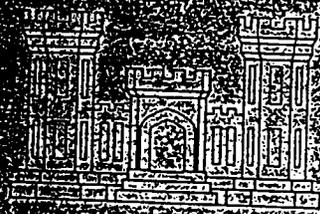


## APPENDIX E

Skiatook Dam and Reservoir, Hominy Creek,  
Oklahoma: Supplement No. 1 and No. 2 to  
Design Memorandum No. 2, General Design

SKIATOOK DAM AND RESERVOIR  
HOMINY CREEK, OKLAHOMA

DESIGN MEMORANDUM NO. 2  
GENERAL DESIGN



U. S. ARMY ENGINEER DISTRICT TULSA  
CORPS OF ENGINEERS  
TULSA, OKLAHOMA  
MARCH 1966

SKIATOOK DAM AND RESERVOIR  
HOMINY CREEK, OKLAHOMA

SUPPLEMENT NO. 1  
TO  
DESIGN MEMORANDUM NO. 2  
GENERAL DESIGN

U. S. ARMY ENGINEER DISTRICT, TULSA  
CORPS OF ENGINEERS  
TULSA, OKLAHOMA  
DECEMBER 1966

SKIATOOK DAM AND RESERVOIR  
HOMINY CREEK, OKLAHOMA

SUPPLEMENT NO. 1  
TO  
DESIGN MEMORANDUM NO. 2  
GENERAL DESIGN

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A	Report by U. S. Fish and Wildlife Service

SKIATOOK DAM AND RESERVOIR  
HOMINY CREEK, OKLAHOMA

SUPPLEMENT NO. 1  
TO  
DESIGN MEMORANDUM NO. 2  
GENERAL DESIGN

1. Purpose. - This supplement presents a U. S. Fish and Wildlife Service report on Skiatook Reservoir and Tulsa District comments thereto.

2. Report by U. S. Fish and Wildlife Service.

a. General. - The U. S. Fish and Wildlife Service submitted a letter report, dated 8 February 1966, on the fish and wildlife resources in relation to Skiatook Reservoir, Oklahoma. The report was concurred with by the Oklahoma Department of Wildlife Conservation, and a copy of the report is inclosed as exhibit A. The report indicates the reservoir will be a relatively clear, fertile body of water capable of initially supporting good populations of sport fish species and in later years being more favorable for the production of nongame fish. The report lists a net gain of 55,400 average annual man-days of fishing as a result of the project. The commercial fish catch is listed as 200,000 pounds annually. A net gain of 80 gallons of bait minnows annually is listed for the lower reaches of Hominy and Bird Creeks. The report indicates annual losses to hunting of 400 man-days for big game, 600 man-days for upland game, and 2,100 man-days for fur animals, for a total of 3,100 man-days. A net gain of 400 man-days annually for waterfowl hunting is given. The big game hunting loss is a result of deer habitat being inundated by the reservoir. Upland game habitat within the reservoir will be inundated, and with the downstream flood protection provided by the project, bottom land hardwoods will be cleared for agricultural purposes. The report states that under these conditions, dove, cottontail rabbits, and bobwhite quail populations are expected to increase, while squirrel populations will decline. The same land-use changes are stated as a reason for losses in fur animal hunting. Before receipt of the U. S. Fish and Wildlife Service report, the Tulsa District independently estimated fish and wildlife benefits as shown in paragraph 11-01 of Design Memorandum No. 2, General Design.

b. U. S. Fish and Wildlife Service recommendations and Tulsa District comments.

(1) Recommendation No. 1. - "That minimum instantaneous releases from Skiatook Dam of 10 second-feet be made during the months of April through October and 5 second-feet during the months of November through March."

Comments. - The Service estimates the above releases would provide an enhancement of 6,500 man-days annually of sport fishing and would increase the commercial minnow catch by 50 gallons annually. Project plans provide a 5 c.f.s. minimum release from Skiatook Reservoir which would maintain the aesthetic value of the stream and would aid in the propagation of fish and wildlife on Hominy Creek. The Tulsa District believes this represents the maximum use of the water resources available. Releases will be more than 10 c.f.s. from March through September. Under project operation, the downstream flow will show an improvement throughout the life of the project. This provides flexibility in the releases and will result in the enhancement anticipated by the request.

(2) Recommendation No. 2. - "That a berm or other suitable type fishing platform with guardrails be installed on or near the retaining wall overlooking the stilling basin to help assure fisherman safety and to facilitate additional fishing in the stilling basin area. Cost of the facility would be insignificant if provisions for such were included in the initial design of the dam."

Comments. - Project plans provide for fisherman access to the stilling basin area. Suitable facilities will be developed consistent with public safety. Benefits derived from the facilities will more than equal the cost. This request will be given further consideration in the design of the outlet features.

(3) Recommendation No. 3. - "That provision be included in plans for project operation for water-level manipulation as an aid to fishery management; provided that such manipulations are consonant with the best interests of all project purposes."

Comments. - The Tulsa District recognizes that the technique of water-level manipulation may be a desirable and effective means for fish management. However, there are many possible conflicting features and effects such a program may have on other project interests. Any individual requests by the Oklahoma Department of Wildlife Conservation for water-level manipulation would be studied for the effect on other project interests and accomplished if feasible.

(4) Recommendation No. 4. - "That the project plan of operation include three cleared and charted seining areas totaling approximately 300 acres in the general locations indicated on Plates III and IV. Additional costs for clearing are estimated to be \$4,500."

Comments. - This recommendation is made to increase commercial fish harvest which is estimated at 100,000 pounds annually by the Service. Tulsa District concurs with this recommendation.

Reservoir clearing will be coordinated with the Oklahoma Department of Wildlife Conservation during preparation of the design memorandum for reservoir clearing.

(5) Recommendation No. 5. - "That one of the presently planned public access areas be relocated in the upper end of the reservoir. The cost for relocating the access area would be insignificant."

Comments. - The Tulsa District plans seven public-use areas at the project, six areas above the dam and one near the stilling basin. The public-use areas around the reservoir will provide access for full use of the reservoir and will satisfy the request. Hominy Landing public-use area, located at Eagle Creek and Oklahoma Highway 20 relocation H-3, has been selected as being the most desirable location for access to the upper part of the reservoir, considering terrain, water level fluctuations, and access roads.

(6) Recommendation No. 6. - "That, in the interest of public safety and to insure that adequate areas will be available for fishing, hunting, and other wildlife purposes without conflicting uses for general recreation, a reservoir zoning plan be developed cooperatively by the Corps of Engineers, the Oklahoma Department of Wildlife Conservation, and the Oklahoma Planning and Resources Board."

Comments. - The Corps of Engineers has the responsibility for zoning the reservoir to provide the best public use. During preparation of the master plan for reservoir development or any other zoning plan, coordination will be accomplished with the interested agencies, including those listed in the recommendation.

(7) Recommendation No. 7. - "That, to mitigate losses to upland-game hunting resulting from construction of Skiatook and Birch Dams and to enhance upland-game hunting, approximately 1,000 acres of land as delineated on Plate V be acquired and developed at project expense and be made available to the Oklahoma Department of Wildlife Conservation under the terms of a General Plan as provided in Section 3 of the Fish and Wildlife Coordination Act, and that annual operation and maintenance costs be funded by the project. It is estimated that the costs of lands would be about \$500,000, the cost of initial development would be about \$57,000, and annual operation and maintenance costs would be \$10,000."

Comments. - The Service estimates the 1,000 acres of land would provide 3,200 man-days of upland game hunting, mitigating upland game losses associated with both Skiatook and Birch Reservoir projects, and would provide benefits resulting from an additional 2,600 man-days of upland game hunting. The Service reported losses for upland game hunting of 600 and 250 man-days annually for Skiatook

and Birch Reservoirs, respectively. Based on land acquisition costs of \$500,000, initial development costs of \$57,000, and annual operation and maintenance costs of \$10,000, the total annual charges are shown in table 1.

TABLE 1

SUMMARY OF ANNUAL CHARGES  
PROPOSED WILDLIFE MANAGEMENT AREA

Item	Land	Initial development	Total
	\$	\$	\$
First cost	500,000	57,000	557,000
Interest during construction	0	0	0
Investment	500,000	57,000	557,000
Annual charges, interest, and amortization	16,300	1,900	18,200
Operation and maintenance costs	0	10,000	10,000
Total	16,300	11,900	28,200

With annual charges of \$28,200 to furnish 3,200 man-days of upland game hunting, each man-day of hunting would cost \$8.81. Based on the range of values contained in Supplement No. 1 to Senate Document No. 97, this cost is considered excessive. Therefore, the purchase of additional lands, development, and operation and maintenance of the proposed upland game management area is not economically feasible and is not proposed.

(8) Recommendation No. 8. - "That project purchased lands be clearly marked by the Corps of Engineers immediately following acquisition so as to delineate those areas open to hunting and fishing and other public uses."

Comments. - Tulsa District plans to survey and mark the boundary of project lands before completion of the project. Developed public-use areas and areas reserved for project operation, health, and public safety will be well marked by signs. The project area will be open to hunting and fishing except for areas reserved for operation, health, and safety.

3. Summary.

a. The net benefits shown in the letter report by the U. S. Fish and Wildlife Service are less than those previously estimated by

the Tulsa District. The differences are not critical to the overall economics of the project.

b. Downstream water release schedules represent the maximum use of the resources available. Tulsa District believes the releases will provide the enhancements to sport and commercial minnow fishing discussed in the Service report.

c. Fishing access to the stilling basin is desirable and will be given consideration in design of the outlet features.

d. Water level manipulation is a fish management tool but may conflict with other project purposes. Each request for water level manipulation would be given consideration.

e. Tulsa District concurs in the recommendation for providing seining areas.

f. Access will be provided to the upper part of the reservoir at the Hominy Landing public-use area.

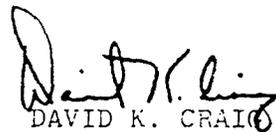
g. Any zoning plan for the reservoir will be coordinated with the interested agencies.

h. Provisions of additional land, development, operation, and maintenance for a public hunting area are not economically justified.

i. Project lands will be surveyed and marked during project construction. The project will be available for hunting and fishing except areas reserved for operation, health, and safety.

4. Recommendation. - Recommend this supplement be approved as the basis for further planning.

FOR THE DISTRICT ENGINEER:



DAVID K. CRAIG  
LTC, CE  
Deputy District Engineer

EXHIBIT A

Report by U. S. Fish and Wildlife Service



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
BUREAU OF SPORT FISHERIES AND WILDLIFE

POST OFFICE BOX 1306  
ALBUQUERQUE, NEW MEXICO 87103

February 8, 1966

District Engineer  
Corps of Engineer, U. S. Army  
Post Office Box 61  
Tulsa, Oklahoma

Dear Sir:

This letter constitutes the report of the Bureau of Sport Fisheries and Wildlife on the fish and wildlife resources in relation to the Skiatook Reservoir, Oklahoma. It is intended to accompany your Design Memorandum on this project. Skiatook Reservoir was authorized as part of the Verdigris River and Tributaries developments, Kansas and Oklahoma, by the Flood Control Act of October 23, 1962 (76 Stat. 1173). This report has been prepared under the authority and in accordance with the provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). It is based on information provided by your office prior to October 23, 1965. The report has the concurrence of the Oklahoma Department of Wildlife Conservation as signified by the enclosed copy of a letter dated October 18, 1965, signed by Director Wendell Bever. This report has also been coordinated with and has the concurrence of the Bureau of Commercial Fisheries.

A preliminary review of the fish and wildlife aspects of the project based on earlier engineering plans for flood control and associated purposes on the Verdigris River and Tributaries system was presented in a letter report dated March 22, 1962. This Bureau issued a letter report dated June 22, 1964, on Birch Dam and Reservoir, Verdigris River and Tributaries project. In that report, it was indicated that wildlife losses associated with Birch Reservoir should be mitigated in conjunction with mitigation of wildlife losses associated with other features of the Verdigris River and Tributaries system, namely Skiatook and Candy Reservoirs.

The Skiatook Dam site is located on Hominy Creek at stream mile 14.3 approximately 4 miles west of Skiatook in Osage County, Oklahoma. The reservoir will be operated as one of the units of the flood control system authorized in the Verdigris River and Tributaries Project. Other units are Birch, Candy, Sand, and Copan Reservoirs. Project purposes include flood control, water supply, water quality control, fish and wildlife, and recreation. In combination with Birch and Candy Reservoirs, Skiatook Reservoir will serve to control partially the flood flows of Bird Creek.

## DESCRIPTION OF THE AREA

Hominy Creek heads in south-central Osage County and flows southeasterly 72 miles to its confluence with Bird Creek, a tributary of the Verdigris River. The watershed is roughly elliptical in shape with terrain that ranges from flat, fertile bottomlands to rolling and hilly uplands. The upper end of the watershed is characterized by grasslands with scattered timber whereas the lower area has moderate timber cover with a significant acreage of cultivated land.

Hominy Creek is a meandering, deeply entrenched stream with an average gradient of 5.3 feet per mile. It is subject to extreme fluctuations of flow, overflowing its channel during periods of heavy precipitation, but often having zero flows during periods of drought. Average annual rainfall is about 36 inches with most of the yearly rainfall occurring from April through September. The climate is characterized by moderate winters and long summers with relatively high temperatures.

Although the project is located in a predominantly rural area, approximately 890,000 people reside within a day-use distance of 75 miles of the proposed reservoir site. A high degree of expanded urbanization is indicated for this area. Based on available data, about 2,400,000 people will live within the 75-mile radius by 2020. Larger cities and towns within this radius include Tulsa, Bartlesville, Muskogee, Okmulgee, Sapulpa, Claremore, Pawhuska, Stillwater, and Ponca City, Oklahoma; and Arkansas City, Coffeenville, Independence, and Sedan, Kansas.

Agriculture and crude oil and natural gas production are the major enterprises in the area. The major agricultural pursuits are livestock production and general farming.

## PLAN OF DEVELOPMENT

Skiatook Dam will be a rolled earthfill structure approximately 3,560 feet long. The reservoir at top of the flood control pool and conservation pool will cover 13,950 and 10,540 surface acres, respectively. The area of the average annual minimum pool will be approximately 8,100 acres. Pertinent reservoir operation data are presented in Table 1.

Table 1. Pertinent Data, Skiatook Reservoir

Item	Elevation (feet m.s.l.)	Surface Area (acres)	Capacity (acre-feet)
Top of flood control pool	729.0	12,950	513,500
Average annual max. pool	716.0	10,940	352,700
Top of conservation pool	714.0	10,540	331,200
Average annual min. pool	701.5	8,100	214,900
Inactive pool	657.0	1,476	11,760
Streambed	613.0	-	-

At conservation pool elevation, the reservoir will have a capacity of 331,200 acre-feet. This capacity will make possible a dependable yield of about 234 acre-feet per day for future municipal, industrial, and water quality control needs. Preliminary project information indicates that slightly under 20 percent of this water supply yield will be for municipal and industrial use and the remaining 80 percent will be available for water quality control. In the initial years of project operation, probably until the year 1990, water quality releases will not require all of the water available for this purpose. Table 2 shows water quality releases during the early years of project operation.

Table 2. Skiatook Reservoir Water Quality Releases  
To Year 1990

Month	Average Daily Releases (second-feet)
January	1.3
February	1.2
March	1.3
April	1.2
May	1.3
June	18.0
July	88.0
August	100.0
September	48.0
October	13.0
November	7.0
December	1.1

After 1990, water quality releases will gradually increase, depending on demand. Ultimately, the average annual releases in Hominy Creek for water quality may reach 96 second-feet.

Estimated land requirements, as provided by the Corps of Engineers, indicate that approximately 20,000 acres will be acquired in fee title. This is based on a blocked perimeter that encompasses the area to be covered at the spillway crest elevation, including free-board allowance, or limits of backwater effects, whichever is higher, with a minimum distance of 300 feet horizontally from the static full pool, elevation 729.0 feet.

Personnel from your office have indicated that from six to nine public-use areas and boat-launching ramps are planned for the Skiatook Reservoir including access and parking facilities in the area immediately downstream from the dam. Fish and wildlife evaluations of this project have been made on the assumption that this access will be developed and available to the public.

Fish and wildlife resources also are evaluated on the assumption that during the without-the-project period of analysis, none of the authorized reservoirs affecting Bird Creek will be in place. These reservoirs are Birch, Candy, and Skiatook. With-the-project evaluations are made on the assumption that Skiatook Reservoir only will be in operation. Plate I shows the location of Skiatook Reservoir in relation to other associated reservoirs of the Verdigris River and Tributaries Project. Skiatook Dam and Reservoir are shown on Plate II.

## FISH

### Without the Project

The area of project influence on fish habitat includes approximately 40 miles of Hominy Creek from the upstream end of the proposed Skiatook Reservoir to its confluence with Bird Creek and approximately 27 miles of Bird Creek from the mouth of Hominy Creek to its confluence with the Verdigris River.

Fish habitat quality in Hominy Creek ranges from moderate to high depending on water conditions. During the spring and early summer months, fishing success is highest, with good catches of channel catfish, flat-head catfish, crappie, largemouth bass, and various smaller sunfishes being taken. During the late summer months, fishing is limited to the

deeper pools, and success declines correspondingly. In the upper reach, Hominy Creek flows through a well-defined canyon and possesses numerous riffle and pool areas. In this upper zone, the cooler, swifter water supports populations of spotted bass.

The 27 miles of Bird Creek within the area of project influence provides low quality fish habitat, being adversely affected by industrial and domestic pollution.

Public access to most reaches of Hominy and Bird Creek in the project area is restricted. Where roads cross or approach the streams, the immediate areas are fished. Projected over the 100-year period of analysis without the project, the 40 miles of Hominy Creek affected by the project would support about 3,100 fisherman-days per year. Sport fishing in Bird Creek would average 1,100 man-days annually.

Commercial fishing for food fishes throughout the project area would not be significant. The commercial minnow fishery in the lower reaches of Hominy and Bird Creeks would contribute to the income of several bait dealers. It is estimated that the minnow fishery in Hominy Creek and Bird Creek would amount to about 80 gallons per year.

#### With the Project

At conservation pool elevation, Skiatook Reservoir will form a 10,540-acre impoundment. The reservoir will be a relatively clear, fertile body of water capable of supporting initially good populations of sport fish species such as largemouth bass, white crappie, channel catfish, bluegill, and various smaller sunfishes. It is expected, however, that long range environmental conditions will prove more favorable for the production of nongame fishes. Such species as freshwater drum, carp, buffalofishes, gar, and carpsucker will predominate in later years and, as these species become dominant, sport fishing will decline.

Skiaotook Reservoir will be in an area where there are numerous existing reservoirs and where several others are authorized for construction. Existing impoundments within 75 miles of the project area have a total of more than 220,000 surface acres of available fishing water. Projects authorized for construction will provide an additional 35,000 surface acres, all within a day-use distance of the project site.

Despite the abundance of impoundments within the area, Skiatook Reservoir will attract fishermen from Tulsa as well as from adjacent towns and communities. It is estimated that the reservoir will support 52,000 sport-fisherman-days annually.

The construction and operation of the Skiatook Dam and Reservoir will inundate about 26 miles of Hominy Creek. It is anticipated that the proposed allocation for water quality releases during the period of June through November will improve the fish habitat in the 14.3-mile reach of Hominy Creek downstream from Skiatook Reservoir and in the 27 miles of Bird Creek below the confluence of Hominy Creek. Water quality releases during the remainder of the year, however, will be very low. This condition will affect the sport fish population in Hominy Creek and will have some deleterious effects on the fishery resource in Bird Creek during this period.

Under these conditions, it is estimated that Hominy Creek downstream from Skiatook Dam site, excluding the stilling basin area, will support about 1,400 fisherman-days per year. The reach of Bird Creek below Hominy Creek will carry an estimated 2,200 fisherman-days annually. The stilling basin area will support about 4,000 fisherman-days annually.

Table 3 presents a summary of fishing without and with the project.

Table 3. Average Annual Man-days of Fishing

Item	Without Project	With Project	Gain or Loss
Hominy Creek, 40.0 miles	3,100	1,400	-1,700
Bird Creek, 27.0 miles	1,100	2,200	1,100
Skiatook Reservoir, 8,100 acres	0	52,000	52,000
Stilling Basin Area, 0.5 mile	0	4,000	4,000

The reservoir will support good populations of commercially desirable fishes, and it is estimated that a commercial food fish catch, composed primarily of freshwater drum, carp, buffalofishes, and white bass, of 200,000 pounds will be harvested annually.

The improved downstream flow regime in the lower reaches of Hominy and Bird Creeks during the summer and fall months will support an increased commercial minnow fishery. The close proximity of the Skiatook Reservoir to population centers will very likely put more impetus on this commercial resource. It is estimated that about 160 gallons of bait minnows will be harvested in the lower reaches of Hominy Creek and Bird Creek.

## WILDLIFE

## Without the Project

The area of project influence on wildlife includes the 20,000 acres of land to be acquired for project purposes at the reservoir site, about 5,100 acres in the Hominy Creek floodplain and 21,400 acres in the Bird Creek floodplain from the junction of Hominy Creek downstream to the confluence of Bird Creek with the Verdigris River.

Vegetation within the area of project influence is a composite of bottomland timber and shrubs interspersed with fields of cropland and pasture in the floodplain and mixed tall-grasses and post oak-blackjack oak timber on the uplands.

White-tailed deer are present in the area in moderate numbers and populations are increasing throughout this section of Oklahoma. Principal upland-game species are fox squirrel, cottontail, swamp rabbit, mourning dove, and bobwhite. Fur-animal species include mink, raccoon, skunk, fox, and opossum. Waterfowl numbers in the project area are low.

Wildlife habitat over the without-the-project period of analysis would be suitable for sustaining huntable populations of deer, squirrels, cottontails, mourning doves, and bobwhites. However, clearing trends and agricultural emphasis toward converting bottomland timber to improved pasture and cropland would have an adverse effect on deer, squirrel, and fur-animal habitat and populations.

Over the 100-year period of analysis, there would be about 1,000 man-days of deer hunting annually within the combined areas of the reservoir site and the floodplains of Hominy and Bird Creeks. Upland-game hunting in the area of project influence would amount to about 2,900 man-days per year. Sport hunting for fur animals, primarily fox and raccoon, would amount to about 3,400 man-days annually. There would be approximately 600 pelts taken on these lands. Waterfowl hunters would account for about 500 man-days of hunting annually.

## With the Project

Project construction and operation will result in the permanent loss of some 10,940 acres of wildlife habitat within the average annual maximum pool. An additional loss of about 1,500 acres will be sustained through use of lands for the damsite, access roads, parking areas, and recreation areas. An additional 26,500 acres of bottomland downstream from the reservoir site will be affected through land-use changes resulting from increased flood protection.

Big-game hunting will be reduced directly as a result of deer habitat being inundated by the reservoir. Forested stream bottoms are an integral part of deer habitat throughout this region of Oklahoma, and loss of a significant acreage of this food and cover-producing area will reduce the carrying capacity of the area. Land-use changes on portions of the protected downstream floodplain also will adversely affect huntable populations of deer on these affected areas.

Upland-game habitat within the conservation pool of the reservoir will be lost through inundation. With the associated downstream flood protection, bottomland hardwoods will be cleared for agricultural purposes. Under these conditions, dove, cottontail, and bobwhite populations are expected to increase, and squirrel populations will decline.

Inundation in the reservoir site and land-use changes downstream from the reservoir will result in reduced fur-animal hunting and reduced fur take.

Waterfowl hunting on the reservoir is expected to be moderate. Lack of food-producing areas, however, will preclude prolonged use by migrating and wintering ducks and geese. Some waterfowl habitat will be lost through downstream land-use changes occasioned by the project.

Projected over the period of analysis with the project, an average of 600 man-days of big-game hunting, 2,300 man-days of upland-game hunting, and 1,300 man-days of fur-animal hunting can be expected annually within the project area. Approximately 400 pelts will be taken on project-affected lands. About 900 man-days of waterfowl hunting annually also can be expected with the project.

Table 4 presents a summary of hunting without and with the project.

Table 4. Summary of Hunting Man-days Annually

Kind of Hunting	Without Project	With Project	Gain or Loss
Big game	1,000	600	-400
Upland game	2,900	2,300	-600
Fur animal	3,400	1,300	-2,100
Waterfowl	500	900	400

## DISCUSSION

There will be an increase in fishing in the 14.3 miles of Hominy Creek below Skiatook Dam and in the 27.0 miles of Bird Creek from the confluence of Hominy Creek to the Verdigris River. This increase is based on the schedule of releases shown in Table 2 and also on the assumption that such flows will be increased after 1990 to meet anticipated downstream water requirements.

To insure preservation of stream fishery resources during initial years of project operation and during the scheduled low-flow period of December to June, minimum instantaneous releases should be made from Skiatook Dam. In the period April through October, the minimum release should be 10 second-feet and from November through March the minimum release should be 5 second-feet.

A schedule of minimum instantaneous releases, as described above, would provide additional fishery benefits in Hominy and Bird Creeks. The improved streamflows would provide an additional 2,500 man-days of stream sport fishing and would increase the commercial minnow catch by 50 gallons annually. Furthermore, such flows would enhance significantly the stilling basin area of the project, resulting in 4,000 additional fisherman-days each year.

Construction of a berm or other suitable type fishing platform with guardrails on the retaining wall overlooking the stilling basin would contribute greatly to fisherman safety and also would facilitate increased fishing in the stilling basin area. Cost of the berm-type fishing platform would be insignificant if provisions for such are included in the initial design of the dam. It is estimated that an additional 1,000 fisherman-days annually would occur in the stilling basin area if the suggested facility is constructed.

Skiatook Reservoir initially will provide good sport fishing. Because of gradual increases in numbers of nongame fishes, however, the fishing will lower in quality. To help assure high quality sport fishing, the Oklahoma Department of Wildlife Conservation has expressed a desire to have the water level of the reservoir manipulated as part of a fish-population control program. Such a program would entail periodic drawing down of reservoir waters to the lowest feasible pool elevation combined with intensive reduction of fishes by seining or other fishery management techniques initiated during and after the drawdown. Such a plan, if carefully devised and executed, would eliminate a large percentage of the population of nongame fishing and would provide a more favorable environment for the production or restocking of sport fishes.

Timing of drawdowns would be dependent on fish population data determined by State fishery biologists and would be initiated when such operations are consonant with the interests of all other project purposes. Correctly timed, a water-level manipulation program would result in little additional cost to reservoir operation.

Implementation of a water-level manipulation plan would make possible an additional 16,000 man-days of sport fishing annually. Commercial fishing benefits amounting to a harvest of 280,000 pounds of fish annually would also occur with a program of selective water-level manipulations.

To help harvest the commercially valuable fish from the reservoir, three seining sites should be established. The proposed sites have been located on cultivated or open pasture areas which would require little additional clearing. The areas should be cleared to an elevation approximately 1 foot above conservation pool level. All obstructions to seining, especially tree stumps, should be removed just below ground level to prevent fouling of nets. Clearing should be accomplished immediately prior to impoundment to prevent regrowth of woody vegetation which would render the sites unusable. Location of the three seining areas, totaling approximately 300 acres, are designated on Plates III and IV. Clearing of the areas, at an estimated cost of \$4,500, should be a project obligation. If adequate provision is made for seining areas, an increased commercial fish harvest of 100,000 pounds would occur annually.

Fish and wildlife evaluations as presented herein are based on the premise that from six to nine public access-parking areas with boat-launching ramps and associated basic facilities will be provided at advantageous locations about the reservoir and immediately downstream from the dam. It would be desirable to locate one of the planned access sites in the upper extremes of the reservoir area. This would assure greater hunter and fisherman access to the project lands. It is estimated that an additional 1,500 man-days of fishing per year would be realized if an access site were located in the upper end of the reservoir. Little additional cost would be involved in relocating the facility because existing roads could be used in conjunction with such an access site.

Consideration should be given to the use of the reservoir for all water-based recreation through adequate zoning of reservoir waters. Adoption of an adequate plan would increase fishing benefits in the reservoir and would be in the interest of public safety so that sports such as speed-boating and waterskiing will not present hazards to fishermen. Zoning regulations should be established cooperatively by the agencies expected to administer the reservoir.

Major wildlife losses will result from land-use changes associated with flood protection afforded the Hominy Creek floodplain and from the inundation of wildlife lands by the Skiatook Reservoir. A wildlife management area should be developed to permit mitigation of such losses to the degree possible.

Wildlife losses also will occur along the Bird Creek floodplain from Birch Reservoir to the Verdigris River through flood protection afforded by Birch Reservoir, another phase of the Verdigris River and Tributaries Project. This Bureau's letter report of June 22, 1964, on Birch Reservoir pointed out that major wildlife losses would result from flood protection afforded the Bird Creek floodplain but that it would not be economical to manage specific wildlife lands on the Birch Reservoir area to mitigate the associated losses. That report on page 10 states, "However, the plans for the mitigative measures are being deferred until we report on Skiatook Reservoir. At that time, we will present a plan to mitigate all wildlife losses associated with reservoirs affecting the Bird Creek floodplain."

Although valuable big-game and fur-animal hunting will be lost with the project, it will not be possible to mitigate that loss in kind in the project area. The limited amount of suitable timberland surrounding the reservoir precludes intensive management of project lands for big game or fur animals. Adequate areas suitable for big game and fur animals are lacking also in the downstream section. It would be possible, however, to mitigate the loss of upland-game hunting through management of lands in the Hominy Creek floodplain just downstream from Skiatook Reservoir. The Oklahoma Department of Wildlife Conservation has expressed a willingness to administer an upland-game management area in the downstream section.

Under intensive management, an area of about 1,000 acres as depicted on Plate V would support high populations of mourning doves, bobwhites, and cottontails with some use by woodcock and snipe. The habitat of the management area would not be suitable for mitigating the loss of 400 man-days of big-game hunting and 2,100 man-days of fur-animal hunting. The area would provide 3,200 man-days of upland-game hunting. This would mitigate upland-game hunting losses associated with both Skiatook and Birch Reservoir Projects. It would also provide benefits resulting from an additional 2,600 man-days of upland-game hunting.

Initial development of the wildlife management area would require fencing and posting of acquired lands, construction of roads, headquarters and other buildings, and cover development of habitat. Habitat improvement would include establishment of cover plants around field boundaries and

planting of wildlife foods such as alfalfa, clover, and various small grains. The annual operation and maintenance costs which would include habitat management would be about \$10,000 annually. The land acquisition costs, the initial development costs, and annual operation and maintenance costs would be at project expense.

Costs associated with the acquisition and development of the management area are shown in Table 5.

Table 5. Summary of Estimated Costs for Establishing Wildlife Management Area

Item	Cost
<u>Land Acquisition</u>	
1,000 acres	\$500,000
Subtotal	\$500,000
<u>Development</u>	
Fencing and posting	12,000
Headquarters and equipment shed	20,000
Gravel road for management purposes, 1 mile	6,000
Farming equipment	9,000
Habitat development	10,000
Subtotal	<u>57,000</u>
Total	<u>\$557,000</u>

After acquisition, the management area should be made available to the Oklahoma Department of Wildlife Conservation under terms of a General Plan as provided for in Section 3 of the Fish and Wildlife Coordination Act.

Public fishing and hunting on project lands could be assured during project construction and operation if the boundaries of federally-acquired lands were delineated and marked conspicuously immediately after purchase.

## RECOMMENDATIONS

It is recommended:

1. That minimum instantaneous releases from Skiatook Dam of 10 second-feet be made during the months of April through October and 5 second-feet during the months of November through March.
2. That a berm or other suitable type fishing platform with guardrails be installed on or near the retaining wall overlooking the stilling basin to help assure fisherman safety and to facilitate additional fishing in the stilling basin area. Cost of the facility would be insignificant if provisions for such were included in the initial design of the dam.
3. That provision be included in plans for project operation for water-level manipulation as an aid to fishery management; provided that such manipulations are consonant with the best interests of all project purposes.
4. That the project plan of operation include three cleared and chartered seining areas totaling approximately 300 acres in the general locations indicated on Plates III and IV. Additional costs for clearing are estimated to be \$4,500.
5. That one of the presently planned public access areas be relocated in the upper end of the reservoir. The cost for relocating the access area would be insignificant.
6. That, in the interest of public safety and to insure that adequate areas will be available for fishing, hunting, and other wildlife purposes without conflicting uses for general recreation, a reservoir zoning plan be developed cooperatively by the Corps of Engineers, the Oklahoma Department of Wildlife Conservation, and the Oklahoma Planning and Resources Board.
7. That, to mitigate losses to upland-game hunting resulting from construction of Skiatook and Birch Dams and to enhance upland-game hunting, approximately 1,000 acres of land as delineated on Plate V be acquired and developed at project expense and be made available to the Oklahoma

Department of Wildlife Conservation under the terms of a General Plan as provided in Section 3 of the Fish and Wildlife Coordination Act, and that annual operation and maintenance costs be funded by the project. It is estimated that the cost of lands would be about \$500,000, the cost of initial development would be about \$57,000, and annual operation and maintenance costs would be \$10,000.

8. That project purchased lands be clearly marked by the Corps of Engineers immediately following acquisition so as to delineate those areas open to hunting and fishing and other public uses.

#### CONCLUSIONS

Construction and operation of the Skiatook Reservoir will provide moderate quality fishing. Sport fishing benefits of 55,400 man-days valued at \$55,400 annually can be attributed to the project. The reservoir will, however, inundate about 26 miles of stream habitat.

Approximately 200,000 pounds of commercial fishes will be harvested from the reservoir for a benefit of \$24,000 annually. In addition, the increased downstream flow regimen will improve stream habitat in Hominy and Bird Creeks and provide for an increase in the commercial minnow fishery of 80 gallons for a benefit of about \$600 annually.

Losses of 400, 600, and 2,100 man-days of big-game, upland-game, and fur-animal hunting, respectively, will result from habitat inundation and from land-use changes resulting from increased flood protection. The take of fur-animal pelts will be reduced by 200 annually. There will be an increase of 400 man-days of waterfowl hunting valued at \$1,600 annually.

Provision of minimum instantaneous releases, as discussed in Recommendation No. 1, would enhance the stream fishing in Hominy and Bird Creeks and would provide for increased fishing in the stilling basin. The releases would provide for an additional 6,500 fisherman-days valued at \$6,500 annually. The improved streamflow conditions would also increase the commercial minnow catch by 50 gallons valued at \$400 annually.

The inclusion of Recommendation No. 2 would promote safer and more efficient fisherman use of the reservoir stilling basin area and would increase fishing by 1,000 man-days, thus providing a benefit of approximately \$1,000 annually.

Recommendations No. 3 and No. 4 would provide significant sport and commercial fishery benefits. A water-level management program would provide an additional 16,000 man-days of sport fishing valued at \$16,000 annually and an increased harvest of commercial fish of 280,000 pounds valued at \$16,800 per year. Cleared and charted seining areas would provide for an additional 100,000 pound harvest of commercial fish valued at \$6,000 annually.

Provision of a public access site and boat-launching ramp in the upper reaches of the Skiatook Reservoir, as presented in Recommendation No. 5, would result in increased fishing in the reservoir. Such access would provide an additional 1,500 man-days of sport fishing valued at \$1,500 annually.

An adequate reservoir zoning plan, as proposed in Recommendation No. 6, would assure that certain areas of the reservoir would be reserved for fishing and hunting. Adoption of an adequate zoning plan would result in additional fishing benefits and increased public safety.

Upland-game hunting losses resulting from inundation of habitat and land-use changes associated with flood protection would be compensated for by acquisition and development of the wildlife management area as described in Recommendation No. 7. The management area would provide an additional 2,600 man-days of upland-game hunting for a benefit of \$2,800 annually.

The marking of project lands immediately following acquisition, as advocated in Recommendation No. 8, would insure realization of fishing and hunting benefits attributed to the project.

This report is based on information provided by your office prior to October 23, 1965, and is subject to change upon receipt of additional project information.

The cooperation extended to us by your staff during our investigation is appreciated.

Sincerely yours,

  
John C. Gatlin  
Regional Director

Enclosure

Copies (10)

## Distribution:

- (4) Director, Oklahoma Department of Wildlife Conservation,  
Oklahoma City, Oklahoma
- (2) Regional Director, Bureau of Commercial Fisheries, Region 4,  
Ann Arbor, Michigan
- (1) Regional Engineer, Public Health Service, Region 7, Dallas, Texas
- (1) Administrator, Southwestern Power Administration, Tulsa, Okla.
- (1) Area Director, Bureau of Mines, Area 4, Bartlesville, Okla.
- (1) Regional Coordinator, Southwest Field Committee, USDI,  
Muskogee, Oklahoma
- (2) Regional Director, National Park Service, Southwest Region,  
Santa Fe, New Mexico
- (2) Field Supervisor, Division of River Basin Studies, Bureau of  
Sport Fisheries and Wildlife, Tulsa, Oklahoma

SKIATOOK LAKE  
HOMINY CREEK, OKLAHOMA

SUPPLEMENT NO. 2  
TO  
DESIGN MEMORANDUM NO. 2  
GENERAL DESIGN

1. Purpose. - This supplement presents a U.S. Fish and Wildlife Service report on Skiatook Lake and Tulsa District comments thereto.

2. Report. - The U.S. Fish and Wildlife Service submitted a letter report dated 8 February 1966, pertaining to the authorized Skiatook Dam and Lake. This report recommended that project-caused wildlife losses associated with Birch and Candy Lakes should be mitigated in conjunction with mitigation of project-caused wildlife losses at Skiatook Lake. The report proposed acquisition of about 1,000 acres of land downstream from the damsite to be developed for wildlife management purposes. Tulsa District evaluated this proposal, as shown in Supplement No. 1, dated 21 December 1966, recognizing the possible intangible, social, and environmental benefits that might accrue and found acquisition of additional lands in fee and development of the wildlife area was not considered feasible. The U.S. Fish and Wildlife Service more recently investigated the project and found two areas of project lands suitable for an alternative plan of wildlife mitigation. These proposals were furnished to the District in a supplemental letter report dated 12 February 1975. Copy of this report is inclosed as exhibit A.

3. U.S. Fish and Wildlife Service recommendations and Tulsa District comments.

a. Recommendation No. 1. - About 2,350 acres of project land in two units, one on the upper mainstem of Hominy Creek and the other on the arm of Bull Creek, be made available to the Oklahoma Department of Wildlife Conservation for administration and management under the terms of a General Plan as provided in Section 3 of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.).

Comment. - Lands that are available for wildlife management purposes that have been requested by the Oklahoma Department of Wildlife Conservation will be considered for administration by this agency under the terms of a General Plan as provided in Section 3 of the Fish and Wildlife Coordination Act to provide compensation for project-caused wildlife losses. Approximately 2,380 acres will be available for this purpose. The mainstem unit contains 1,380 acres to be purchased in fee and 1,000 acres will be purchased in fee along Bull Creek.

b. Recommendation No. 2. - All project land in the above two proposed mitigation units be purchased in fee rather than in flowage easement.

Comment. - The fee purchase line for the lake area is based on a blocked perimeter encompassing the acquisition guideline, elevation 734.0 feet, with a minimum distance of 300 feet measured horizontally from the top of the conservation pool, elevation 714.0. Small flowage easements were taken over land below the acquisition guideline in the two requested areas. These easements are located in the extreme reaches of smaller tributaries and possess no wildlife management potential because of their size and terrain. A total of 2,380 acres will be purchased in fee in the two units described in the recommendation.

c. Recommendation No. 3. - Funds in the amount of \$246,300 be made available to the U.S. Fish and Wildlife Service to cover the costs incurred by the Oklahoma Department of Wildlife Conservation for initial development of the wildlife mitigation areas, and the sum of \$3,000 be obligated on an annual basis to help defray maintenance and replacement costs.

Comment. - The \$246,300 as recommended should be revised. Recently boundary fencing as described has become a project feature and is not listed as a mitigation cost. Neither does the District agree to the administration costs included in the proposal. Thus, this recommendation is evaluated deleting these costs and using a revised mitigation cost of \$123,400 for first development (tables 1 and 2). Wildlife losses and values for the three lakes as determined under SD97 are as follows:

	Birch and Skiatook (average annual man days)	Candy (average annual man days)	Total	Value \$	Total \$
Big game	400	-	400	6.00	2,400
Upland game	850	400	1,250	5.00	6,250
Fur animals	2,100	-	2,100	4.50	9,450
Waterfowl	50	-	50	4.50	225
Other wildlife	-	100	100	1.50	150
Total					18,475

With the proposed development plan the Service reports that about 25 percent of big game, upland game, and other wildlife hunting losses would be mitigated. Waterfowl hunting losses would be fully mitigated. Furbearers were not mentioned, so it is assumed those losses would be fully mitigated. Mitigable losses are as follows:

	<u>Birch and Skiatook</u>	<u>Candy</u>	<u>Total</u>	<u>Value</u>
Big game	100	-	100	100 x \$6.00 = \$600
Upland game	212.5	100	312.5	313 x \$5.00 = 1,565
Fur animals (pelts)	2,100	-	2,100	2,100 x \$4.50 = 9,450
Waterfowl	50	-	50	50 x \$4.50 = 225
Other wildlife	-	25	25	25 x \$1.50 = 38
<b>Total</b>				<b>\$11,878</b>

TABLE 1

ESTIMATED DEVELOPMENT COSTS FOR PROPOSED  
HOMINY CREEK WILDLIFE MANAGEMENT AREA

<u>Item and quantity</u>	<u>Cost</u>
	\$
Boundary marking and signs	:
2 large signs @ \$500 each	: 1,000
20 small signs @ \$5.00 each	: 100
Roads and improvements	:
1 mile new gravel road @ \$30,000/mile	:30,000
1 mile gravel road improvement @ \$18,000/mile	:18,000
5 parking lots w/6-inch gravel base, 1/8 acre in size @ \$1,400 each	: 7,000
Habitat improvement	:
Shrub and vine plantings, strip clearing, food plots, etc.	: 5,000
Contingencies	:18,100
Engineering and planning	:11,800
<b>Total</b>	<b>:91,000</b>

TABLE 2

ESTIMATED DEVELOPMENT COSTS FOR PROPOSED  
BULL CREEK WILDLIFE MANAGEMENT AREA

Item and quantity	: Cost
	: \$
Boundary marking and signs	:
2 large signs @ \$500 each	: 1,000
20 small signs @ \$5.00 each	: 100
	:
Roads and improvements	:
0.5 mile gravel road improvement @ \$18,000/mile	: 9,000
3 parking lots w/6-inch gravel base, 1/8 acre in size @ \$1,400 each	: 4,200
	:
Habitat improvement	:
Shrub and vine plantings, strip clearing, food plots, etc.	: 5,000
	:
Contingencies	: 7,900
	:
Engineering and planning	: 5,200
	:
Total	: 32,400

A summary of annual charges for the proposed plan follows:

First cost	\$123,400
Annual charges, interest, and amortization at 3-1/8 percent	4,042
Operation and maintenance	<u>3,000</u>
Cost - Total annual charges	\$7,042

With annual charges of \$7,042 including operation and maintenance cost of \$3,000, the proposal has a benefit-to-cost ratio of 1.6 to 1. Thus, the proposal appears implementable. Funds in the amount of \$123,400 will be made available to the Oklahoma Department of Wildlife Conservation for development of the wildlife management area contingent upon the development of a mitigation plan mutually acceptable to the Service, the Department, and the Corps. However, current Corps policy does not allow annual funding to the State for operation and maintenance; therefore, the \$3,000 recommended cannot be provided.

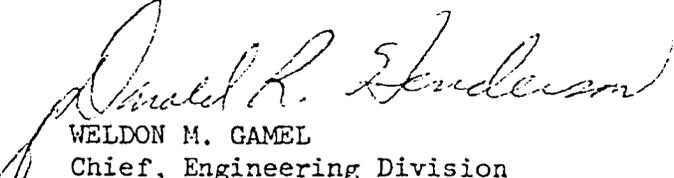
d. Recommendation No. 4. - The timing of the General Plan be adjusted as much as is possible to allow the Oklahoma Department of

Wildlife Conservation to fence the mitigation areas shortly after the Government survey is made and the lands are acquired.

Comment. - Fencing to be accomplished as a project feature during construction would be compatible with the requirements for fencing of the management areas. If any crossfencing in the management area would be necessary, it would be the responsibility of the Oklahoma Department of Wildlife Conservation and it would be a minor item. The General Plan will be initiated as soon as possible following acquisition of project lands.

4. Summary. - Available project lands will be made available to the Oklahoma Department of Wildlife Conservation for wildlife management purposes under the terms of a General Plan. Approximately 2,380 acres will be purchased in fee as recommended. Funds in the amount of \$123,400 will be transferred to the Department for development of the wildlife area contingent upon the development of a mitigation plan mutually acceptable to the Service, the Department, and the Corps. The above items in addition to the boundary fence to be provided as a project feature will satisfy the recommendations for mitigation except for the \$3,000 annual operation and maintenance costs listed in recommendation No. 3.

FOR THE DISTRICT ENGINEER:

  
WELDON M. GAMEL  
Chief, Engineering Division

SKIATOOK LAKE  
HOMINY CREEK, OKLAHOMA

SUPPLEMENT NO. 2  
TO  
DESIGN MEMORANDUM NO. 2  
GENERAL DESIGN

1. Purpose. - This supplement presents a U.S. Fish and Wildlife Service report on Skiatook Lake and Tulsa District comments thereto.

2. Report. - The U.S. Fish and Wildlife Service submitted a letter report dated 8 February 1966, pertaining to the authorized Skiatook Dam and Lake. This report recommended that project-caused wildlife losses associated with Birch and Candy Lakes should be mitigated in conjunction with mitigation of project-caused wildlife losses at Skiatook Lake. The report proposed acquisition of about 1,000 acres of land downstream from the damsite to be developed for wildlife management purposes. Tulsa District evaluated this proposal, as shown in Supplement No. 1, dated 21 December 1966, recognizing the possible intangible, social, and environmental benefits that might accrue and found acquisition of additional lands in fee and development of the wildlife area was not considered feasible. The U.S. Fish and Wildlife Service more recently investigated the project and found two areas of project lands suitable for an alternative plan of wildlife mitigation. These proposals were furnished to the District in a supplemental letter report dated 12 February 1975. Copy of this report is inclosed as exhibit A.

3. U.S. Fish and Wildlife Service recommendations and Tulsa District comments.

a. Recommendation No. 1. - About 2,350 acres of project land in two units, one on the upper mainstem of Hominy Creek and the other on the arm of Bull Creek, be made available to the Oklahoma Department of Wildlife Conservation for administration and management under the terms of a General Plan as provided in Section 3 of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.).

Comment. - Lands that are available for wildlife management purposes that have been requested by the Oklahoma Department of Wildlife Conservation will be considered for administration by this agency under the terms of a General Plan as provided in Section 3 of the Fish and Wildlife Coordination Act to provide compensation for project-caused wildlife losses. Approximately 2,380 acres will be available for this purpose. The mainstem unit contains 1,380 acres to be purchased in fee and 1,000 acres will be purchased in fee along Bull Creek.

b. Recommendation No. 2. - All project land in the above two proposed mitigation units be purchased in fee rather than in flowage easement.

Comment. - The fee purchase line for the lake area is based on a blocked perimeter encompassing the acquisition guideline, elevation 734.0 feet, with a minimum distance of 300 feet measured horizontally from the top of the conservation pool, elevation 714.0. Small flowage easements were taken over land below the acquisition guideline in the two requested areas. These easements are located in the extreme reaches of smaller tributaries and possess no wildlife management potential because of their size and terrain. A total of 2,380 acres will be purchased in fee in the two units described in the recommendation.

c. Recommendation No. 3. - Funds in the amount of \$246,300 be made available to the U.S. Fish and Wildlife Service to cover the costs incurred by the Oklahoma Department of Wildlife Conservation for initial development of the wildlife mitigation areas, and the sum of \$3,000 be obligated on an annual basis to help defray maintenance and replacement costs.

Comment. - The \$246,300 as recommended should be revised. Recently boundary fencing as described has become a project feature and is not listed as a mitigation cost. Neither does the District agree to the administration costs included in the proposal. Thus, this recommendation is evaluated deleting these costs and using a revised mitigation cost of \$123,400 for first development (tables 1 and 2). Wildlife losses and values for the three lakes as determined under SD97 are as follows:

	Birch and Skiatook (average annual man days)	Candy (average annual man days)	Total	Value	Total
				\$	\$
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Other wildlife	-	100	100	1.50	150
Total					18,475

With the proposed development plan the Service reports that about 25 percent of big game, upland game, and other wildlife hunting losses would be mitigated. Waterfowl hunting losses would be fully mitigated. Furbearers were not mentioned, so it is assumed those losses would be fully mitigated. Mitigable losses are as follows:

	<u>Birch and Skiatook</u>	<u>Candy</u>	<u>Total</u>	<u>Value</u>
Big game	100	-	100	100 x \$6.00 = \$600
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TABLE 1

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HOMINY CREEK WILDLIFE MANAGEMENT AREA

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1 mile gravel road improvement @ \$18,000/mile	:18,000
5 parking lots w/6-inch gravel base, 1/8 acre in size @ \$1,400 each	: 7,000
	:
Habitat improvement	:
Shrub and vine plantings, strip clearing, food plots, etc.	: 5,000
	:
Contingencies	:18,100
	:
Engineering and planning	: <u>11,800</u>
	:
Total	:91,000
	:

EXHIBIT A

U.S. DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE

SUPPLEMENTAL REPORT

**EXHIBIT**



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE

RB

POST OFFICE BOX 1303  
ALEBUQUERQUE, NEW MEXICO 87103

February 12, 1975

District Engineer  
Corps of Engineers, U. S. Army  
Post Office Box 61  
Tulsa, Oklahoma 74102

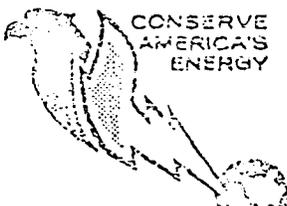
Dear Sir:

This letter is a supplement to the U. S. Fish and Wildlife Service's report of February 8, 1966, pertaining to the authorized Skiatook Dam and Lake Project on Hominy Creek in Osage County, Oklahoma. Recent flooding problems along Bird Creek have stimulated an accelerated construction schedule for Skiatook, Birch, and Candy Lakes. Acquisition guide lines now are definite and some lands are being acquired at Skiatook and Birch Lakes. Continuing coordination among the Corps, the Service, and the Oklahoma Department of Wildlife Conservation and ongoing technical assistance by the Service have revealed several wildlife-related matters which need clarification. Thus, the Service has reexamined the Skiatook, Birch, and Candy Lake projects and finds it necessary to revise and update our earlier report on Skiatook Lake.

Our report on Birch and Candy Lakes, dated June 22, 1964, and March 31, 1970, respectively, did not recommend land acquisition or the use of project lands at these project sites for wildlife mitigation. It was the conclusion of these reports that the best opportunity for wildlife mitigation would be found at the Skiatook Lake site and that the combined mitigation needs for all three projects would be met at this reservoir. The purpose of the present report supplement is to provide a revised plan for the accomplishment of this objective.

The fish and wildlife plans and recommendations presented in the Birch Lake and Candy Lake reports remain applicable and are in no way modified by the provisions of this supplemental report on Skiatook Lake.

This report supplement has been prepared under the authority of and in accordance with the provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended, 16 U.S.C. 661 et seq.).



*Save Energy and You Serve America!*

We have worked closely with the Oklahoma Department of Wildlife Conservation on the revised fish and wildlife plans and recommendations contained herein, and this report also has the concurrence of that Department as indicated by the enclosed letter dated February 3, 1975, and signed by Director I. H. Standefer.

To insure preservation of downstream fishery resources during initial years of project operation and during the scheduled low-flow period of December to June, we recommended in our report of February 3, 1966, minimum instantaneous releases from Skiatook Dam of 5 second-feet during the months of November through March, and 10 second-feet during the months of April through October. In a letter dated October 23, 1970, and signed by Mr. M. W. DeGeer, the Corps stated that present project plans provided for a 5 second-foot minimum release with releases of more than 10 second-feet expected from March through September. We believe these flows will provide acceptable preservation of downstream fisheries and also maintain the aesthetic value of the stream.

In our 1966 report, we also indicated our belief that project-caused wildlife losses associated with Birch and Candy Lakes should be mitigated in conjunction with mitigation of project-caused wildlife losses associated with Skiatook Lake. Recommendation No. 7 of that report proposed the acquisition of approximately 1,000 acres of land downstream from the damsite for a game management area. This area, as planned, would have had a potential capability of mitigating the combined man-day hunting losses of Birch and Skiatook Lakes. These combined hunting losses were estimated to be 400 man-days of big-game hunting, 850 man-days of upland-game hunting, 50 man-days of waterfowl hunting, and 2,100 man-days of other wildlife hunting. The 1,000-acre area would have provided 3,200 man-days of upland-game hunting.

A subsequent letter report of the Fish and Wildlife Service, dated March 31, 1970, set project-caused wildlife hunting losses at the proposed Candy Lake site at 400 man-days of upland-game hunting and 100 man-days of other wildlife hunting.

In a letter dated October 23, 1970, the Corps evaluated the annual cost of the 1,000-acre area at \$28,000 and calculated that it would cost \$8.81 to provide one man-day of upland-game hunting. The Corps considered this cost excessive in comparison with values contained in Supplement No. 1 to Senate Document No. 97 and, therefore, rejected the recommendation on grounds of economic infeasibility. Because of this rejection and because our recent investigations have revealed two areas of Skiatook Lake Project lands with good

wildlife potential, we believe that a suitable alternative plan of wildlife mitigation based on these two project areas would be possible.

The tentative formulation of project boundaries encompassing acquisition guideline elevation 734.0 feet aided greatly in determining the extent and character of project lands lying above the conservation pool level. Representatives of the Service, the Corps of Engineers, and the Oklahoma Department of Wildlife Conservation agree that provision for an alternate plan of mitigation, although such a plan represents a compromise which is less than ideal, would be preferable to simply including project-caused wildlife losses as a cost to the project.

Between the top of the Skiatook Lake conservation pool at elevation 714.0 <sup>1/</sup> and the acquisition guideline contour at elevation 734.0 there will be approximately 4,820 acres of project land surrounding the reservoir having wildlife value. Of this total, 2,350 acres in two separate units would be suitable for use as a wildlife management area. One unit, 1,500 acres in size, is located along the upper mainstem of Hominy Creek, about three miles east of Hominy, Oklahoma (Plate 1). The other area, 850 acres in size, is located on Bull Creek along the north border of the proposed lake site (Plate 2). Project land in these two units should be made available to the Oklahoma Department of Wildlife Conservation for wildlife management purposes under the terms of a General Plan as provided in Section 3 of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). All land in these proposed mitigation units should be acquired in fee rather than in flowage easement, thus insuring the maximum availability of land for wildlife management.

To increase wildlife carrying capacity and mitigate project-caused wildlife hunting losses, intensive development and management of game habitat types on the two units will be necessary. Such development would include boundary marking and fencing, road and parking lot construction, permanent habitat plantings, and sharecropping arrangements for annual food plots. We believe that the initial Government survey will be sufficient to allow fence construction, thus alleviating the need for an additional boundary survey at a later date. If the Oklahoma Department of Wildlife Conservation is able to initiate fencing as soon as possible upon completion of the acquisition of project land and before the boundary markers are either lost or destroyed, fencing costs will be minimized. To insure that this is possible, the General Plan should be scheduled at the earliest practicable date.

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<sup>1/</sup> All elevations are in feet and refer to mean sea level datum.

Initial development of the two wildlife management units should be at project cost, but would be accomplished by the Oklahoma Department of Wildlife Conservation. This initial development is estimated to cost \$246,300, and funds in this amount should be made available to the U. S. Fish and Wildlife Service to reimburse the Oklahoma Department of Wildlife Conservation for the costs incurred by that Department. At least part of the recurring costs of maintenance and replacement should be carried by the project. Therefore, it is proposed that \$3,000 be obligated on an annual basis to help defray this expense. Cost estimates for the two management units are based on 1974 prices and are summarized in the appended Tables 1 and 2.

The wildlife mitigation proposal described above would compensate for about 25 percent of big game, upland game, and other wildlife hunting losses, and fully mitigate waterfowl hunting losses, at the three reservoirs. It would not offset the loss of irreplaceable bottomland habitat. Nevertheless, it is adjudged to be about the best that could be accomplished without the acquisition, development, and management of additional lands.

Therefore it is recommended that:

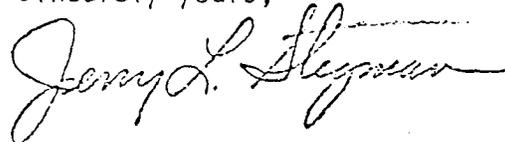
1. About 2,350 acres of project land in two units, one on the upper mainstem of Hominy Creek and the other on the arm of Bull Creek, be made available to the Oklahoma Department of Wildlife Conservation for administration and management under the terms of a General Plan as provided in Section 3 of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.).
2. All project land in the above two proposed mitigation units be purchased in fee rather than in flowage easement.
3. Funds in the amount of \$246,300 be made available to the U. S. Fish and Wildlife Service to cover the costs incurred by the Oklahoma Department of Wildlife Conservation for initial development of the wildlife mitigation areas, and the sum of \$3,000 be obligated on an annual basis to help defray maintenance and replacement costs.
4. The timing of the General Plan be adjusted as much as is possible to allow the Oklahoma Department of Wildlife Conservation to fence the mitigation areas shortly after the Government survey is made and the lands are acquired.

Recommendations Nos. 1 and 2 provide for the establishment on project lands of a wildlife mitigation area, comprised of two separate units, to be administered by the Oklahoma Department of Wildlife Conservation. These two recommendations replace Recommendation No. 7 of our February 8, 1966, report.

Recommendation No. 3, above, pertains to funding allocations for the game management area, while implementation of Recommendation No. 4 is intended to expedite the fencing of the mitigation area as a cost reduction measure.

Thank you for the opportunity to comment on the revised planning data for the Skiatook Lake Project.

Sincerely yours,



Deputy Regional Director

Enclosure

Copies (10)

Distribution:

- (5) Director, Oklahoma Dept. of Wild. Conserv., Oklahoma City, Okla.
- (2) Regional Director, Nat'l Mar. Fish. Serv., St. Petersburg, Fla.
- (1) Regional Director, BOR, Albuquerque, N. Mex.
- (2) Regional Administrator, EPA, Reg. VI, Dallas, Tex.
- (1) Special Asst. to the Secretary, USDI, SW Reg., Albuquerque, N. Mex.
- (2) Field Suprv., FWS, Div. of River Basin Studies, Tulsa, Okla.

Table 1. Estimated Development Costs for the Proposed  
Hominy Creek Wildlife Management Area

Item and Quantity	Cost
Fencing	
16 miles @-\$3,000/mile	\$48,000
2 gates @ \$500 each	1,000
7 cattle guards @ \$1,500 each	10,500
Boundary marking & signs	
2 large signs @ \$500 each	1,000
20 small signs @ \$5.00 each	100
Roads and improvements	
1 mile new gravel road @ \$30,000/mile	30,000
1 mile gravel road improvement @ \$18,000/mile	18,000
5 parking lots w/6-inch gravel base, 1/8 acre in size @ \$1,400 each	7,000
Habitat improvement	
Shrub and vine plantings, strip clearing, food plots, et cetera	5,000
Contingencies	18,100
Engineering and planning	11,800
Administration*	<u>20,800</u>
Total	\$171,300

\* U. S. Fish and Wildlife Service administrative cost included.

Table 2. Estimated Development Costs for the Proposed  
Bull Creek Wildlife Management Area

Item and Quantity	Cost
Fencing	
10 miles @ \$3,000/mile	\$30,000
1 gate @ \$500 each	500
2 cattle guards @ \$1,500 each	3,000
Boundary marking & signs	
2 large signs @ \$500 each	1,000
20 small signs @ \$5.00 each	100
Roads and improvements	
0.5 miles gravel road improvement @ \$18,000/mile	9,000
3 parking lots w/6-inch gravel base, 1/8 acre in size @ \$1,400 each	4,200
Habitat improvement	
Shrub and vine plantings, strip clearing, food plots, et cetera	5,000
Contingencies	7,900
Engineering and planning	5,200
Administration*	9,100
Total	\$75,000

\*U. S. Fish and Wildlife Service administrative cost included.

CONSERVATION COMMISSION

MERVIN LAWVER  
CHAIRMAN

WILLIS LANGDEN  
VICE CHAIRMAN

LYNDOLE FRY  
SECRETARY

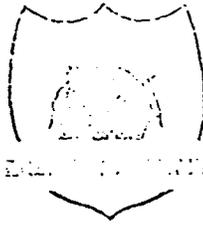
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MUTT STANDEFER, DIRECTOR

GEORGE WINT, ASSISTANT DIRECTOR

GARLAND FLETCHER, ASSISTANT DIRECTOR

DEPARTMENT OF WILDLIFE CONSERVATION

OKLAHOMA CITY, OK. 73105

PH. 521-2

February 3, 1975

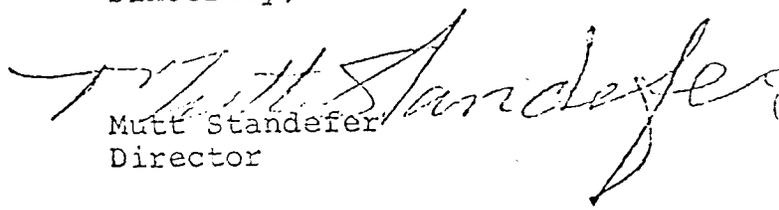
Mr. W. O. Nelson, Regional Director  
Fish and Wildlife Service  
Post Office Box 1306  
Albuquerque, New Mexico 87103

Dear Mr. Nelson:

This is to inform you that we have reviewed your draft report dated December 6, 1974, on Hominy Creek, Osage County, Oklahoma, to be known as Skiatook Reservoir, and we concur with the report.

Thank you for the opportunity to comment.

Sincerely,

  
Mutt Standefer  
Director

cc: Sidney Wilkirson