February 25, 1986

MEMORANDUM

To: Regional Director, Bureau of Reclamation
Upper Colorado River Basin, Salt Lake City, Utah

From: Field Supervisor, Ecological Services
Salt Lake City, Utah

Subject: Small Reclamation Project - Stagecoach Dam and Reservoir, Colorado - Fish and Wildlife Coordination Act Report

This memorandum constitutes our Fish and Wildlife Coordination Act Report on the subject project. This report has been prepared in cooperation with the Colorado Division of Wildlife and under the authority and in accordance with the provisions of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq). Concurrence in the report by the Colorado Division of Wildlife is indicated by the attached copy of letter dated , signed by Director James B. Ruch. The cooperation of your agency, the Colorado Division of Wildlife and the Upper Yampa Water Conservancy District in the conduct of the studies leading to the preparation of this report is greatly appreciated. A substantiating report covering the same material but in greater detail is available upon request.

Stagecoach Reservoir would be located on the Yampa River in Routt County, Colorado about 17 miles south of Steamboat Springs and 4 miles east of Oak Creek. The dam, located in the SW 1/4 of Section 29, Township 4N Range 84W would rise 145 feet above the streambed and be about 450 360 feet long.

The purposes of the project are irrigation, municipal and industrial, recreation, including fish and wildlife, and power production. Out of a total storage capacity of 32,000 3327 acre-feet 4000 acre-feet are for irrigation, 11,000 acre-feet for municipal and industrial, 15,000 acre-feet for recreation and 2000 332 acre-feet for sediment storage. A small run-of-the-river (800 kilowatts) power plant is planned for the project. The maximum surface area of the reservoir would be about 780 acres.

The Mitigation Policy of the Fish and Wildlife Service found in the Federal Register, January 23, 1981, (Vol. 46. No. 15) can be used to provide developers with an early indication of fish and wildlife habitat values present in a particular project area and the mitigation goal which would be recommended consistent with the habitat value determination.

Based on available information and mitigaiton policy guidance, the CDOW and our Service have determined that the affected riparian habitat corridor along the Yampa River and big game winter range be designated as 'Resource Category 2' habitats. 'Resource Category 2' habitats are defined to be of high value for evaluation species (elk and the many wildlife species which utilize the riparian streamside habitat) and are relatively scarce or becoming scarce on a National basis or in the ecoregion. Mitigation goals include no net loss of in-kind habitat value.

The riparian corridor which includes the Yampa River, adjacent riparian vegetation and big game winter range was designated as Resource Category 2 habitat for the following reasons:

1. Scarcity of riparian/wetland habitats in Colorado and Nationwide. In Colorado 90 percent of the State's 800 species of fish and wildlife depend on riparian habitat, which accounts for less than 1 1/2 percent of the State's habitat (Redelfs 1980). Wetlands in the United States (lower 48 States) now cover only 5 percent of the land surface of the lower 48 States (Tiner 1984).

2. Importance to Wildlife

a. Disproportionate numbers (density of wildlife usage) compared to surrounding lands. Of the 291 wildlife species which could potentially be found inhabiting the Stagecoach Reservoir Basin, 151 birds, 7 reptiles, amphibians and 21 mammals are associated with the riparian/wetland habitat.

b. Diversity (kinds) of wildlife several times greater than values found in other habitat types.

Based on the Mitigation Policy, the Service believes that riparian/wetland and elk winter range losses be compensated by replacement of the same kind of habitat value so that the total loss of such in-kind habitat value will be eliminated.

Specific ways to achieve this goal include: (1) physical modification of replacement habitat to convert it to the same type loss; (2) restoration or rehabilitation of previously altered habitat; (3) increased management of similar replacement habitat so that the in-kind value of the lost habitat is replaced, or (4) a combination of these measures.

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Stagecoach Reservoir would inundate about ~~4.6~~ miles of the free flowing Yampa River and influence the flows in about 7 miles of the Yampa River between Stagecoach Dam and Catamount Reservoir. Analysis of the Stagecoach Reservoir operation plan shows a decrease in peak flows and an increase in average monthly flows on a year round basis. The proposed operating schedule would produce a flow regime closer to the optimum for trout fry and juveniles and less favorable for whitefish fry (Miller 1984).

The realization of an improved trout fishery downstream of the dam is influenced by the amount of water released from the dam, temperatures of water released from the dam, substrate composition of the river and the pool-riffle ratio of the affected stream reach. A multilevel outlet in the dam would provide the opportunity to select water temperatures more suitable for the natural reproduction of trout. In addition, the pool-riffle ratio of the Yampa River downstream of the dam could be improved by stream improvement structures such as the random placement of large rocks, deflectors or rock filled gabion baskets.

The quality of the Yampa River fishery both upstream and downstream of Stagecoach Reservoir has the potential to improve after the project is in operation. The District owns 0.6 miles of river upstream of the reservoir and 0.5 miles downstream. The public should be allowed access to these areas for recreational purposes. In addition, we request that the District continue its efforts to provide additional public access to the remaining ~~4.2~~ 5 miles of private land along the Yampa River between Stagecoach Reservoir and Catamount Reservoir.

Stagecoach Reservoir would provide the opportunity for the development of a cold water reservoir fishery of about 780 surface acres. The reservoir fishery would be managed by the Colorado Division of Wildlife for cold water species of fish. Catchable and/or sub-catchable sized trout would be stocked in the reservoir by the Division of Wildlife. Cost of the fishery management has been estimated at about $9,000 annually based on 1986 costs. The Upper Yampa Water Conservancy District will make these funds available to the Colorado Division of Wildlife annually for the first 10 years of reservoir operation. At the end of the 10 year period, the District and the DOW will meet and if necessary, renegotiate a new fish stocking payment.

The project would have its greatest impact on wetlands, vegetation (big game winter range) and the various forms of wildlife dependent on these types of habitat for all or a portion of their life requirements. Stagecoach Reservoir would inundate about 280 acres of wetlands (120 acres of willows and 160 acres of wet meadows containing sedges, rushes and grass). The

remaining land which would be impacted by the reservoir is uplands composed of grasses, sagebrush, serviceberry and other shrubs. The development of residential, commercial and recreation areas around the reservoir would have additional negative impacts on wildlife and their habitats.

The Habitat Evaluation Procedures (HEP) were utilized to document and quantify wildlife habitat values related to the riparian zone and big game winter range in the project area. HEP, as outlined in FWS, ESM 102, is a method used to document the quality and quantity of habitat used by a particular wildlife species. HEP is based on certain inherent assumptions that (1) habitat value can be quantified; (2) habitat suitability for a particular wildlife species can be determined through the evaluation of measurable habitat characteristics; (3) assessment of habitat suitability is used to determine the habitat value for a particular species; and (4) there is a positive linear relationship between quality/quantity and carrying capacity.

All project and mitigation decisions were made by an evaluation team composed of members from the Bureau of Reclamation, Fish and Wildlife Service, Colorado Division of Wildlife, and representatives of the project sponsors; the David E. Fleming Company and Dr. David E. Armstrong. The team approach was pursued in order to obtain consultant data more efficiently, share agency or consultant perspectives and make cooperative decisions concerning resource impacts and management/mitigation measures.

Evaluation species form the basis of a HEP analysis. Evaluation species are used to quantify habitat suitability and determine changes in the number of available habitat units. The HEP assessment is directly applicable only to the evaluation species selected. The degree to which predicted impacts for selected species can be extroplated to a larger segment of the wildlife community depends on careful species selection. For this reason, the evaluation team selected an additional evaluation species to represent the riparian (willow) cover type which would be inundated by the reservoir. The elk had already been chosen by Dr. Armstrong with the evaluation team's later concurrence.

Evaluation species chosen were as follows:

1. Elk - The elk was selected based upon its high public interest and economic value as a big game species in Routt County. Winter range for elk and mule deer is limited and of major concern.

2. Yellow Warbler - The yellow warbler was selected based upon its dependence on the willow cover type.

3. Mallard - Selected to represent waterfowl. Used only to assess the mitigation/management area.

Acreage figures provided by the proponent's terrestrial wildlife consultant (Armstrong 1984) and the David E. Fleming Company were utilized to calculate available habitat for each evaluation species.

Habitat suitability was determined by estimating physical and vegetative characteristics (variables) of each evaluation species' available habitat. Important winter range plant species for elk consists of oakbrush, aspen, chokecherry, serviceberry, and big sagebrush. Adequate year-round grass range, or at least browse stands with good grass-forb understory are important in elk management. The winter range on Blacktail Mountain was compared to ideal winter range with similar southern exposure.

Habitat suitability for the yellow warbler in the willow cover type was determined by applying a 1983 Western Energy Land Use Team, HEP Group, published HSI model. Information contained in previously conducted consultant studies for the David E. Fleming Company and air photo interpretation formed the basis for determining an HSI value for the yellow warbler.

A Habitat Suitability Index (HSI) of 0.8 was cooperatively decided upon by the evaluation team for elk winter range in the project area and mitigation/management area. HSI value of 0.8 was also arrived at for the yellow warbler with the published HSI model.

To fully compensate the loss of big game winter range, the HEP analysis indicated it would be necessary to provide a total of 1243 acres of big game winter range where habitat quality can be improved. The District has committed 672 acres to the DOW as a conservation easement. This land would be managed as big game winter range. Grazing would be eliminated from ~~440~~ 449 acres of this land. The remaining 223 acres would be grazed on a limited basis as the condition of the range permit. An average of ~~20-25~~ ~~cow-calf pairs~~ 75 AUM for cattle would be permitted on this land on a forage available basis during the period ~~May~~ June 15- ~~September~~ October 15 of each year. An additional ~~571~~ 571 acres of land should be made available to the DOW to manage as big game winter range. This additional acreage will be made available thru the Adams estate exchange which the District has assisted in finalizing. In the mitigation area initial big game winter range improvements will be realized by removing livestock grazing. Additional improvements to the range would be brought about by mechanical treatment of overmature oakbrush which is out of reach of browsing animals by using axe, chainsaws or controlled burning. Fertilization of the treated area would be necessary to help speed up recovery. The District will be responsible for all costs associated with range improvements and for maintaining the range as high quality wildlife habitat in perpetuity.

(5)

Through the use of signs and an annual 3 month closure, the District and Routt County will control access to the big game mitigation area including the road north of the reservoir from the recreation area to the dam site. It will be especially important to control access during the big game wintering period which is between December 15 to May 15.

To fully compensate the loss of riparian habitat, the HEP analysis indicated that about 161 acres of managed habitat would be required. Constructing artificial impoundments is a common practice used to improve existing wetlands or to create new ones. Through intensive habitat management at the upper end of Stagecoach Reservoir it would be possible to develop about 78 acres of high quality waterfowl habitat. The District will be responsible for all development, operation and maintenance costs associated with the waterfowl management area. The DOW will be responsible for the design and management of the waterfowl area. In addition, the removal of livestock from the riparian zone downstream of Stagecoach Dam would compensate for riparian habitat losses and help improve the quality of the Yampa River Fishery.

Stagecoach Reservoir would block a traditional elk migration route which crosses near the dam. It is not known if the elk will continue to migrate along their historic route which would be across the reservoir, or if they will change their migration route and cross the Yampa River downstream of the dam. If the elk attempt to migrate across the reservoir during the early winter many of them may break through the ice and drown. If after the reservoir is constructed, this proves to be the case, the District will take necessary precautions to prevent elk from drowning in the reservoir.

In view of the above, it is recommended that to mitigate the losses of fish and wildlife habitat to the extent feasible, the Upper Yampa Water Conservancy District will provide the following:

1. A minimum instantaneous release of 40 cfs, or the inflow to Stagecoach Reservoir whichever is less, to the Yampa River during the period December 1 to July 31. A minimum instantaneous release of 20 cfs will be released to the Yampa River during the period August 1 thru November 30.
2. Streamflow releases from Stagecoach Dam to the Yampa River which optimize water temperatures for rainbow and brown trout in the Yampa River between Stagecoach Dam and Catamount Reservoir.
3. Fishery habitat improvement structures in the Yampa River on all land owned or controlled by the District, immediately upstream and downstream of Stagecoach Dam and Reservoir, and on all public land (DOW and BLM) between Stagecoach Dam and Catamount Reservoir.

4. Free unrestricted public access in perpetuity on both sides (streambanks) of the Yampa River on all lands owned or controlled by the District immediately upstream and downstream of Stagecoach Dam and Reservoir. In addition, the District will continue its effort to acquire additional fishing easements on private land either upstream or downstream of the proposed Stagecoach Dam and Reservoir.

5. The sum of $9000 annually for a period of 10 years to the Colorado Division of Wildlife for the development, operation and maintenance cost associated with the stocking and management of the Stagecoach Reservoir fishery. At the end of the 10 year period, the District and the DOW will meet and if necessary renegotiate a new fish stocking payment.

6. A conservation easement or fee title to the Colorado Division of Wildlife to approximately 672 acres of big game winter range in the vicinity of Stagecoach Dam and Reservoir. Grazing on a forage availability basis for 75 AUM's for ~~cattle cow-calf pairs~~ will be permitted on 223 acres of this land during the period ~~May 15 - September 15~~ June 15 - October 15 annually

7. Funds in the amount determined by the Colorado Division of Wildlife in cooperation with the District for initial big game winter range improvement and maintenance of the improvements in perpetuity on the 672 acquired for big game mitigation purposes.

8. Through the use of signs and an annual 3 month limited closure, the District will control access to the road north of the reservoir from the recreation area to the dam during the big game wintering period of December 15 to May 15 annually. DOW to advise closure period.

9. Provide $5,000 to the Colorado Division of Wildlife for the design of a 78 acre waterfowl development at the upper end of Stagecoach Reservoir.

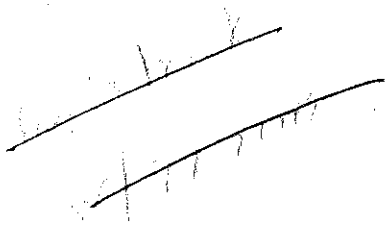
10. Provide funds to the Colorado Division of Wildlife in the amount determined by the Colorado Division of Wildlife and the Fish and Wildlife Service, in cooperation with the District for the development, operation and maintenance in perpetuity of the 78 acre waterfowl development at the upper end of the Reservoir.

11. If determined to be necessary after Stagecoach Reservoir is in place, the District will construct and maintain an elk proof drift fence along the northeast corner of Stagecoach Reservoir.

Recommendation 1 and 2 above are made in accordance with the Fish and Wildlife Coordination Act. Separate and different recommendations concerning releases of water from Stagecoach Dam may be required to protect habitat for the Colorado River endangered fish species as provided for in Section 7 of the Endangered Species Act.

The project as currently planned will directly impact ~~210~~ 220 acres of terrestrial and wetland habitat ~~(220 acres terrestrial and 120 acres of wetlands~~) which were evaluated with the Fish and Wildlife Service's Habitat Evaluation Procedures (HEP). An additional 160 acres of wetlands (rush sedges) were not evaluated or considered in this report. Compensation for the functions of these wetlands, other than wildlife habitat value, is encouraged and recommended. This could be accomplished through additional riparian zone preservation.

Adoption of the mitigation recommendations contained in this report would compensate for the loss of fish and wildlife habitat. Mitigation funds should be spent concurrently and proportionately with overall project construction and operation funds throughout the life of the project. All mitigation features should be available, in place and functioning with completion of the project.



In addition to mitigating habitat losses, the recommendations if adopted and implemented would provide substantial benefits through increased fishing and hunting in the project area. The table below provides a summary of fish and wildlife benefits that could be expected as a result of the construction and operation of Stagecoach Reservoir.

Item	Without Project (Man-day)	With Project: With Recommendations (Man-day)	With Project: Gain (Man-day)	Benefit
Fishing Stagecoach Reservoir	0	25,000	25,000	$262,500
Yampa River Upstream and downstream of Reservoir	100	2,125	2,025	21,263
Waterfowl hunting	0	450	450	4,720
Wildlife Oriented Recreation	0	2,000	2,000	21,000
Total				$309,480 rounded to $309,500

This report is based on information made available to our Service prior to January 1986. If additional data relative to fish and wildlife resources becomes available or changes are made in project plans, the Fish and Wildlife Service should be informed so that a new report may be prepared if necessary.