RECORD OF DECISION
JACKSON HOLE, WYOMING
FLOOD PROTECTION PROJECT

INTRODUCTION

This record documents the decision for the Corps of Engineers to assume operation and maintenance (O&M) of the existing Federally-constructed and non-Federally constructed levee system at Jackson Hole, Wyoming, as authorized by Section 840 of the Water Resources Development Act (WRDA) of 1986 and described in the Jackson Hole, Wyoming, Flood Protection Project, Final O&M Decision Document and EIS, dated May 1990.

BACKGROUND

The existing levee system consists of Federally authorized and constructed levees on the Snake River and non-Federal levees constructed by non-Federal parties. This levee system is located on the Snake and Gros Ventre Rivers near Jackson Hole, Wyoming. The Federal project was authorized by the River and Harbor Act of 1950, Public Law 81-516. Construction began in 1957 and was completed in 1964. Additional levees were constructed by non-Federal interests outside of the limits of the Corps of Engineers Federal project. These additional levees were constructed by the State of Wyoming, Teton County, Soil Conservation Service, and private landowners. During emergency actions, the U.S. Army Corps of Engineers assisted non-Federal interests in the construction of levees under the emergency authority of Public Law 84-99. The non-Federal construction includes levees on the Gros Ventre River and levees on the Snake River upstream and downstream of the Federal levee project. Operation and maintenance of the Federal and non-Federal levees was not the responsibility of the Corps of Engineers. The operation and maintenance of the Federal and non-Federal levees was the responsibility of local interests, primarily Teton County. The WRDA of 1986 provides that the operation and maintenance of the Federally authorized project, and additions and modification thereto constructed by non-Federal sponsors shall be the responsibility of the Secretary of the Army, and that the non-Federal sponsor shall provide for certain cost-sharing requirements.

ALTERNATIVES STUDIED

The proposed Federal action is Federal assumption of operation and maintenance of the levees in Jackson Hole, Wyoming. The alternatives related to levee operation and maintenance at their current level of flood protection.

The Corps considered several alternatives of levee maintenance and investigated three alternatives in detail. The three detailed alternatives were later reduced to two alternatives in the Draft and Final Environmental Impact Statement (DEIS and FEIS).

Alternative A was the "no action" alternative. Under this alternative, the Corps would not assume operation and maintenance of the levees, but would continue to provide emergency assistance to Teton County in flood fights. Although the Corps would not take responsibility for the maintenance action, it can be assumed that another organization, specifically Teton County, would retain the responsibility of maintaining the levee system because of the protection provided by the levees to landowners and transportation. Considerable development has taken place on private property along the Snake River, particularly around Wilson and northward along State Route 390 toward Moose. Private landowners and developers would suffer significant property and economic losses if the Federal levee on the right bank of the Snake River was allowed to fail. Several non-Federal levees located downstream near the South Park Bridge are important in protecting the bridge and highway crossing and are important in providing other flood control benefits. Consequently, it is reasonable to assume that local and/or State authorities or others would continue to maintain the levees in the absence of maintenance action by the Corps. The costs for the maintenance program in this case would be borne by the organization implementing the activities.

Alternative B involves the Corps taking over responsibility of operation and maintenance of existing Federal and non-Federal levees. This would include responsibility for 18 Federal and non-Federal levees on the Snake River from Grand Teton National Park to the South Park Bridge, plus 3 non-Federal levees located on the lower reach of the Gros Ventre River. All of the levees were constructed, operated and maintained prior to passage of the Water Resources Development Act of 1986. Maintenance activities would include removing snow from the tops of the levees in early April to allow and facilitate access for patrolling and flood fights, conducting emergency repairs when high flows damage the levees and threaten levee failure, rock quarrying and stockpiling operations to obtain levee materials, removing perennial vegetation (trees) from levees, removal and disposal of snags that might damage the levees, and maintenance of culverts and roads providing access to the levees. The cost of conducting these activities would be assumed by the Federal Government, subject to local cost-sharing provision in Section 840 of WRDA 86.

TECHNICAL STUDIES

Detailed environmental, economic, and engineering studies were conducted on two alternatives. The alternatives differ only in regard to who has responsibility for maintaining the levees, and would result in similar short-term and long-term effects on the environment. Levee maintenance activities would have minor physical influences on channel morphology, water quality, and disturbance or nuisance effects related to wildlife, recreation,

and aesthetics. The magnitude, timing, and duration of these activities would be similar for both alternatives because the alternatives encompass the same extent of levees and the same kinds of operation and maintenance. Mitigation recommendations made by the U.S. Fish and Wildlife Service (USFWS) regarding the effects from normal maintenance activities, which are described in the USFWS Coordination Act Report (CAR) dated April 1990, prepared in association with the Final Decision Document and EIS, have been adopted by the Corps as described in the FEIS.

Results of the economic analysis indicated that the operation and maintenance of all Federal and non-Federal levees is economically justified.

The existing quarry has limited quantity and quality of riprap for operation and maintenance of the levees for the next several years. Additional technical studies will be necessary to address the future need for a new quarry. Appropriate environmental documentation fully addressing quarry development, including alternatives and environmental impacts, will be prepared in conjunction with any future quarry selection.

PUBLIC INVOLVEMENT AND COORDINATION

The National Environmental Policy Act (NEPA) process was officially initiated with a scoping meeting sponsored by the Corps and held at the Teton County Courthouse on January 31, 1989. Federal, State, and local agencies and key local interest groups were notified of the meeting by telephone or letter. The Corps presented the nature of the problem, the alternatives under consideration, the NEPA process, expected documentation, and answered questions from meeting participants.

Additional consultation and coordination took place throughout the preparation of the DEIS and FEIS. The Corps consulted with the USFWS concerning the preparation of the CAR and potentially affected threatened and endangered species.

The DEIS was officially filed with the U.S. Environmental Protection Agency (EPA) on December 8, 1989, and approximately 290 copies of the document were then distributed for public and agency review. The distribution package included both the Jackson Hole, Wyoming, Flood Protection Project Draft O&M Decision Document on the proposed Federal assumption of levee operation and maintenance and the full DEIS. A biological assessment addressing threatened and endangered species, prepared by the Corps; and a Fish and Wildlife CAR, prepared by the USFWS; were included as appendices to the DEIS. The comment period closed on February 20, 1990.

To facilitate public involvement and agency consultation concerning the DEIS, the Corps held informal workshops and a formal public hearing in Jackson Hole, Wyoming, on January 30, 1990. Corps staff were available to answer questions and discuss the project documents at separate morning and afternoon workshop sessions and to receive formal public comment during the hearing.

The FEIS was filed with EPA on April 27, 1990, and approximately 350 copies were distributed for public and agency review. The comment period was closed on May 29, 1990. All letters of comment received on the FEIS were considered during the preparation of this Record of Decision (ROD). No new significant concerns have been expressed during the review of the FEIS that were not expressed during the review of the DEIS and addressed in the FEIS or this Record of Decision.

PUBLIC CONCERNS

Mitigation for the existing levee system was by far the dominant issue raised among the individual comments. The existing levees have had effects on the structure of the river and its associated aquatic and riparian habitats. The flood protection provided by the levees has allowed or encouraged human development within the floodplain. These influences would presumably continue where levees are maintained; but, they would not be increased or accelerated because the proposed action maintains the existing level of flood protection. The operation and maintenance of these levees by the Federal government, rather than by local government, does not change the character of the river or the development surrounding the river.

The comments on mitigation reflected a variety of wording and addressed several specific aspects of the mitigation issue. Most of the comments requested or demanded that mitigation for long-term impacts caused by the prior construction, operation and maintenance of the levees be provided as part of this action. Many comments also requested that the Corps adopt specific mitigation measures, and provided an itemized list or referred to the measures recommended by the USFWS in the CAR appended to the DEIS and FEIS.

A number of the comments on the DEIS, particularly those from some agencies and organizations, raised legal issues and regulatory responsibilities and interpretations. Some comments maintained that the Corps had a responsibility to mitigate long-term impacts, and/or that this should be done with full Federal funding. Some comments alleged that the Corps was neglecting its responsibility under NEPA to provide mitigation for long-term effects. Many of the comments addressing responsibility for mitigation focused on specific authorities and obligations provided by Sections 840, 906, and 1135 of the WRDA of 1986. Comments in this group included statements that the Federal

operation and maintenance action constituted a "new" project that requires mitigation as part of the project, or they requested that the Corps commit to pursue or implement mitigation under Sections 906 and 1135 of the Water Resources Development Act of 1986. A few commentors noted a distinction between mitigation of past impacts versus current and future impacts, and argued that the operation and maintenance action required mitigation as part of the project for any impacts occurring subsequent to this decision.

The Wyoming Department of Environmental Quality in their letter dated May 21, 1990 indicated that air quality permits for open burning of river debris and snags will need to be obtained. The Corps will obtain the appropriate air quality permits if river debris and snags are burned.

MITIGATION

The Corps is adopting measures to mitigate for the effects attributable to operations and maintenance activities, which are those environmental consequences that are departures from the environmental baseline, departures from past operation and maintenance activities, or may represent a greater effect on the environment. Given the current environmental baseline, these consist of the effects resulting from the maintenance activities themselves. Minor environmental effects due to the change of operation and maintenance responsibility are avoided or minimized, as discussed in Section 4.4 in the DEIS and correspond to recommended measures 16a-c from the CAR. Measures adopted by the Corps are: the timing, location and disposal of debris removed from the levees will be coordinated with interested Federal, state and local agencies; habitat lost by debris removal will be replaced through placement of large boulders or other suitable material; and borrow areas for gravels will be sited to avoid sensitive fish and wildlife areas.

Measures for the long-term effects resulting from the construction of the levee system beginning in the 1950's are identified in the CAR and discussed in the DEIS and FEIS. The Corps recognizes that long-term effects resulting from the presence of the levees have occurred (these are specifically identified in the DEIS and FEIS). The Corps supports evaluating the fish and wildlife impacts resulting from the construction, operation and maintenance of the Jackson Hole levees as discussed below.

STUDY OF EXISTING LONG-TERM IMPACTS CAUSED BY PRIOR CONSTRUCTION

The Corps stated in the DEIS that mitigation for long-term effects would be addressed under other existing or new study authorities. The Corps indicated in the FEIS that in response to the concerns addressed by the public and resource agencies, that

the Corps will request study funding specifically to determine the scope and extent of mitigation required to compensate for the effects of levee construction on fish and wildlife resources. The Corps is also committed to solicit public and agency input in developing the scope for such a mitigation study and reviewing the study results.

On May 9, 1990, a study scoping meeting was held in Jackson Hole with Federal and State agencies and special interest groups. A draft plan of study was developed to address concerns expressed at that meeting, in the final USFWS CAR, and throughout the NEPA process regarding long-term ongoing impacts to natural resources in the project area.

A study resolution was adopted by the Senate Committee on Environmental and Public Works on June 12, 1990 that requests the Corps determine the advisability of mitigating for fish and wildlife impacts resulting from construction, operation and maintenance of the levees in Jackson Hole, Wyoming. The Corps will seek funding to conduct studies in accordance with this resolution. The Corps will continue to coordinate with Federal and State agencies, special interests groups and the public.

ENDANGERED SPECIES: SECTION 7 CONSULTATION

The Wyoming State Office of the USFWS stated in an April 26, 1990, letter that they did not concur in the Corps biological assessment determination of no effect in the FEIS and requested the Corps initiate formal consultation on the bald eagle under Section 7 of the Endangered Species Act. As requested, Section 7 consultation was initiated by letter from the Corps to USFWS on May 16, 1990, and the USFWS completed their Biological Opinion on July 10, 1990 and finding of no jeopardy and recommended reasonable and prudent measures. The Corps has considered all recommended reasonable and prudent measures and will implement these measures as described in the terms and conditions of the attached Biological Opinion.

ENVIRONMENTAL REQUIREMENTS

The Federal action is limited to maintenance actions as described in the FEIS and does not involve any new work or discharges of fill or dredge material into waters of the United States under Section 404 of the Clean Water Act. Repair of damaged levees is exempt under Section 404 of the Clean Water Act, as provided at 33 CFR 323.4(a)(2). Repair, rehabilitation, and replacement of damaged levees is permitted under the nationwide permits, as provided at 33 CFR 330.5 (a)(3).

In their letter dated May 3, 1990, the Wyoming State Historical Preservation Office (SHPO) reaffirmed a Letter of Agreement between the Corps and SHPO, dated October 21, 1986, regarding ongoing maintenance work on sections of the Jackson Hole levees and has no objections to the project. This letter represents full compliance with cultural resources requirements associated with the operation and maintenance of the project.

Full compliance with the Endangered Species Act is obtained through completion of the formal consultation process. This ROD documents the Corps agreement to comply with all reasonable and prudent measures contained in the July 10, 1990, USFWS Biological Opinion. The Corps will develop an environmental monitoring program to ensure implementation of mitigation measures identified in the FEIS, and reasonable and prudent measures of the USFWS Biological Opinion prepared under the Endangered Species Act.

With the completion of the above, the operation and maintenance project is in full compliance with all State and Federal environmental requirements.

DECISION

After careful consideration of the alternatives discussed above, the proposed mitigation study for long-term effects, reasonable and prudent measures for endangered species, and the extensive public input in this process, I have selected alternative B as described in the FEIS for implementation. This action is limited to maintenance actions as described in the DEIS and FEIS and does not involve any new work or discharges of fill or dredge material into waters of the United States under Section 404 of the Clean Water Act, other than permitted maintenance activities.

FURTHER INFORMATION

Further information concerning this project and ROD may be obtained by contacting the Chief of the Environmental Resources Branch, Department of the Army, Walla Walla District, Corps of Engineers, Walla Walla, Washington 99362-9265, commercial phone (509) 522-6624.

SUMMARY

In summary, I have taken into consideration the environmental consequences and economic costs of each alternative as well as the overall importance of the project. After careful evaluation of these issues, I find that Corps maintenance of the levees with provisions for endangered species protection to be the environmentally and economically preferable alternative.

DATE: 3 Aug 90

PAT M. STEVENS IV
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JUL 10 1990

FWE
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Lieutenant Colonel James A. Walters
District Engineer
U.S. Army Corps of Engineers
Walla Walla District
Walla Walla, Washington 99362-9265

Dear Colonel Walters:

This is the Fish and Wildlife Service's (Service) biological opinion prepared in response to the Corps of Engineers (Corps) Walla Walla District's May 16, 1990, request to initiate formal consultation under Section 7 of the Endangered Species Act of 1973 as amended (Act) for the Jackson Hole, Wyoming, Snake River Levee Maintenance Project. Your May 16, 1990, letter requesting formal consultation was received by this office on May 18, 1990. As discussed in our April 26, 1990, letter to your District, the Service disagreed with your "not likely to adversely affect" determination for the endangered bald eagle (Haliaeetus leucocephalus) contained in your March 19, 1990, biological assessment for this proposed action. The Service has examined the proposed project in accordance with the Section 7 Interagency Cooperation Regulations (50 CFR 402, FR 51(106):19957-19963). This biological opinion refers only to the anticipated ongoing and future effects on the bald eagle and not the overall environmental acceptability of the proposed action.

BIOLOGICAL OPINION

It is the Service's biological opinion that implementation of the Jackson Hole, Wyoming, Snake River Levee Maintenance Project is not likely to jeopardize the continued existence of the bald eagle in the Pacific States Bald Eagle Recovery Area.

PROJECT DESCRIPTION

Several levees have been constructed by Federal, State, and local agencies and private citizens along the Snake and Gros Ventre Rivers in Jackson Hole Valley of Wyoming. Levee construction was initiated in the early 1950's, and annual maintenance and emergency repairs are carried out by Teton County and the Corps. The study area on the Snake and Gros Ventre Rivers includes the

upstream end of the Federal levee system from river mile (RM) 964.5 downstream to the lower end of the levees at RM 940. The study area also includes the Gros Ventre River from its confluence with the Snake River upstream to the boundary of Grand Teton National Park, a distance of approximately 2 miles.

In the past, most maintenance activities have been performed on an emergency basis to repair levees during and following spring floods. This has resulted in an increased potential for levee failure, a need for frequent repairs, and high costs associated with emergency actions. As a result of the significant maintenance requirements of the levees, the project sponsor (Teton County) requested that the Federal Government assume annual maintenance of the levee system. This was sanctioned under the Water Resources Development Act of 1986 (P.L. 99-662, Sec. 840), which authorized the Corps to assume responsibility for operation and maintenance (O&M) of the above-mentioned Federal and non-Federal levees in the Jackson Hole area. With implementation of the proposed action, regular maintenance activities occurring during the year would include (Corps 1990a):

1. Spring snow removal. The tops of all levees would be plowed, typically in early April, to allow access for patrol vehicles and let the levees dry out to accommodate heavy equipment traffic during emergency repairs.

2. Levee patrol. Daily patrol of all levees is conducted during daylight hours of the spring flood peak.

3. Emergency action. Flood fights occur as needed at problem areas during spring flow peaks. This typically lasts for 1/2 to 2 days at any given site, and involves 20-25 dump trucks, 4-6 bulldozers, 2-3 track-mounted backhoes, and emergency repair crews at 3 to 6 levee sites.

4. Rock quarrying and stockpiling. Levee maintenance requires a regular supply of rock for levee repairs or reconstruction. This operation would involve extraction of rock for riprap and backfill from an upland quarry, possibly at a new site, and hauling by truck to a number of stockpile sites at intervals along the levee system.

5. Levee rehabilitation. This action includes selective reinforcement or reconstruction of weak or damaged levee sections. It typically occurs after high flows have receded and involves relatively short sections of levee.

6. Debris clearance. Flood flows periodically leave snags on or near the levees, in a position to create deflection flow damage. Periodic removal of approximately 50 snags per event would occur in the fall, probably on an annual basis.

7. Culvert clearing. Culverts providing for drainage flow would require periodic removal of debris that could cause clogging.

8. Vegetation removal. Trees and other large perennial vegetation would be periodically removed from the levee surfaces using mechanical means.

9. Access road maintenance. Roads that provide access to the levee system require periodic plowing, grading, and/or graveling.

BASIS OF OPINION

Bald Eagle Population Status and Biological Requirements

Bald eagles occur year round in Wyoming, but their numbers fluctuate dramatically between seasons. The greatest numbers occur during the spring and fall migrations. Most of the known nesting territories are in the northwestern part of the State. In 1985, of the 44 nest territories documented in Wyoming, 35 (80 percent) were occupied and 28 young were produced for an average of 1.75 young per successful territory (U.S. Fish and Wildlife Service 1986). An estimated 450-550 bald eagles winter along major waterways within Wyoming (U.S. Fish and Wildlife Service 1986).

Wyoming falls within the Pacific States Bald Eagle Recovery Plan area (U.S. Fish and Wildlife Service 1986). The primary objective of the Bald Eagle Recovery Plan is to outline steps that will provide secure habitat for bald eagles in the seven-State Pacific recovery area and increase populations in specific geographic areas to levels where it is possible to delist the species. Delisting should occur on a regionwide basis and should be based on four criteria. First, a minimum of 800 pairs nesting in the seven-State recovery area. Second, these pairs should be producing an annual average of at least 1.0 fledged young per pair, with an average success rate per occupied site of not less than 65 percent over a 5-year period. Third, population recovery goals must be met in at least 80 percent of the management zones with nesting potential. Finally, a persistent, long-term decline in any sizeable (greater than 100 birds) wintering aggregation would provide evidence for not delisting the species. In 1988, 696 nesting pairs were located in the seven-State area.

The management zone approach is central to the recovery process because establishment of well-distributed eagle populations and habitats is important to recovery of the species in the Pacific recovery area. Nine bald eagle management zones were identified for Wyoming in the Bald Eagle Recovery Plan. Implementation of recovery actions and achievement of goals are applied on a zone-by-zone basis. The project area lies within the Snake Unit of the Greater Yellowstone Ecosystem (GYE) Management Zone of the Recovery Plan.

Ecological evaluations and management of GYE bald eagles have focused on three units within the population: the Snake, Yellowstone, and Continental Units. The Snake Unit, and especially the Wyoming portion, was historically significant in providing habitat and conditions suitable for the remnant population essential to the current trend of recovery (GYE Bald Eagle Working Team 1983).

Bald eagle productivity data from the GYE is encouraging. An Interagency Bald Eagle Working Team for the GYE was formed in 1981 to aid in coordinating management of the GYE bald eagle population. Specific responsibilities of the working team included identifying management objectives, tasks, and priorities that are consistent with the Bald Eagle Recovery Plan but are relevant to the specific needs of the GYE. The overall management objective for the GYE bald eagle population is to achieve and maintain 62 breeding pairs fledging an average of 53 young per year by 1990.

In 1988, 63 pairs of bald eagles attempted to nest in the GYE. The GYE population is considered to be one of the most significant populations in the western Rocky Mountains (Swenson et al. 1986). Although the GYE bald eagle population appeared severely threatened with extirpation prior to the 1970's, it has increased from a low of 30 pairs to its current level. Swenson et al. (1986) predicted the ecological carrying capacity of the GYE at 108 pairs, based on population growth rates between 1970 and 1982.

There are six nesting territories which fall within the influence of the project. Nesting territories usually include the current nest location, alternate nest sites which have been constructed in previous years, and perching and feeding habitat. One nest occurs on Federal lands inside Grand Teton National Park with the nesting territory extending south into the project area of influence; an additional five nesting territories occur on private lands immediately adjacent to the project boundaries with one pair nesting near the confluence of the Gros Ventre River (Gros Ventre pair) and 4 pairs nesting at the southern end of the project area (Gill, Ford, Butler Creek, and Munger Mountain pairs). Nests appear to be strongly oriented toward spring creek spawning areas outside of but adjacent to the levee system and areas of the river that are not tightly restricted by levees. Since 1982, these six pairs (28.6 percent of the Wyoming portion of the Snake Unit GYE population) have produced 50 young or 41 percent of the total production (1982-1988). These six pairs averaged 1.47 young per nesting attempt, which is considered excellent production and of historical significance in providing breeding adults for the recovering GYE population (Oakleaf 1989).

In general, bald eagles seem to choose the largest trees in the surrounding area. In the Snake Unit, the height of nest trees averaged 16.7 meters with an average diameter breast height of 85.3 centimeters. Swenson et al. (1986) noted that bald eagles did not have rigid requirements for nest trees, but

selected the most desirable tree or stand of trees closest to a reliable food source available early in the nesting season. Human disturbance is known to affect nest tree selection (Harmata 1989 and Swenson et al. 1986).

Harmata (1989) found nesting chronology similar to chronology previously estimated for the same area by Swenson et al. (1986). Courtship and nest repair may begin as early as late February. Egg laying occurs in March and fledging occurs during July. Young are closely associated with the adult pair and nesting territory from the time of fledging through September.

Harmata (1989) describes the movement of young and subadults produced along the Snake River. Adults remain loosely associated with the nesting areas throughout the fall and winter. Winter bald eagle use within the area appears to be primarily by resident adults and an influx of a small number of migratory adults and subadults.

Bald eagles consume a variety of prey items including ungulate carrion, waterfowl, and fish (Swenson et al. 1986). Use of these food items are probably related to their abundance and availability during a given time of the year. Ungulate carrion is primarily important during the months of December through March when other prey groups are not as readily available. Early in the breeding season, eagles feed largely on cutthroat trout (Oncorhynchus clarki spp.) that are spawning in area spring creeks. Waterfowl provide an early spring prey source and also may be important in late June and July during their molting phase. The abundance of waterfowl also may compensate for reduced availability of fish during spring runoff as a result of high velocities and turbid conditions associated with the river during this period (Oakleaf 1989).

Although bald eagle food habits may vary during the season, over 60 percent of their diet consists of fish (Harmata 1989 and Swenson et al. 1986). Fish become especially important during the nesting season. The availability of fish is dependent on the physical structure of the river, behavior patterns of the different fish species, and level of human disturbance. Due to habitat preferences, season of use, and spawning characteristics, different species are more available at different times of the year. Cutthroat trout spawners in the shallow spring-fed tributaries provide food during high runoff periods when foraging on the main river is typically difficult.

Direct Impacts Associated With the Project

The primary direct effect of the levee maintenance project on bald eagles would be the potential disturbance of up to five bald eagle nest sites within the project area. These nest sites are, and would continue to be, subjected to disturbance from maintenance activities early in the nesting season. The severity of these disturbances would depend on the type and duration of levee maintenance and repair activities near any nest site, the distance between bald eagle nest sites and the levees, and the amount of vegetative screening surrounding the nest sites (Corps 1990a).

All five nest sites located on private lands adjacent to the project boundaries are within 1/2 mile of levees that would be maintained under the proposal, with the closest nest occurring within 100 feet. Snow removal, levee patrols, and emergency repairs would occur close to these nest sites, so that up to five nesting pairs and young could possibly be disturbed by these activities early in the spring during critical nesting stages (Corps 1990a).

Emergency repairs of the levees could have adverse impacts to nesting eagles and their eggs or eaglets if these repairs are conducted near the nest during nesting season (February-July). The Corps has indicated "that it will attempt to notify and consult with the FWS when emergency actions near eagle nests are necessary, but that the flood-fighting response must be immediate and cannot be delayed if FWS personnel are not available. Making any further commitment on consultation would ignore the nature of flood emergencies and go beyond the requirements of the regulations" (Corps 1990a). A potential take of adult birds, eaglets, eggs, or nests could occur if adequate precautionary measures are not taken during these emergency operations.

No activities are currently planned for the Hansen quarry and any proposed use of this site would require a separate assessment (Corps 1990a). This quarry is near several alternate nest sites that have been traditionally used by the Gros Ventre pair. Activities at the Hansen quarry site or along its access road during the nesting season also could affect the nesting success of this pair.

Indirect Impacts Associated With the Project

The effect of the existing levees on fish and wildlife, including bald eagles, may be reflected by comments made by Dr. John C. Peters, Environmental Specialist for the Environmental Protection Agency, and Dr. Morris Skinner, Professor of Civil Engineering, Colorado State University (Kiefling 1978). Correspondence from Dr. John C. Peters after a float trip on September 17, 1973, from the Highway 22 bridge near Wilson to the Highway 187 bridge near the South Park Elk Feedground indicates that, "In many reaches the main channels occur adjacent to the levees and are relatively straight following the route of the levee. Rather extensive gravel islands have developed between the braided channels which are nearly completely devoid of permanent brushy and woody vegetation. The auxiliary channels meander between the two main channels which appear to be ephemeral, moving about from 1 year to the next following high flows. The amount of eroded channel per unit area is estimated to be about five times greater here than compared to floodplain areas where no levees have been built. It is our belief that the greatest stability of the main channel is found in the Snake River floodplain area without levees. By channel stability we mean the cross-sectional channel configuration does not change over time even though the channel may move laterally in the floodplain. Also, we believe that where the quality of the Snake River cutthroat trout fishery is related to channel stability where channels are stable with permanent woody streamside vegetation, and braiding is limited, we would measure the greatest

trout biomass. On the other hand, where we find unstable channels (which we attribute mainly to the introduction of levees in the floodplain) we find braided channels with little streamside woody vegetation and would consequently measure low trout biomass."

After the same inspection trip, Dr. Morris Skinner indicated his belief that eventually the woody vegetation between the levees will be lost and the sands and gravels will aggrade to the point where essentially the river will consist of two main channels which will probably flow next to the levee proper (Kiefling 1978). There will be some limited, annual braiding between the major channels.

The GYE Bald Eagle Working Team (GYEWT 1983) indicated that several effects on bald eagle habitat should continue due to these ongoing changes in river geomorphology as a result of the levee system. These effects are:

1. Trout habitat is degraded. In-river spawning habitat is practically eliminated and spawning is restricted to feeder streams;

2. Shallows and riffles used by eagles to obtain prey are reduced;

3. Islands that have trees adequate for nests are being eliminated; and

4. Conditions conducive to cottonwood regeneration have been eliminated by preventing the flooding and scouring action of the river in adjacent floodplains.

The GYEWT (1983) concluded that "indirect effects of levees, however, are perhaps the most threatening to bald eagles. The levees prevent flooding and therefore allow for housing developments in bald eagle nesting habitat. The impacts of development, increasing human disturbance, and retrogressing habitat are obvious. However, as these areas are subdivided, detrimental changes in fisheries habitat also are occurring, including increased siltation, removal of vegetation, and pollution of spawning tributaries. The importance of these tributaries should not be taken lightly, for as the tributaries go, so goes the Snake River (fishery)."

All bald eagle nesting territories within the project area are keyed into spring creeks. These spring creek tributaries are important spawning areas for cutthroat trout, which are an important component of the bald eagle diet (Harmata 1989 and Swenson et al. 1986). This food source is crucial to the maintenance of the eagle territories within the project area. Since spawning habitat is considered one of the major limiting factors for cutthroat trout in the upper Snake River drainage (Kiefling 1978), it is likewise an important factor in the maintenance of the area's nesting bald eagles. Little or no spawning habitat presently exists in the main river because high flows, particularly during spring runoff, produce large sediment bed loads and

turbidity during the spawning period. Historically, cutthroat trout populations in the main channel portion of the river have been supported almost entirely by recruitment from the many spring creeks which feed the river. Prior to construction of the levees, the spring creek tributary systems provide cutthroat trout with abundant spawning gravels and a variety of pool habitat and related cover (Annear 1989). Flood waters flowing from the Snake River through side channels maintain the integrity of these systems by flushing and recharging these creeks with new spawning gravels. After construction of the levee system, spawning habitat in many of the spring creeks began to gradually degrade as a consequence of restricting the flow of the river to the channelized area (Annear 1989). The lost capacity for flood flows to flush sediments from spawning gravels, combined with continued contributions of sediment from agricultural and natural sources, has caused a steady decline in the suitability of spawning areas and habitat for all life stages of trout (Annear 1989). These impacts are expected to continue under the proposed project operation and maintenance.

In the absence of flushing flows, primarily as a result of the levees, substrates continue to silt in and become unusable to spawning trout (White 1990). In order to maintain present levels of spawning cutthroat trout, the Wyoming Fish and Game Department (Department) has had to rehabilitate sections of spring creeks on a 5-to 10-year rotation basis (Kiefling 1990). Access to these areas has been achieved through cooperation from willing landowners. However, there is no guarantee that this program will be continued due to funding constraints. In this regard, the Department has indicated a willingness to explore cooperative efforts with the Corps to ensure the long-term productivity of these spawning areas (White 1990). If this program was to be discontinued, spawning runs within the project's spring creeks would revert in 5 to 10 years to their formerly low numbers.

Additional impacts would occur to fish species that eagle prey upon, especially cutthroat trout, from the removal of fallen trees and debris from the river channel during annual O&M operations. Woody debris is important as habitat and cover for fish (Bilby et al. 1989). Large pieces of debris in streams influence the physical form of the channel, the movement of sediments, the retention of organic matter, and the composition of the biological community. Debris can facilitate the forming and stabilizing of gravel bars by accumulating sediments and can be instrumental in forming pool habitat by directing or concentrating flow in the stream to scour pools or by impounding water. Trout use wood-associated cover, especially during periods of high flows, when the lower velocity areas created by the debris may offer one of the few suitable refuges within the main river channel. Field studies conducted by the Department (Kiefling 1990) in the project area indicate approximately 30 percent of the within-channel snags associated with the Snake River were providing good fish cover. Woody debris also can be responsible for the retention of organic matter that is used by aquatic invertebrates that trout feed upon. The above referenced studies also found that habitat associated with snags provided 2 to 3.5 times as many aquatic invertebrates when compared to riffle areas.

Utah suckers (Catostomus ardens) and Utah chub (Gila atraria) also have been identified as an important forage item for bald eagles in the Snake Unit of the GYE. Utah suckers are abundant in the project area (840 pounds per mile (Annear 1989)) and spawn in the river in late June and early July (Hudelson 1990). Since this species spawns after spring runoff, when the river is less turbulent, the population has been able to sustain itself. These fish are more vulnerable to predation during the spawning period and probably provide an important food source for eagles during the latter part of the nesting season. Utah chubs are uncommon within the project area (Hudelson 1990). Oxbows and backwater habitats preferred by this species have been virtually eliminated by past levee construction.

The levee system has reduced the extent of side channels and the availability of rearing and holding habitat for cutthroat trout and other fish and nesting, rearing, and resting habitat for waterfowl. Side channels are important foraging areas for bald eagles during the nesting season (Oakleaf 1989) when these areas are used as refuges by fish and waterfowl during high river flows. Wiley (1969) surveyed 12 miles of the Federal levee system and determined that 8 miles of permanent side channels were dewatered by levee construction and the remaining 4 miles of river bottom would probably have been subject to meandering prior to diking. During the 1970's, a significant amount of side channel habitat also was eliminated by non-Federal levee construction in the South Park area of the project.

With the elimination of major river channel movement by the levee system, wetlands will not be replenished and many of the oxbow and side channel wetlands will eventually be displaced due to siltation. This will have an overall negative effect on area waterfowl, which is an important food source for eagles during the nesting season (Oakleaf 1989).

The narrowleaf cottonwood (Populus angustifolia) riparian community is an important component of bald eagle breeding territories. Eagles in this project area are highly dependent on this tree species for nesting, perching, and maintenance of habitat that its food supply is dependent upon. As fish and aquatic birds make up the bulk of food taken by breeding bald eagles, most nests in the GYE are within 500 meters of water (GYEWT 1983). Prominent trees and snags with exposed lateral limbs, common to cottonwoods, are used for perching and appear to be an important component of nesting territories (GYEWT 1983). These nests and perch trees cannot be expected to last forever, especially since they tend to be older and susceptible to loss. Therefore, adequate management must address the need for recruitment trees with desired characteristics (GYEWT 1983).

The stability and vigor of the narrowleaf cottonwood community is dependent on the dynamics of the flood regime (Snyder 1980). Two ecological parameters are critical for maintenance and long-term stability of cottonwood/willow ecosystems: (1) frequency, duration, and seasonal timing of flooding, and (2) soil moisture conditions during the growing season (Snyder 1980). Land management practices and watershed manipulations (principally water diversion

and consumption) can radically alter relative plant compositions. The construction of river impoundments and consequent reductions in winter-spring flood surges have been the primary causes of long-term riparian woodland degradation (Snyder 1980). Akashi (1988) conducted research on the cottonwood community of the Big Horn River above Yellowtail Reservoir and linked the recent decline of the cottonwood forest to reductions in younger age classes of cottonwood. The most probable cause of forest reduction was the lack of seasonal fluctuation in river flow caused by upstream diversion and storage, which in turn stabilized streamflows. Alteration or elimination of higher flows can lead to the long-term degradation or elimination of riparian plant community dominants. If the natural flooding process is slowed or eliminated, cottonwood and willow would be replaced by more drought tolerant species. Thus, periodic flooding is extremely important for regulating the productivity and continued natural regeneration of the narrowleaf cottonwood-willow community (Snyder 1980).

The extent of the flooding within the project area has been significantly reduced because of the levees. As a consequence, this has resulted in a major reduction in the areal extent of shrub willow/cottonwood and forested cottonwood habitat. Habitat types that are influenced by flooding have been reduced by 43 percent from the preproject level of 2,761 acres in 1956 to 1,176 acres by 1986. Much of this loss has occurred to habitats lying within the levees, especially to the shrub willow community, forested islands, and cottonwood stands as a result of erosion from constant channel changes induced by the levees.

The riparian vegetation behind the levees has matured and older aged stands dominate these areas. Prior to the levees there were 1,781 acres classified as mature cottonwoods; whereas, in 1986, the acreage for this habitat type has increased by 57 percent to 3,128 acres. Mixed cottonwood/spruce and spruce stands also have shown an increase from a preproject level of 770 acres to 1,147 acres currently. In areal extent, the amount of forested cottonwoods has not changed significantly and are very close to the preproject level (5,318 acres versus 5,418 acres today). Riparian cottonwood habitat is not being adequately replaced and as it matures will be gradually displaced by more arid habitat such as spruce and sage grasslands. This is especially evident in areas above the Gros Ventre River and in the South Park area, which are the primary nesting areas for bald eagles within the project area. The results of this habitat loss will be a continued reduction in the riparian diversity of the Snake River floodplain ecosystem that bald eagles are greatly dependent upon for habitat requirements (nesting, perching, and security) and a food source.

Unconsolidated (gravel and cobble) stream bottoms or channel areas have been reduced from a preproject level of 2,511 acres to approximately 2,000 acres presently. This figure does not, however, convey the complete story. The formerly braided channel ecosystem has largely been transformed by the levee system into a single channel environment. As a result, the extent of main channel habitat has increased at the expense of side channels. Thus, the loss of side channel habitat is far greater than the 504 acres indicated. Whereas,

unconsolidated shores have shown a net increase from 1,120 acres to 1,514 acres during the evaluation period. This has resulted largely to the levees inducing constant channel changes and perpetuation of unstable conditions in less restrictive levee reaches where the river dissipates its energy and drops its bedload. Thereby, unconsolidated gravel and cobble bars and islands are concentrated in large expanses within or adjacent to the main channel, where formerly they were well distributed throughout the braided floodplain in the form of bars and islands. The transformation of the former forested, braided riverine system into a primary nonvegetated, single channel system has reduced habitat diversity for fish and nesting waterfowl that eagles are highly dependent upon for prey during the breeding season. This transformation also is resultant in the loss of shallow and riffle habitat that are used extensively for eagles to obtain their prey. In addition, most perch trees also have been eliminated from main channel areas causing a reduction in resting and security areas for feeding.

Cumulative Effects Associated With the Project

Cumulative effects are those effects of future State or private activities on endangered or threatened species or critical habitat that are reasonably certain to occur within the action area of the Federal action subject to consultation. Future Federal actions will be subject to the consultation requirements established in Section 7 and, therefore, are not considered cumulative in the proposed action.

The Department of the Interior's February 16, 1990, comments on the Corps Draft Environmental Impact Statement (DEIS) indicated that the discussion of cumulative impacts of the overall project were not adequately addressed. In the Service's February 15, 1990, comments on the Draft Biological Assessment, it also was stated again that cumulative effects were not adequately discussed. The Corps' Final Biological Assessment dated March 19, 1990, did not expand on discussion of the cumulative effects contained in the Draft Biological Assessment. The Corps speculated in their Final Environmental Impact Statement (Corps 1990a) that future floodplain development in the non-Federal levee portion of the project is unlikely to occur because these levees provide only a 10- to 50-year flood protection.

Tourism and the resident population in northwestern Wyoming have increased greatly during the last 20 years. Year-long distribution of visitors and types of recreational pursuits have changed from seasonal peaks, mainly summer and fall, to near year-round activity. Tourism and residential homesite and condominium development have increased during this same period (GYEWT 1983).

The current 1989 population estimate for Teton County is 13,650, compared to a population census in 1970 of 4,880, an increase of 8,770 or 179 percent. The rate of population growth has fluctuated from 4.3 percent per year in the 1960's, to 7.3 percent in the 1970's, and 2.4 percent in the 1980's. At a 5 percent growth rate, the county's 1999 population is projected to be about 26,000. Most of the projected population increase is attributed to anticipated growth in the recreational sector and the number of people moving to Teton county for retirement (Bradley 1989, pers. comm.).

In the 1970's the population of Jackson increased at a faster rate than Teton County. Housing developments and population growth are now occurring at a greater rate in the county. Subdivision development first followed major roads, spread to agricultural lands, and emphasis is now on riparian lands (GYEWT 1983). While only 4 percent of Teton County lands are privately owned, if developed fully under present planning guidelines, the county's population would exceed 40,000 people. It is significant that 9 (60 percent) of the 15 breeding territories of bald eagles in the Wyoming portion of the Snake Unit are associated with these private lands (GYEWT 1983).

Floodplain development has, and will continue to have, a cumulative secondary impact to eagles and their habitat. Since 1978, at least three instances have been documented (Oakleaf 1989) where bald eagles have relocated their nests in the apparent response to the construction of houses in the Snake Unit of the GYE. In addition, one nest location was permanently abandoned due to the development of the Solitude Subdivision within the north portion of the project area in 1981 (Oakleaf 1989).

CONCLUSION

The jeopardy standard for the bald eagle in Wyoming is the population covered by the seven-State Pacific States Bald Eagle Recovery Area. A jeopardy opinion is not warranted because the proposed action, along with cumulative effects, is not likely to jeopardize the continued existence of the bald eagles within the Pacific States Bald Eagle Recovery Area.

INCIDENTAL TAKE

Section 9 of the Act, as amended, prohibits any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered taking within the bounds of the Act provided that such taking is in compliance with the incidental take statement.

The Service anticipates that three bald eagles could be taken as a result of this proposed action. The take may be in the form of harassment by displacing adult bald eagles from the nest when eggs or eaglets are in the nest to the extent that the nest is abandoned. The take may be in the form of harming eggs or eaglets. Therefore, take may be harassment of adult bald eagles, harming the eggs/eaglets, or any combination of harassment and harm. The take also may be in the form of harm whereby secondary impacts attributable to the proposed action significantly degrade or modify habitats needed by bald eagles to meet requisite feeding, breeding, and shelter requirements. The incidental take level included in this incidental take statement is the level of take anticipated that is likely to occur, not the level considered acceptable. It is possible that take could occur even with implementation of "reasonable and prudent measures"/"terms and conditions."

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take.

1. Nest site management plans must be prepared and updated for the Gros Ventre, Ford, Gill, Butler Creek, and Munger Mountain nests and their alternate nests. Any new nest established in the project area during the life of the project must have a nest site management plan while bald eagles remain listed and 5 years thereafter.

2. Avoid disturbing nesting bald eagles during February through July.

3. Monitor emergency and/or operation and maintenance work during the nesting season (February-July) to determine if adult bald eagles are displaced from the nest.

4. If adult bald eagles are disturbed by project activities to the extent that the egg/eaglets are vulnerable to take, the eggs/eaglets must be protected.

5. Study the spring creeks with cutthroat trout spawning habitat which are associated with the project and which are within the six bald eagle nesting territories in the Snake River Unit of the GYE, to determine the use of these spring creeks by bald eagles. Following completion of the study, formulate and implement measures to maintain or improve associated cutthroat trout spawning habitat and cutthroat trout access to the areas identified in the study as those utilized by the bald eagle within their nesting territories.

6. Improve cutthroat trout passage in Blue Crane Creek, Bar BC Creek, and Spring Creek.

In order to be exempt from the prohibitions of Section 9 of the Act, the Corps must carry out the following terms and conditions, which are necessary to implement the reasonable and prudent measures described above.

1. Nest site management plans must be prepared and updated annually (no later than April 15) and coordinated with the Department and the Service.

2. Nonemergency work on O&M activities within zones 1 and 2 of the nest site management plans must be performed during the nonnesting season (August-January). If emergency work must be conducted during the nesting season, the Service, Department, and qualified observer must be notified. Riprap must not be stockpiled and new haul roads must not be built within zones 1 and 2 of the nest site management plan.

3. A qualified observer who is approved by the Corps, Service, and Department must be on duty during all project activities (except levee patrol and snow removal) within zones 1 and 2 of the nest site management plans during nesting season (February-July) to determine whether project activities are taking nesting adult bald eagles.

4. Qualified individuals must be available to conduct any nest manipulations to ensure that eggs/eaglets are safeguarded during construction or O&M. Individuals involved in the capture, holding, or transfer of eaglets or eggs must be covered under a current endangered species permit or subpermit. Translocation of eaglets or eggs must be coordinated with the Service and the Department. Approval of affected landowners is required prior to manipulation of eggs or eaglets.

5. The Senate Committee on Environment and Public Works adopted a study resolution on June 12, 1990, which requests the Corps to review certain reports with a view to determining the advisability of mitigating the impacts resulting from the construction, operation, and maintenance of Jackson Hole levees. One element of the reconnaissance study will specifically address anticipated incremental impacts to the spring creek spawning habitat outside of the levee system, and to develop the means and methods to maintain or improve these habitat areas. When funds are made available for this study through appropriations, the Corps shall implement the study. Recommended measures to maintain or improve cutthroat trout spawning habitat and cutthroat trout access to these areas shall be implemented under applicable existing authorities or future Congressional authorization, subject to the appropriation of funds, and subject to obtaining access to private lands. If funding for the study is not available by FY 1992, or if measures recommended by the study are not initiated within 12 months following completion of the District Engineer's report, the Corps shall reinitiate formal Section 7 consultation with the Service.

6. The existing culverts in the roads across Little Bar BC Creek, Spring Creek, and below the Department's fish ladder on Blue Crane Creek must be replaced with a structure that allows unimpeded fish passage.

Upon locating a dead, injured, or sick endangered or threatened species specimen, initial notification must be made to the nearest Service Law Enforcement Office. Special Agent James Klett is located in Lander, Wyoming. His phone number is (307) 332-7607. Care should be taken in handling sick or injured specimens to ensure effective treatment and care and in handling dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered species or preservation of biological materials from dead animals, the finder has the responsibility to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

If, during the course of the action, the amount or extent of the incidental take limit is exceeded, the Federal agency must reinitiate consultation with the Service immediately to avoid violation of Section 9. Operations must be stopped in the interim period between the initiation and completion of the new consultation if it is determined that the impact of the additional taking will cause an irreversible and adverse impact on the species, as per Section 402.14(i). The Federal agency should provide an explanation of the causes of the taking.

Incidental take under the Act does not provide authorization under the Migratory Bird Treaty Act (16 U.S.C. 703-711; 40 Stat. 755) as amended, Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d; 54 Stat. 250) as amended, or any other statute. Under those Acts, very stringent and restrictive provisions must be met before any form of taking is allowed. Landowners or individuals conducting activities unrelated to project operation on private property adjacent to project boundaries which result in losses to bald eagles will still be subject to the usual enforcement provisions of these statutes.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. The term conservation recommendations has been defined as suggestions of the Service regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information.

The Final Environmental Impact Statement for the levee maintenance project (Corps 1990a) indicates that the Corps has adopted mitigation recommendations, items 15 a-c (pages 78-79), as described in the Fish and Wildlife Coordination Act Report (Service 1990) prepared for the proposed action. In addition to the above adopted measures, the Service recommends the following conservation measures be incorporated into the proposed action to minimize or avoid adverse effects to bald eagles. These include:

1. Conduct inventories to determine the status and quality of key habitat components; i.e., wetland, riparian vegetation, riverine, and spring creek of bald eagle territories within the influence of the project. Using the above data and findings, an interdisciplinary agency team, comprised of Corps, Department, and Service personnel, should develop a plan for implementation to maintain, and if possible enhance, key habitat components within these bald eagle territories.

2. To maintain riparian integrity and associated instream habitat of bald eagle territories within the influence of the Federal maintenance project, key forested islands and streambanks as recommended by the interdisciplinary team should be stabilized and protected from further erosion. We suggest that larger angular riprap be used for this purpose.

3. To promote the succession and maintenance of riparian forested island habitats, a program should be implemented to install river training devises or other measures to create conditions for island establishment and development within bald eagle nesting territories.

4. To improve access to spawning areas by adult trout in bald eagle nesting territories, offset dikes or river-training devices should be installed at the confluence of spring creek tributaries. These structures should be designed by hydraulic engineers in consultation with the Department's fishery staff.

5. To help maintain riparian, wetland, and aquatic habitats associated with cutoff side channels, existing diversion structures should be maintained and additional structures constructed at strategically located places to direct or allow for periodic high flows into the historic floodplain located in bald eagle territories.

6. To protect resources associated with bald eagle territories within the Spring Creek/South Park area and the mouth of the Gros Ventre River from further degradation from the upstream levee system, the interdisciplinary agency team should develop a plan for implementation to restore these river reaches to a state of equilibrium.

7. Habitat impacts associated with O&M and emergency maintenance within bald eagle nesting territories should be compensated for in kind.

8. The Hansen quarry site should not be utilized as a source of riprap so that impacts to the pair of bald eagles nesting near this site can be minimized.

9. Under the Corps' and Service's leadership, a task force represented by landowners, natural resource groups, and local, State, and Federal agencies should be established to develop a management/protection strategy for nesting bald eagles within the Jackson Hole Valley. This approach needs to emphasize cooperative relationships with floodplain owners. Education programs also should be developed to assist landowners to recognize the value of preserving these bald eagle territories and possible measures to reimburse these landowners through conservation easements or other means.

Many of the conservation recommendations listed above are proposed for evaluation or study in the "Draft Plan of Study, Jackson Hole, Wyoming - Environmental Engineering River and Wetland Restoration on the Upper Snake River" (Corps 1990b). We believe that if the recommendations resulting from this study are implemented, the bald eagle and its habitat will benefit in the project area.

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

This concludes our formal consultation on this action. Reinitiation of formal consultation is required if the amount or extent of incidental take is exceeded, if new information reveals effects of the action that may impact listed species or critical habitat in a manner or to an extent not considered in this opinion, if the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion, or if a new species is listed or critical habitat designated that may be affected by the action.

If you have any questions, contact my office at (303) 236-7920 or the Wyoming State Office at (307) 772-2374.

Sincerely,

JOHN L. SPINKS, JR.
Deputy Regional Director

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