and adjacent uplands in the remote southern Argus Mountains of Inyo County, California. Because this species occurs in a remote location, is limited in distribution, and because of the limited opportunities for migratory game bird hunting in this area (68 percent of its range is on Department of Defense lands), we expect that there is little overlap between the proposed action and the range of the species. In the event that migratory game birds are hunted in the towhee's range it is unlikely that it would be mistaken for a game bird, as it is not similar in appearance to any legally hunted species under the proposed regulations.

Effect Determination: Not likely to adversely affect.

Inyo California Towhee Critical Habitat

Critical habitat for the Inyo California towhee has been designated in the Argus Range in Inyo County, California. For the reasons stated above, there is little, if any, overlap between the proposed action and towhee critical habitat. In the event that there is overlap, the proposed action is not expected to cause removal or degradation of habitat components essential to the conservation of the towhee.

Effect Determination: The action is not likely to affect that critical habitat. Therefore, there is no destruction or adverse modification of critical habitat.

Least Bell's Vireo *(Vireo bellipusillus)* [E]

The least Bell's vireo is a small migratory songbird that is seasonally present (mid-March to mid-September) in thickets of riparian vegetation in southern California and Baja California. This species may occur in waterfowl and dove-hunting areas, but generally not during the hunting season. In the unlikely event that a least Bell's vireo was present during the migratory bird hunting season it is unlikely that hunters would mistake them for a game bird because of their size, coloration, flight profile, and flight pattern.

Effect Determination: No effect.

Least Bell's Vireo Critical Habitat

Critical habitat for the least Bell's vireo has been designated along 10 riparian areas in southern California. We are not aware of any migratory game bird hunting occurring in these areas. If migratory game bird hunting did occur in any of these areas it would not result in the alteration of any habitat components essential to the conservation of the vireo, namely riparian woodland vegetation that generally contains both canopy and shrub layers and includes some associated upland habitats.

Effect Determination: The action is not likely to affect that critical habitat. Therefore, there is no destruction or adverse modification of critical habitat.

Light-footed Clapper Rail *(Rallus longirostris levipes)* [E]

The light-footed clapper rail is a year-round resident in coastal wetlands of southern California and northern Baja California, Mexico. The light-footed clapper rail is found in freshwater and saltwater marshes containing cordgrass *(Spartina folio so),* cattails, rushes and dense vegetation.

Breeding season for the light-footed clapper rail is mid-March to mid-August. Mating pairs build an incubation nest for their eggs and usually one or more brood nests to serve as refuges for the young rails during high tide.

Hunting opportunities are extremely limited within the range of the light-footed clapper rail. Several of the marshes inhabited by this species are under Federal ownership and do not allow hunting at all. In fact, hunting is prohibited in most of the coastal marshes in southern California because of their proximity to urban areas. Furthermore, migratory game bird hunting does not occur during the nesting season for the light-footed clapper rail. There are

no legally hunted rail species within the range of the light-footed clapper rail and it is not likely to be confused for any legally hunted migratory game bird within their range. They are secretive, rarely fly, and spend most of their time hidden in thick marsh vegetation. Although hunters may temporarily displace light-footed clapper rails this is expected to occur infrequently due to their preference for thick marsh vegetation. We do not expect any short-term temporary displacement to be significant to the rail's ability to feed or shelter because it would occur outside fo the light-footed clapper rail nesting season.

Effect Determination: Not likely to adversely affect.

Marbled Murrelet *(Brachyramphus marmoratus)* (Washington, Oregon, and California Population) [T]

The marbled murrelet is a small diving seabird that breeds along the Pacific coast of North America from the Aleutian Archipelago and southwestern Alaska to central California. It forages almost exclusively in the nearshore marine environment, but flies inland to nest in mature conifer trees located in forest stands with old-growth forest characteristics. Marbled murrelet nesting occurs over an extended period from late-March to late-September. Murrelets have been detected at inland sites throughout the year but it is believed that most individuals go out to sea for extended periods during the winter.

The marbled murrelet occurs in several coastal and forest locations containing band-tailed pigeons and mourning doves. Hunters are unlikely to mistake a marbled murrelet for any legally hunted migratory game bird, as it is not similar in appearance to any legally hunted species under the proposed regulations. Noise associated with gunshots from legal hunting activities and hunters moving through the forest are unlikely to significantly alter breeding of murrelets because the proposed action will occur outside of the murrelet breeding season. There have been no records of take of marbled murrelets during open hunting season due to misidentification by sport hunters. Any temporary displacement of murrelets during marine/estuarine hunting activities is not expected to result in a measurable adverse effect to murrelet breeding, foraging, or loafing because they are likely to simply move away from the disturbance and continue their loafing or feeding activities elsewhere.

Effect Determination: Not likely to adversely affect.

Marbled Murrelet Critical Habitat

Critical habitat for the marbled murrelet has been designated in old growth forests of Washington, Oregon, and California. The proposed action will have no effect on old growth habitat function or value and therefore will not affect marbled murrelet critical habitat.

Effect Determination: The action is not likely to affect that critical habitat. Therefore, there is no destruction or adverse modification of critical habitat.

Northern Spotted Owl *(Strix occidentalis caurina)* [T]

The northern spotted owl is a dark brown medium-sized owl with a barred tail and white spots on the head and breast. It inhabits mature and old growth forests from northwestern California to southwestern British Columbia. Spotted owls begin courtship activities in late February or

March, most eggs hatch in late April or May, and the majority of young fledge in June.

The northern spotted owl occurs in several coastal locations within Region 1 where hunting for band-tailed pigeons and mourning doves may occur. The spotted owl's nocturnal habitats, its silhouette, size, and color make it highly unlikely that it would be mistaken for a band-tailed pigeon or a mourning dove. Noise associated with gunshots from legal hunting activities and hunters moving through the forest are unlikely to significantly alter breeding, feeding, or sheltering of owls because the proposed action will occur outside of the owl breeding season.

Effect Determination: Not likely to adversely affect.

Northern Spotted Owl Critical Habitat

Critical habitat for the northern spotted owl has been designated in old growth forests of Washington, Oregon, and California. The proposed action will have no effect on old growth habitat function or value and therefore will not affect northern spotted owl critical habitat.

Effect Determination: The action is not likely to affect that critical habitat. Therefore, there is no destruction or adverse modification of critical habitat.

Southwestern Willow Flycatcher *(Empidonax traillii extimus)* [E]

The southwestern willow flycatcher is a small migratory songbird that is seasonally present (May-September) in riparian woodlands of the Southwest, with over 90 percent of breeding sites occurring in Arizona, New Mexico, and southern California. This species does occur in waterfowl and dove-hunting areas, but generally not during the hunting season. In the unlikely event that a southwestern willow flycatcher was present during the migratory bird hunting season it is unlikely that hunters would mistake them for a game bird because of their size, coloration, flight profile, and flight pattern.

Effect Determination: No effect.

Southwestern Willow Flycatcher Critical Habitat

Critical habitat was designated for this species, but was then vacated. We are currently in the process of re-proposing critical habitat.

Effect Determination: Not likely to adversely affect.

Streaked Horned Lark *(Eremophila Aletris stigmata)* [C]

The streaked horned lark is a small, ground-dwelling songbird with conspicuous feather tufts, or "horns," on its head. Its back is heavily streaked with black, contrasting sharply with its deeply ruddy nape and yellow underparts. The streaked horned lark nests on the ground in sparsely vegetated sites in short-grass dominated habitats. Historically, this type of habitat was found in prairies in western Oregon and Washington. More recently, streaked horned larks have used manmade habitats for nesting, including fallow agricultural fields, lightly to

moderately grazed pastures, seasonal mudflats, airports, and dredged material islands in the Columbia River. Streaked horned larks are also found in dune habitats along the coast. This migratory species is generally believed to winter in California, but documentation is lacking. The horned lark nesting season extends from March to June.

Although the streaked horned lark may occur in some migratory bird hunting areas, it is unlikely that it would be confused with any migratory game bird species covered by the proposed regulations due to its size, coloration, flight pattern, and distinct silhouette. Furthermore, its nesting season, when it is most vulnerable to disturbance, does not overlap with the proposed hunting seasons. Although streaked horned larks may be disturbed on their wintering grounds, we do not anticipate that a temporary disruption of behavior patterns from proposed activities would be significant nor would it be likely to result in injury to individual birds.

Effect Determination: Upon listing not likely to adversely affect.

Western Snowy Plover *(Charadrius Alexandrians novices)* [T]

The western snowy plover, a small shorebird, breeds primarily on coastal beaches from Washington to Baja California and winters in coastal areas from southern Washington to Central America. It is pale gray-brown above and white below, with a white hind-neck collar and dark lateral breast patches, forehead bar, and eye patches.

The western snowy plover nesting season extends from early March through late September. While some snowy plovers remain in their coastal breeding areas year-round, others migrate south or north for winter. Most plovers that nest inland migrate to the coast for the winter. The departure from inland nesting areas begins by early July and is completed, except for stragglers, by mid-October.

Due to its small size, silhouette and flight pattern it is extremely unlikely that the western snowy plover would be confused with any migratory game bird species. Disturbance of nesting plovers is not anticipated under the proposed action because hunting seasons will not overlap with the nesting season.

The recovery plan for this species notes that sport of training falcons for hunting could result in losses of snowy plovers when it introduces predators to snowy plover habitats. However, because the proposed action includes a conservation measure that prohibits falconry activities in the vicinity of nesting colonies or nesting concentrations of Federally listed threatened and endangered shorebirds, the introduction of predators due to legal falconry practices will not occur.

Effect Determination: No effect.

Yellow-billed Cuckoo (Western U.S. **D.S.) *(Coccyzus americanus)* [C]**

The yellow-billed cuckoo is a medium sized bird that occurs in riparian habitats where waterfowl hunting may occur. This species has a slender, long-tailed profile, with a fairly stout and slightly down-curved bill. The tail feathers are boldly patterned with black and white below. The breeding season for the yellow-billed cuckoo generally begins with pair

formation in mid-June and lasts until mid-August. Yellow-billed cuckoos annually migrate to wintering grounds in South America. Spring migration begins in late May and lasts until late June, and fall migration begins in late August and lasts until mid-September.

We do not anticipate adverse effects to this species as a result of the proposed action because it is not present in the action area during the migratory game bird hunting season.

Effect Determination: Upon listing, no effect.

Yuma Clapper Rail *(Rallus longirostris yumanensis)* [E]

The Yuma clapper rail is a marsh bird with a short tail, long legs, a downcurved beak, and short rounded wings that uses freshwater marsh habitats. Within Region 1 & 8, this species occurs year-round along the lower Colorado River and at the Salton Sea. The mating season for Yuma clapper rails occurs from mid March to July.

Migratory game bird hunting occurs in these areas but hunting is limited to ducks, geese, coots, and moorhens; there are no legally hunted rail species within the range of the Yuma clapper rail in Region 1 & 8. These rails are secretive, reluctant to fly, and are not likely to be confused for any legally hunted migratory game bird along the lower Colorado River or at the Salton Sea. Migratory game bird hunting will not occur during the nesting season for the Yuma clapper rail and we believe that disturbance of Yuma clapper rails caused by the proposed regulations is rare. We do not anticipate that a temporary disruption of behavior patterns from proposed activities would be significant nor would it be likely to result in injury to individual birds.

Effect Determination: Not likely to adversely affect.