

THE HISTORY

OF

CRESTON

NATIONAL FISH HATCHERY

1939 - 1995

INTRODUCTION

The History of Creston National Fish Hatchery

This history was compiled from annual reports of the Creston National Fish Hatchery by Wade Fredenberg, Fish Production Coordinator, during 1993-1995. Items in quotation marks are directly from the annual reports, with slight editing in a few cases for clarity or brevity.

The site for Creston National Fish Hatchery was selected in 1935 by officials of the National Park Service (NPS) after consultation with the various authorities on fish propagation, and extensive study and investigation of other possible alternative sites. In December of 1935 an option was taken on the Jessup Mill Property for the NPS by "interested friends of the agency". Legislation authorizing the purchase was initiated in Congress on Sept. 26, 1936 and on January 17, 1939 the deed was transferred from the Dakota and Great Northern Townsite Company (a subsidiary of the Great Northern Railway) to the National Park Service.

Over the course of over a half-century the hatchery program has gone through several "eras" of change. From 1940-1954 the primary program was Yellowstone cutthroat trout broodstock development and production, with early emphasis on the stocking of waters in Glacier National Park. The Yellowstone cutthroat gave way to rainbow trout production in 1955, a program still in existence today. For a brief period (1967-1971) the primary emphasis shifted to broodstock development and production of native westslope cutthroat trout, but the program was not highly successful and was short-lived. In 1972, the emphasis shifted back to rainbow trout, and from 1972-1992 the primary program was fish production for stocking on Montana's seven Indian Reservations. For a decade, between 1983 and 1992, the station was also involved in the maintenance of various broodstocks and the production of Eagle Lake rainbow trout eggs for export to other hatcheries. In 1993, another era was ushered in with the advent of mitigation for Hungry Horse Dam and the rearing of kokanee salmon for Flathead Lake.

In compiling this history I have attempted to glean a few of the more memorable "nuggets" from the pages of the annual reports, as well as provide the reader an insight to the evolving state of fisheries and fish hatchery management at the time. Any omissions or errors are my own.

1939

The original purchase from the Montana Idaho Investment Company consisted of 63.22 acres, which included the pond, spring source, and water rights, for \$15,172.60 (\$240/acre). A second 10.45 acre parcel downstream from the dam was purchased from Mr. Zimmerman for \$1,053 (\$100/acre); this became the site of the present hatchery building and raceways.

On July 31, 1939 the 76th Congress of the United States passed Public Law #243 making the Creston Hatchery property a part of Glacier National Park.

March 1, 1939 - Groundbreaking of "Glacier Park National Fish Hatchery" - T.S. Kibbe, Superintendent. Construction was begun with funds supplied by a \$64,000 WPA Grant for labor and a \$38,000 PWA (Public Works Allotment) Grant for materials, engineering, etc. Later, additional grants were added to complete the entire project.

During the summer of 1939 up to 100 men were employed. Extensive cleanup of the old sawmill site was required, including disposal of 2,800 cubic yards of sawdust and trash. An itemized list of fund expenditures (labor and materials) included:

Concrete - \$21,872	Riprap - \$2,000
Carpentry - \$18,396	Clearing - \$1,200
Fill - \$17,289	Grading - \$591
Pipelaying - \$16,193	Roofing - \$335
Excavation - \$15,291	Grassing - \$185
Demolition - \$3,025	Contingencies - \$1,225

1940

Initial construction included the present hatchery building, 22 concrete ponds (1,664 sq. ft.), the dam, and the superintendents house, all completed by 6/30/40. A portion of the water was taken directly to the hatchery from the spring source via a 4,600 foot long 14-inch diameter wood stave pipeline which ran the full length of the pond on pilings, spaced every ten feet. Estimated capacity for the new hatchery was 12 million eggs, 5-10 million fry, and 6 million fingerlings.

* Note - the CY1940 and FY1942 Reports contain many excellent b/w photos of the original facility.

The first fish eggs were received on the station on 2/2/40. During the first year of production 500,000 brook trout eggs from Leadville Colorado, 300,000 rainbow trout eggs from Post Cr. Fish Hatchery (private) in St. Ignatius, and 95,000 blackspotted trout eggs

(cutthroat) from Somers Hatchery were hatched and reared with good success. No plants were made.

Food for the fish consisted of:

2,500 lbs. beef liver @ 7¢/lb
1,379 lbs. beef heart @ 10¢/lb
54 lbs. beef blood @ 1¢/lb
142 lbs. salmon meal @ 2¢/lb
35 lbs. seal meal @ 2¢/lb

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1941

John Pelnar replaced T.S. Kibbe as Superintendent.

The station operated to "maximum" capacity rearing rainbow, brook, and blackspotted trout. Cultural highlights included rearing of 240,000 blackspotted fingerlings from Ashley Lake (presumably westslope cutthroat) which were stocked in Mill Pond to be held as brood. They also received 2 million blackspotted eggs from Yellowstone Lake (presumably Yellowstone Cutthroat). About 350,000 rainbow trout eggs were received from Rainbow Ranch (private) near Troy, and another 145,000 from Wyoming State Hatchery at Story. Libby Fish and Game Station sent 500,000 brook trout eggs. A display pond was stocked with 250 larger fish of mixed species.

The first egg collection on the station occurred in December, 1941 when 91,120 brook trout eggs were taken from 425 fish seined from the springs at the upper end of the pond. These turned out to be the only eggs ever collected from the station's brood pond.

Fish food for the year included 19,000 lbs of fresh horse meat, 6,000 lbs. of condemned canned salmon, and 5,000 lbs. of fresh "flukey" beef liver. Rearing costs were calculated at 7¢/1,000 fry and \$1.25-\$1.75/1,000 fingerlings. A few minor problems were encountered with parasites and gill disease, especially during the fall in the cutthroat ponds.

As per the enabling law that the hatchery was built under, all fish were stocked into waters of Glacier National Park (GNP). Two trucks hauled fish to GNP nearly every day all summer. The 1935 GMC 3 Ton truck cost 2.4¢/ mile to operate and the 1940 Chevrolet 3/4 Ton pickup a mere 1.5¢/ mile.

It was termed a "very successful season" with "8,961 lbs. of fish produced and nearly 3 million fish stocked into GNP waters. A second residence house was also built on the station. This completed all buildings, installations and landscaping as originally contemplated

for a total construction expense of \$177,993.04.

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1942

Blendon H. Cook succeeded John Pelnar as Superintendent in March, 1942. Summer help was furnished in 1941 & 1942 by the National Youth Administration (NYA). NYA was soon discontinued at the station due to a lack of workers, some going into the service and others into higher paying war service employment.

Salaries for the year were \$7,056.35 distributed as follows:

- Unskilled Labor - \$4/day
- Superintendent - \$2,000/year
- Foreman - \$1,800/year
- Jr. Fish Culturist - \$1,500/year
- Under Fish Culturist - \$1,260/year

The annual report stated: "Due to inadequate personnel and insufficient operating funds the station has never operated at more than about half its capacity. Total numbers of fish produced and distributed were only about one-third as many as for the previous year. GNP officials had stated a preference for larger fish in lesser numbers. Over 20% of the totals produced were reared to the 5-8" size, none were planted as fry. NPS has stated a desire that we concentrate on the stocking of blackspotted trout for the time being."

A total of 868,495 fish were produced and distributed. The annual report contained an interesting discussion of the merits of feeding beef liver, especially for small fish. Fresh horse meat was said to be in ample supply in the area. Attempts to take eggs from the wild brood pond (Mill Pond) have been largely unsuccessful.

The report concluded: "The writer wishes to herewith express the hope that whenever peace returns to the world, that adequate funds and personnel will be made available to enable this well constructed and excellently located fish production unit to operate at it's greatest maximum capacity. In the meantime, the station personnel will continue to put forth their full energies to keep the production at the highest possible level that is consistent with the available funds and personnel, in an effort to properly restock the waters of Glacier National Park, during this period of lighter fishing which is resulting from war time restrictions on travel and recreation."

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1943

During 1943 the station was fully staffed with three permanent personnel. The only species propagated was cutthroat trout and emphasis was placed on rearing larger fish. A total of 264,000 fingerlings were stocked, with 175,000 planted in the fall by GNP personnel in high lakes and headwaters of streams using pack trains.

Heavy losses of fingerlings held through the winter were incurred after Jan. 1 due to "depredations by hungry night-raiding ducks".

All cutthroat eggs were from Yellowstone Park, Wyoming (apparently Yellowstone Cutthroat) with 590,000 received in the eyed stage.

A description of the water supply mentions that the lake (24.5 surface acres) water supply varies in temperature from 38° F in the coldest winter to 56° F in the midst of the hottest summer, although the spring water piped in by the 14" wood stave pipeline is 44-46°F year-around. The flow volume remains constant year-around. The staff prefers to mix lake and spring water in the winter in the belief that the colder resulting temperature results in better fish performance and fewer problems with bacterial gill disease. "Well over 75% of the entire year's growth or poundage of fish is attained during the late spring, summer and early fall months when average water temperatures are nearly twelve degrees higher than in the winter months." A water quality analysis from June 5, 1943 is presented, showing a Ph of 5.8.

"Quite a saving was made to the station's allotment during the past year through the donation, by the Flathead National Forest and Glacier National Park, of condemned pack stock to be slaughtered and used as fish food. About 2,300 pounds of fresh meat was obtained from these sources."

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1944

Late in the year a bill passed by Congress (Public Law 479) and signed by President Roosevelt became law, transferring ownership of the hatchery from the National Park Service to the U.S. Fish and Wildlife Service, and eliminating the hatchery from the Park.

"Rather severe losses during the early spring months were encountered among the fingerling blackspotted trout which had been held over winter. The fish appeared to be weakened due to previous disease conditions in the lot and a dietary deficiency probably resulting from the feeding of too large proportions of overly long stored horse meat in the diet." The situation was corrected with fresh meat and therapeutic treatment.

A shipment of 100,000 Ashley Lake cutthroat eggs were received from Somers State Hatchery. On July 1st 498,000 blackspotted trout eggs were received from Yellowstone Park. Both lots suffered about 50% mortality from gill disease during early feeding stages. In Dec-ember, 101,000 brook trout eggs were received from Libby Station.

Jessup Mill Pond was opened to public fishing during the 1944 fishing season. This action was taken to try to reduce the numbers of brook and rainbow trout. Catches were light and mostly brook trout with "little evidence to indicate any very great survival of the hundreds of thousands of yearling blackspotted trout liberated into the reservoir during previous years."

A total of 381,000 fish were produced and distributed in Glacier National Park, of which 207,000 were 1.5 - 2.0 inches, 93,000 were 3-4 inches, and 81,000 were 5-7 inches.

1945

As a result of the law passed in 1944 the fish produced at Creston NFH will go to Glacier Park as first priority but excess may be planted in the South Fork of the Flathead and Swan drainages. Nearly half of the 7,285 pounds of fish produced in 1945 went to those other waters. The permanent staff increased to four men. Walter C. Buckmaster retired after 37 years in the Service and was replaced by Edward B. Horn. Total salaries and compensation for permanent personnel was \$6,697.54. It was estimated that over 1,500 visitors came to the hatchery during the year.

In December a shipment of 34,000 eyed "mackinaw" trout (lake trout) eggs were received. All other fish reared were cutthroat and brook trout. Yellowstone cutthroat were stocked outside the Park. Disease problems were minimal due to improved diet (feeding more fresh liver in the winter) and better prophylactic treatment using copper sulphate baths.

"Complying with the recommendations of Aquatic Biologist Ancil D. Holloway, only fish of the Ashley Lake, Montana strain were distributed to GNP waters during the year, all of which were individually marked by having certain fins removed." "It is the writer's understanding that further studies of Glacier Park waters by Mr. Holloway and/or other biologists trained for this important work will be undertaken in the near future, in order that our stocking policies can be kept up to date and assure maximum results."

1946

Superintendent Blendon Cook was transferred to Cortland, New York

for a year of training and temporarily replaced by Loyd Justus. Several other personnel changes occurred. Most of the fish distribution was done in the spring and early summer with four-inch overwintered blackspotted trout. A sample of fin-clipped fish held at the hatchery found 42% of the dorsal finclips had regenerated but none of the adipose clips grew back.

The Mackinaw trout were planted in Saint Mary's Lake save for 2,000 that were stocked into Fort Peck Reservoir. Brook trout were stocked into the lower Swan River and Swan Lake and blackspotted trout into GNP waters. The winter of 1946-1947 was exceptionally harsh.

1947

"The Fish and Wildlife Service has entered into a cooperative agreement with the Montana State Fish and Game Department for jointly financed operation of the Creston Station. This agreement became effective October 15, 1947, and under it the State agrees to furnish the full time services of two employees and \$5,000 of State funds for expanding the production operations during each year that the agreement is mutually satisfactory and remains in effect."

Blendon Cook returned to the station as Superintendent. Production was only about 3/4 of the previous two years level due to problems with the past severe winter causing colder water temperatures, increased predation by ducks, and heavy losses to the parasite *Octomitus*.

100,000 eyed mackinaw (*Cristivomer namaycush*) eggs were received in November from Manitoba. For the first time the hatchery planted some of the fish themselves with distribution tanks borrowed from Montana Fish and Game and Glacier Park.

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1948

Production reached a new record with 776,782 fish weighing 9,538 pounds produced. About 40% of the total pounds were planted into Glacier Park with most of the rest going into the North Fork of the Flathead and the Swan.

"The blackspotted trout is the favored species by sportsmen and the fishing public in the area served from the Creston Station, and that variety is more in demand for stocking of public recreational waters than are trout of all other varieties combined. Many, and perhaps most fish culturists with experience in propagating this variety, consider the blackspotted trout to be much less adaptable to artificial propagation and rearing under domestic conditions than

any other variety." In 1948 the Station had their best success to date, with 86.5% of the eyed cutthroat eggs surviving to fingerling size. Overall, 457,000 cutthroat, 83,000 lake trout, 91,000 brook trout and 164,000 rainbow trout were stocked out.

Feed conversion efficiency improved dramatically with one pound of fish produced for every five pounds of feed, compared to 1:7 or 1:8 in the past. The gain was attributed to "a better knowledge of the nutrition requirements of trout and improved methods of feeding" as well as "Proportionately much larger amounts of such higher quality foods as beef, horse, and hog livers and the discontinuance of large quantities of such low grade foods as beef tripe and lungs." Food costs soared to a new high of 8.25 cents per pound.

"In their fish planting report for 1948, the Glacier Park officials have stated their opinion that further studies should be made as soon as possible of the Glacier Park fishing waters by an aquatic biologist to bring the fish stocking and management program for Glacier Park waters up to date. They have also stated that they feel that consideration should be given to the stocking with other species in waters where the native species have shown a decline or where present stocking policies have not proven entirely effective or satisfactory. They had specifically requested that consideration be given to the stocking of waters west of the Continental Divide in Glacier Park with rainbow and brook trout, and had further recommended that they be permitted to accept larger sizes of fish, even fish of legal and adult sizes in some cases."

1949

The State/Federal coop agreement was modified in mid-year, to continue financial assistance but eliminate the assistance of two men. Even at that, production increased to 1,716,212 fish of four species (cutthroat, brook, rainbow, and lake trout) and weighing 17,001 lbs. For the first time, 16,000 fish were stocked on the Rocky Boy Indian Reservation for the U.S. Indian Service.

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1950

Dolly Varden (bull trout) were propagated for the first time at the station. "To our knowledge this species has never been propagated on a production basis at any fish cultural station in the nation."

A total of 64,658 3-inch fish were reared from 102,720 eyed eggs, taken from wild stock by personnel at the Libby State Hatchery. 59,410 three-inch fish weighing 578 lbs. were planted in Flathead Lake and its tributaries. The other 5,248 were held over for planting as yearlings in 1952 or for possible brood. Based on observations "this species is not difficult to rear and their growth is rapid."

In December, another lot of 57,120 bull trout eggs were received from Libby.

The Hatchery also reared and distributed 2.0 million cutthroat (12,625 lbs), 89,937 rainbow trout (3,006 lbs), 88,782 brook trout (3,382 lbs), and 34,516 Mackinaw (623 lbs). Seventeen live horses were purchased for \$143.00 and slaughtered and deboned by hatchery personnel for fish food.

The need for increased facilities was cited as "The Federal Government is now completing Hungry Horse Dam on the South Fork of the Flathead River and other large impoundments are contemplated which will require the planting of large numbers of trout to maintain their fisheries."

The 1940 Chevrolet 3/4 ton pickup broke down after 79,000 miles and 10 years of hard use and became unrepairable. Operating cost for the life of the truck was 2.5 cents per mile. It was replaced by a brand new truck of the same make and model and a 1950 Dodge two-ton fish distribution truck, the first belonging to the station.

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1951

The usual production of cutthroat, brook, rainbow, and lake trout continued with 730,000 fish weighing 16,200 pounds distributed. Another 19,768 bull trout (1,321 lbs) were stocked in three North Fork streams, the Whitefish River, and Flathead Lake. 1951 bull trout egg taking efforts were largely unsuccessful. A total of 528,000 kokanee salmon eggs taken from Flathead Lake were eyed up at the station and shipped to the Nevada State Fisheries Commission. Little disease was encountered this year.

"Of particular benefit to us was the State appointment of Mr. Frank Stefanich as area biologist, thereby according us a convenient source of information concerning stream conditions to guide us in our plantings as well as to report on planting results."

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1952

Blackspotted trout production was off due to fewer eggs received from Yellowstone Park and high mortality in some of the yearling stock. 1.8 million cutthroat (10,045 lbs.) were produced. For the first time eggs were taken on station from captive brood, with 250,000 eggs taken from 962 four-year old blackspotted trout.

Brook trout production was higher than usual with 100,000 high quality

eggs received from Berlin, New Hampshire. 48,000 brook trout (2,200 lbs.) were distributed along with 57,000 rainbow (2,100 lbs), 28,000 lake trout (550 lbs) and 2,278 bull trout (34 lbs.). 510,000 kokanee eggs were again incubated and shipped to Nevada.

1953

The primary distribution zone of the hatchery continued to expand with numerous Flathead Valley Lakes officially added to the program.

These included the "pot hole" lakes lying between Creston and Bigfork which "are showing some excellent results and are providing some exceptionally good fishing". 607,000 fish weighing 22,000 pounds were distributed. "Rainbow trout are becoming more in demand in this area and in the future this species will rank about equal with cutthroat trout as produced at this station". Lake trout production was discontinued after this year.

Station personnel slaughtered and deboned 47 horses and 16 cows during the year and the National Bison Range donated 857 pounds of Deer and Buffalo "plucks" (lungs, spleen, and tripe).

New steel pipelines replaced the old wooden supply lines from the lake and springs.

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1954

Stocking requirements in Glacier Park were "reduced by 25% in keeping with the present Park Service policy of refraining as much as possible from artificial methods in maintaining fish and game populations in Park areas." Only 304,000 cutthroat, 264,000 rainbow, and 50,000 brook trout were planted (18,921 lbs). More fish were held over the winter than ever before. The domestic rainbow of the "Winthrop" strain performed very well.

Station personnel did much of their own vehicle maintenance and equipment repairs. "This is mentioned to point out that savings to the Government are being effected by accomplishing \$4.00 per hour work with \$1.45 per hour employees."

"Ninety-nine cutthroat were taken from Hungry Horse Reservoir tributaries during the year and eggs taken from these fish produced about 9,000 fingerlings. Both the parent fish and the fingerlings are being held for brood stock. It is hoped that these fish from local waters will prove to be better adapted to the area and consequently will give better results."

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1955

The name of the hatchery was changed from "The Glacier National Park Fish Hatchery" to "Creston, Montana Fish Cultural Station".

Under present policy all stocking, with minor exceptions, is in lakes.

Stocking cutthroat trout in streams for the past five years has not shown the desired results. Glacier Park requirements now total only 15% of the Station production. Yellowstone cutthroat eggs are no longer available and "we have thus far been unable to produce good quality eggs from our station brood stock". Brook trout demand has declined and rainbow trout demand has increased. Labor costs per pound of fish produced were summarized: cutthroat fingerlings 68¢ per lb, brook trout fingerlings 28¢ per lb, rainbow trout fingerlings 13¢ per lb.

The domestic cutthroat brood (Yellowstone) produced 1.2 million eggs but only 60% eyed up and only 48% hatched. The Hungry Horse Reservoir brood (Westslope) was a bust as there were no ripe males to fertilize the 12 ripe females. "We are now quite certain that the mere proper application of the best principles of fish culture does not and will not produce results with cutthroat trout in due proportion to those results proven to be possible with other species. This is not stated as an excuse for poor production nor as an attitude of defeat but rather to point out the need for help. We feel sure that cutthroat trout have special requirements from the water in which they live and that they probably have peculiar disease conditions which have not yet been fully explored and which we at this level are not prepared to cope with except with rather "shotgun" methods, which methods have proven unsuccessful to date."

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1956

Only 5% of the production in 1956 went to GNP. "We continue to experience rather disheartening losses of eggs, fry, and fingerling fish of this variety (cutthroat) as compared with other varieties.

With the growing demand for rainbow trout and our high degree of success in the rearing of this variety, particularly from the Winthrop Washington strain of eggs, Rainbow production was again increased to the point where this variety now constitutes well over 75% of our total poundage production."

"The usual number of general public visitors from all over the nation, to a total of approximately 5,000, were welcomed to the station. Service films were shown by station personnel to local school and grange groups, and organized school groups and classes, as well as cub and boy scouts visited the station and were furnished information regarding the stations activities."

The domestic (Yellowstone) cutthroat brood stock produced 1.4 million eggs, but again the westslope brood failed to produce any eggs and it was recommended that future egg takes of this strain be from captured wild spawners.

36,214 pounds of trout were distributed during the year (1.2 million fish). This required 79 trips covering 4,007 miles at a per-trip cost of \$12.99 and a distribution cost of 3 cents per lb. Fish production for the year was 47,980 lbs and 4.8 man-years of labor were involved for a production of 10,050 lbs of fish per man year of labor.

Fish food purchased for the year was 16,859 lbs of frozen beef liver, 12,253 lbs of frozen pork liver, 10,401 lbs of frozen beef and pork spleen, 24,841 lbs of fresh and frozen beef lungs, 26,850 lbs of frozen salmon viscera (guts), 930 lbs of beef tripe, 20,000 lbs of distillers corn solubles, 11,770 lbs of fish meal (salmon and herring), 20,200 lbs of cottonseed meal, 20,200 lbs of wheat middlings, 2,050 lbs of brewers yeast, 410 lbs of cod liver oil, and 2,000 lbs of salt. This totalled 141,914 lbs at a cost of \$9,317.66 (6.5 cents per lb) for a balanced diet. They also received 160 lbs of "Rangens pellets" and 200 lbs of "Canadian H. Meal", continuing the experimental use of commercially-pelleted feed which was tried for the first time in 1955.

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1957

Total production for the year was 72,127 lbs of fish with 81% being rainbow, 17% cutthroat, and 2% brook trout. The cutthroat program took a "tremendous step in the right direction" with the improved survival of fish due to the use of 60,000 lbs of the new Rangens Pellets for food. A bank of six new 8 ft. by 90 ft. raceways were added at the west end of the hatchery, costing \$15,338.71 and a domestic water well was drilled. The staff, in 1957 under Blendon H. Cook as superintendent, included Lyle Clare, Romaine Douglas, Fred Howard, and Darrell Stout. Total salary paid to the staff was \$15,247.08, which included \$69.06 FICA and Insurance.

Late in 1957, due to many leaky joints in the spring water pipeline, the line was cut near the lower end and the hatchery began drawing all its water from the lake.

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1958

"Two larger streams, the Little Bitterroot River, and the Swan River have been added to our stocking plan as rainbow habitat for the past two years with gratifying results." Pelleted fish food comprised two-thirds of the diet used. "In the opinion of the writer our cutthroat program still leaves much to be desired as compared with results being obtained through our rainbow trout production." A total of 67,806 lbs of fish were distributed; 83% rainbow, 17% cutthroat, and only 164 lbs were brook trout "for which variety there is a decreasing demand in the area which we are serving."

A new building was built for housing station trucks and equipment, a "new large capacity modern fish distribution tank with dual direct oxygen and recirculated water aeration system" was purchased, and a well was drilled to a depth of 300 feet which is expected to produce 80 gpm of artesian water to the main hatchery building. "The primary object of operating the station is for fish cultural production, and in the mind of the public which we must serve the funds spent for modernizing and expanding this station can only be justified if our production of fish which will contribute to a higher degree of fisherman success is made apparent through the expansion we have worked towards. So, please see to it that we do get adequate funds allotted for us to do the bigger and better job of actually increasing the sport fishing resource in the area to be served, which the station personnel are more than willing to undertake if funds are made available to us for that purpose."

"It is false economy to hold fish on a straight meat or even a meat-meal diet any longer than is found absolutely necessary during the early feeding stages. The sooner each lot can be trained to feed on the straight fortified pellet diet, the faster the growth, quality, and vitality."

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1959

Brook trout rearing at Creston was eliminated in 1959, although some brook trout were trucked in to the station from Bozeman and redistributed in State waters. Rearing and stocking of 5,000 golden trout is also cited but not discussed. The Park Service, for the first time stocked rainbow trout into three lakes in the Many Glacier area. The Yellowstone cutthroat brood has now been domesticated to the fourth generation. "We do continue to receive slight criticism and some outspoken questioning from some sources including such cooperating agencies as the State Fish and Game Dept. and personnel of Glacier National Park as to the efficacy or value of the overall result of fisheries resource which is being obtained in this area west of the continental divide with a strain of the

cutthroat trout (Yellowstone Park) which originated and seems to do best in a lake environment in waters east of the continental divide." The efforts by State personnel to develop a westslope cutthroat brood are discussed. "At this stage it is the writers opinion that it is mere conjecture that any other strain of cutthroat trout can actually do a better job in this locality." "The rainbow trout of course do better and are less costly to rear and less subject to the various diseases..."

Following routine spawn taking rather severe losses developed among both the mature cutthroat brood and the two-year-old brood reserves.

Symptoms were sluggishness, abdomen distention, occasional popeye, pale livers and gills, and with the abdominal cavity generally containing a reddish fluid. Losses persisted into midwinter. For the first time all lots of fish were maintained on pelleted feed, "the results being quite satisfactory".

The cooperative funding arrangement with the State of Montana contributing at least \$5,000 per year every year since 1947, was terminated by mutual consent effective April 30, 1960. "Close and hearty cooperation with Montana State will continue."

The new artesian well was piped into the hatching building and produced 300 - 500 gpm, varying seasonally from a midsummer and early fall high to a midwinter low. This was predicted to solve one of "our worst operational difficulties with the slime, sediment and excess gases with which we have had to contend in the former water supplies". In addition, two new residences were nearly completed with financing from a special modernization allotment.

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1960

The station instituted a "safety" program for its employees. Sixteen new concrete rearing tanks were built in the hatchery building at a cost of \$3,840. The two new residences were completed at a total cost of \$41,800. A new food preparation building was constructed for \$35,386.

"The major long range program of fish cultural operations at the Creston National Fish Hatchery is the development of a domesticated pure strain of native Yellowstone Cutthroat Trout. The program started in 1948. The response to rearing, feeding and handling shows that these fish are losing the wild hereditary characteristics and will become fully domesticated in a few years." "The Yellowstone Cutthroat, west slope Cutthroat, and the Grayling are slowly approaching the status of the Bison and the Trumpeter Swan."

"Rainbow trout eggs are also received from Lake Ronan wild spring run stock. The State of Montana wishes to use these fish for the management of this lake as they have proved adaptable to this lake and have provided fishing for many years. The State maintains a spawning station at Lake Ronan and the resulting eggs are used in Montana for lake management."

A total of 76,727 pounds of fish were produced. The completely-pelleted diet cost 11.8 cents per pound for the 170,500 lbs of food that were fed; a total food cost of \$21,645.70. Labor costs for the year were \$24,598.38 for four permanent and one temporary employee. Overall cost of the station was \$0.91 per lb for fish produced; with 47 cents in production cost, 20 cents in labor costs, and 24 cents in fish food costs.

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1961

"The year 1961 was a construction year at the Creston National Fish Hatchery. Fish propagation was hampered by truck movements, muddy water, and shut off periods due to the installation of the new water supply intake and line to the hatchery." Twenty-four new raceways were added on the upper end of the hatchery. Total cost of the renovation of the water line and new raceways was \$95,914.75

"The station, located adjacent to Glacier National Park, is a tourist attraction and a point of interest for the travelling public of the United States and Canadian Provinces. During the year approximately 8,000 visitors were at the station and included in this group were many school classes, church groups, College and University field trips and 4H groups."

"The Yellowstone strain of Cutthroat trout brood stock is infected with Hepatoma and the Regional Pathologists and management personnel have done all they can to determine the cause and recommend treatment."

*The 1961 report includes several black and white snapshots of the reconstruction work.

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1962

The 24 new raceways made possible expanded production and a record 88,175 lbs. of fish were raised at Creston National Fish Hatchery in 1962, including 37,000 lbs. of the "Hot Creek" strain of rainbow trout from Bishop, California. Nearly 87,000 of these 7-9 inch fish (24,000 lbs.) were transferred to the Idaho Fish and Game for

stocking. Rainbow trout production made up 95% of the station output during the year, with the other 5% being cutthroat trout.

"Because of pressure from the Fisheries Management personnel of the Montana State F. & G. Dept., the fact that our stock had shown symptoms of being infected with hepatoma in recent years, and other adverse factors, the spawning season of 1962 was made the terminal one for the rearing and spawning of this Yellowstone strain of Cutthroat trout at Creston National Fish Hatchery." All the brood stock were distributed to local waters soon after the spawning season. The egg take from these fish was 1.1 million, of which 74% survived to the eyed stage. All the eyed eggs were shipped out; to six separate hatcheries in five states.

It was established that the west slope cutthroat trout stock was infected with I.P.N. virus, which resulted in a heavy run of losses during the early feeding stage. Eyed west slope cutthroat eggs came from Libby and Somers State Fish Hatcheries. "The Montana State Fish and Game Dept. is of course the agency most interested in the production and distribution of fish from Creston N.F.H., and our relation with that agency has continued to be most cordial over a long period of years."

A new residence was constructed (the Southernmost of the three buildings on Creston Hatchery Road) at a cost of \$19,055. It was built to house the new Hatchery Biologist, Richard Bigej. "He is expected to aid the station with nutritional and disease control problems..."

The Hatchery acquired a new Studebaker station wagon at a cost of \$1,734.49.

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1963

Production continued to increase with 114,474 lbs. of fish produced in 1963 (nearly 1.5 million fish). Of this total 85% were rainbow, 12% westslope cutthroat, and 3% brook trout. They also raised 14,631 lake trout. The westslope cutthroat population continued to be plagued by IPN virus as well as kidney disease.

"During the year an automatically operated public address system has been conveniently installed to enhance the continuing guided tours given by assigned station staff members for the larger groups to help us get across to the public, appropriate information relative to the phase of conservation work which our particular unit is engaged in for the benefit of the public."

All the buildings were resided with pink coral asbestos siding, apparently "in" at the time. The lawns were fertilized with 2,648 lbs of old fish food that was condemned. There were four permanent personnel, including the manager Blendon Cook, the assistant Walt Nielsen, and fish culturists Lyle Clare and Darrell Stout. Hatchery biologist Richard Bigej operated from a separate account.

"On Sept. 13, 1963 the Branch of Engineering provided us with information which indicated the total flow of Mill Creek to be 42.7 cubic feet per second, based on measurements of velocities and water depths." (from 1965 Annual Report).

After 25 years of operation the station budget had risen to \$65,000 per year. Wages for the four permanent employees and a summer assistant amounted to \$28,000 total, fish food cost \$19,500, and distribution cost \$3,000. The rest (\$14,500) was spent on operation and maintenance. They fed nearly 200,000 lbs. of pelleted fish food at 9.8¢/lb, for a net food cost of 17¢/lb of fish produced. A total of 76 distribution trips were made covering 12,648 miles. Overall 60% of the total station budget was allocated to fish production for a final production cost of 34¢ per lb of fish produced.

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POSTSCRIPT

"The First Quarter-Century"

This concluded an important and interesting era, the first quarter-century at Creston National Fish Hatchery. Blendon Cook retired as hatchery manager Sept. 3, 1964 after 22 and one-half years at the helm. His somewhat wordy, but meticulous style of writing provides a lot of insight into the general "feeling and flavor" of hatchery work in this era, which saw among other developments the switch from raw meat to pelleted food, the evolution of the "science" of fishery management, and the addition of staff biologists.

Glacier National Park was the sole reason for the existence of Creston Hatchery in 1939, but by 1963 the Park had come to rely heavily on natural ecosystem management and the hatchery program had shifted to priorities in other state and federally-managed waters.

The early pioneers of the hatchery developed many of the techniques that are still in use today. Surprisingly, many of the problems that they encountered, in particular with disease and the rearing of wild strain fish, are the same problems that hatchery managers deal with today. In many ways this could be called the "black and

white" era of hatchery management. In 1964 the annual report from Creston included the first color photos. This was somewhat symbolic of the increasingly diverse agenda of Creston National Fish Hatchery.

The program at Creston was launched into the next quarter-century with a first-rate facility and a sound record of fish culture progress thanks to the uncommon dedication of people like Blendon "Cookie" Cook and his hard-working staff.

1964

The 1964 annual report included several color photos of the facility, ushering in the second quarter-century at the Creston National Fish Hatchery. Production levels continued to increase to new highs with 116,444 lbs. of fish produced, of which 90% was rainbow trout, 8% westslope cutthroat trout, and the rest brook trout and lake trout.

191,400 pounds of pelleted food was fed at a cost of 9.5¢ per pound.

A new 1/2 ton Dodge pickup was purchased for \$1,644.00. The big flood of 1964 was mentioned in passing but no damage occurred at the hatchery.

Staff in 1964 consisted of Blendon H. Cook, hatchery manager; Walter E. Nielsen, assistant manager; Lyle H. Clare, hatchery leadman; Darrell Stout, hatcheryman; Richard G. Bigej, resident biologist; and James Bellmore, hatcheryman helper (temporary). On September 3, 1964 Blendon Cook retired and he was replaced by Glen L. Hammer on November 1, 1964.

The hatchery underwent a complete disinfection and sanitation program to eliminate the I.P.N. virus. The reservoir was lowered seven feet and treated with 55 gallons of Chem Fish Special (rotenone) with a followup treatment of 1,400 pounds of calcium hypochlorite for general sanitation. The entire rearing facility was also disinfected.

"The Creston station is now trying to establish an I.P.N. (Infectious Pancreatic Necrosis) resistant strain of (Westslope Cutthroat) broodstock which the Dept. of Sport Fisheries and the Montana State Fish and Game desire." Spawning was limited to 486 pairs which were aseptically spawned and individually incubated between March 30 and April 8, 1964. Take was 251,750 green eggs (518/female) of which 40% survived to eyed stage, 35% to hatch, and only 30% to swimup. The progeny from 64 of these paired matings were selected based on egg survival for future broodstock.

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1965

"Officials visiting the station this year included Messrs. Findlay, Wolf, Pillow, Allen, Rasmussen, Jacoby, Pratt, and Messier of the Bureau of Sport Fisheries and Wildlife; and Messrs. Robbins, Brown, Whitney, Holton, Campbell, McBride, Cox, Hanzel, and Domrose of the Montana Fish and Game Department." "We have endeavored to improve the appearance of the station in accordance with the President's Program on Natural Beauty." The annual report was submitted by Glen Hammer.

There was no evidence of I.P.N. on the station this year despite

comprehensive testing, however the cutthroat broodstock were suffering from a serious outbreak of Bacterial Kidney Disease (B.K.D.). Cutthroat brood produced 463,870 eggs from 324 females with 75% eye-up, 63% hatch, and 43% survival to swim-up. The brood selection process continued, despite a notation that the "cutthroat broodstock held at this station are the progeny of only two pair of fish." Production for the year was 60,886 pounds of which 98% was rainbow trout.

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1966

"The production of fish at this station during the past year was near maximum. All requests for fish from the various agencies were fulfilled. It is doubtful, however, that this station will be able to continue to meet the requirements of the fishery management programs of the cooperating agencies in the future due to the anticipated increases in requirements of both their programs and that of the Bureau. Some expansion and improvement of our facilities are imperative in order to meet these increases."

"Tentative plans are to phase out the rainbow production at this station and by fiscal year 1968 be entirely engaged in the production of cutthroat. Such a program will be in line with fishery management desires, but will no doubt result in at least a temporary decrease in our production."

Fish production in 1966 was 98,473 pounds of which 88% was rainbow trout and 12% cutthroat, with only 582 pounds of brook trout reared.

Overall cost per pound of fish reared, including maintenance, administration, recreation, and conservation education as well as production costs was 77¢ per pound.

"All laboratory activities were discontinued during the final two weeks of the fiscal year while preparations were made to transfer the lab to the Bozeman National Fish Hatchery." "The hatchery manager would like to add to this in saying that Mr. Bigej's services while stationed at the Creston National Fish Hatchery were of great value and his cooperation and assistance was greatly appreciated."

Station personnel continued to conduct safety meetings each month and fire drills quarterly but the string of 3,011 accident-free days came to an end when an employee slipped and fell, suffering a painful but minor injury requiring two days off.

"Additional automatic fish feeders were purchased at a cost of \$1,400 which includes installation. The hatchery is now completely equipped with these devices."

During the year presentations were made by hatchery personnel to 31 groups (800 people), and approximately 4,500 visitors stopped at the station. "We feel that we could serve the public better by providing adequate educational material and displays which would completely portray our purposes and accomplishments. Our visitors are interested in paying us a short visit enroute to areas such as Glacier National Park. During their visit with us they are very interested in learning what we are doing and how we do it. We intend to make some improvements with this in mind."

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1967

"Beginning in fiscal year 1968 only westslope cutthroat trout will be produced. This is an endangered species and it will be used for stocking waters within Glacier National Park and state managed waters of the Flathead River drainage. The Ennis National Hatchery will assume our rainbow trout program in the future."

The eggs from the 3-year old cutthroat brood were of fair quality but only 50% of the fish matured. Reasons given were a bout with "blue slime" disease, and possibly photoperiod changes resulting from the addition of a street light near the holding area. Hammer stated "We are probably groping in the dark in more ways than one now that the use of the light has been discontinued." The hatchery continued to experiment with dry diets, having difficulty rearing cutthroat fry on them without adding beef liver. 9,000 yearling cutthroat from wild Hungry Horse Reservoir stock were acquired to be used as an experimental brood source.

\$219,000 was appropriated for the construction of 18 new raceways, a water control structure, and related items. A contract was awarded and construction began July 10, 1976.

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1968

Production was reduced to 24,393 pounds for the year due to construction, but 93% of that was cutthroat. 346,176 finclipped cutthroat weighing 16,305 pounds were stocked in Lake McDonald, Bowman, and Kintla Lakes in Glacier Park. Problems continued with poor egg quality of the broodstock and tests found some females to be totally infertile which "led us to believe that our egg quality problem is genetical." Silver Cup Salmon Mash, one of seven diets tested in the past three years, seemed to solve the dietary problem with cutthroat fry.

Overall, 2,420 female cutthroat were spawned, producing 2.2 million eggs (911 per fish), of which 77% eyed up, 64% hatched, and 60% survived to swim-up.

E.F. Matelich Construction removed fourteen old Foster-Lucas ponds and replaced them with 18 new raceways. The project was completed in April, 1968. This completed the configuration of 48 raceways still in use in 1993.

"Precipitation this year was below normal resulting in a reduced flow of water from our springs."

1969

Total production for the year was 54,284 pounds of westslope cutthroat. Distributed were 387,395 cutthroat to Glacier Park, 48,996 cutthroat to Indian reservations, and 2,921 cutthroat to state-managed waters. The nagging problem in cutthroat production was poor egg quality. "We have conducted numerous tests during the past six years and have eliminated several possible causes, but egg quality has not improved. The tests conducted in the past lead us to believe that our egg quality problem may be due to the presence of herbicides or pesticides in the water supply and fish."

A crew of five local ladies finclipped over 550,000 of the cutthroat for Glacier Park and State management programs.

"An incident did occur this spring which may be worth mentioning and which could have an influence on our program in the future. The Montana Fish and Game Department, disregarding the objections of our Bureau, the National Park Service, and various sportsmen's groups, introduced Coho salmon into Flathead Lake. This action prompted the superintendent of Glacier Park to make a public statement to the effect that this may result in the termination of our cutthroat stocking program in the park, since the coho will be free to migrate into park waters."

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1970

Production of cutthroat trout for the year was near maximum at 61,935 pounds. All Federal stocking programs were completed but fish were not available to completely meet the requirements of the Montana Fish and Game Department program. This year 383,588 westslope cutthroat were stocked in Glacier Park waters and 280,000 in other waters.

A total of 62 distribution trips were made covering 10,901 miles and resulting in a delivery cost of 7¢ per pound for fish planted.

118,395 pounds of fish food was fed at a cost of \$15,173.76 (13¢ per pound). Food cost equated to 25¢ per pound of fish produced.

The total budget for the facility was \$82,000, with \$55,000 for salaries of the five permanent employees and temporaries and \$27,000 in O&M costs.

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1971

"The production of westslope cutthroat trout would have been near maximum this year had it not been for an epizootic of furunculosis.

All fish had to be destroyed and the station facilities were then disinfected." This short epitaph describes a bad episode in the history of the Creston National Fish Hatchery. Furunculosis is a bacterial disease that is caused by contact with infected fish. The epizootic began in July of 1970 and despite several treatments with the antibiotic Terramycin the losses were enormous. Finally, in February 1971 the fish remaining on the station were buried in limed pits and the hatchery was shut down. In March, the water-supply pond was treated with Fintrol (Antimycin A) to remove the fish (brook trout) population that was suspected to be a source of infection.

The pond, station facilities, and equipment were all disinfected with chlorine.

In April, rainbow trout fingerlings were transferred back into Creston Hatchery from the Ennis, Montana facility and in June westslope cutthroat eggs were received from the Arlee State Hatchery.

"Glacier National Park terminated our stocking program this year.

According to information that we have received, their biologist determined that our fish were not contributing to the fishery."

During 1971, the hatchery staff consisted of Manager Glen Hammer and Assistant Manager Walter Nielsen. The other three permanent employees were Fish Hatcheryman William Olson, and Hatcherymen Darrell Stout and Lyle Clare who were reclassified as Biological Technicians.

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1972

The hatchery continued to rebound from the disease outbreak of the previous year. All fish were healthy and no further complications were reported. A total of 450,496 fish were distributed during the year, weighing 85,813 pounds. Rainbow trout made up over 70% of

the numbers and nearly 99% of the poundage. The rest of the plants consisted of 85,670 westslope cutthroat fry and 40,000 brook trout fry. In April Walter Nielsen retired and he was replaced by the new Assistant Manager in June, Larry Visscher.

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1973

The hatchery was back to full production, distributing about 700,000 fish weighing 128,000 pounds. Again, the vast majority were rainbow trout stocked on Montana Indian Reservations. During this year about 175,000 pounds of food were fed. The number of visitors to the hatchery was estimated at 6,624, including 30 school groups.

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1974

"Cutthroat trout eggs were taken for the first time since 1970 and they were of very poor quality. Investigations are planned to determine the possible effects that pesticides may have on egg quality. Broodstock diet tests are also planned in cooperation with the Bozeman Fish Cultural Development Center and the Spearfish Diet Testing Development Center. The production of rainbow trout presents no problem."

The 820 female westslope cutthroat spawned in 1974 weighed about 0.4 lbs each and produced 458,567 eggs (559 per fish). Only 26% of the green eggs survived to the eyed stage, although nearly all of those hatched successfully and over 90% of the hatchlings went on feed.

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1975

The weather in Montana this year was categorized as "far from normal". Spring was late with snow and rain through May and severe flooding occurred during June. Cutthroat spawning continued in May and June, with better success than the previous year. The improvement was attributed to diet changes and spawning technique. Four-year-old brood fish averaged nearly a pound and produced 1,145 eggs per female, whereas the three-year-olds produced 466 eggs each. Just over 50% of the eggs eyed up and hatched.

"We wished to determine if the poor egg quality in 1974 was due to abnormally high levels of pesticides in the cutthroat broodstock. We sent five pairs of three-year-old broodstock to the Fish-Pesticide Research Laboratory in Columbia, Missouri for analysis. The results showed that neither the compounds nor their

concentrations were of an unusual nature. This would seem to eliminate the idea that pesticides were the reason for the poor egg quality in 1974."

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1976

Goals of the hatchery as listed in the 1976 annual report were: "...the production of fish for stocking waters of the Blackfeet, Flathead and Rocky Boy Indian Reservations. In addition, we are making a concerted effort to produce westslope cutthroat trout for both Federal and State fishery management programs in the area." A total of 286,000 westslope cutthroat were stocked in State managed waters.

"The testing of two more cutthroat broodstock diets failed to produce good quality westslope cutthroat eggs. Good quality eggs are being produced from broodstock being held in the creek downstream from the hatchery with no artificial feeding. We are in contact with several nutritionists, but no one has been able to give us the answer we have been seeking for years." "We feel that the continued effort to produce good quality westslope cutthroat eggs and to improve the rearing of this species is a worthwhile project and should be continued."

The production cost per pound of fish produced in 1976 for the reached \$1.00 per pound. The annual budget for the station was \$156,780, of which \$88,565 was production cost (including 126,000 pounds of feed at 15 cents per pound; total \$19,465), and the remaining \$68,215 was applied toward operations and maintenance. Salaries were \$110,800 for the five permanent employees.

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1977

"Fish distributed to National Forest Service waters and Indian programs accounts for 93% of the hatchery's production. Blackfeet, Flathead, and Rocky Boy Reservations received 85% of the total production. The station filled all Indian program commitments, distributing 379,417 trout weighing 71,228 pounds."

"Experimental work with the once endangered westslope cutthroat trout species continues. This year broodstock produced enough eggs that 200,000 surplus fish were distributed into suitable Montana waters. The State Fish and Game Department tagged and released an additional 3,100 cutthroat into Mill Creek to study fish migrants. Fish marked with an orange fluorescent dye were used for the Pishkin Reservoir study."

"Station personnel replaced roofing on the feed room and installed 432 feet of raceway strut, to prevent slipping while working on top of raceway walls. Grip strut is an excellent safety feature."

Hatchery trucks made 42 planting trips in 1977, stocking 78,000 pounds of fish at a distribution cost of 13 cents per pound. Walter Freshman replace Larry Visscher as assistant hatchery manager.

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1978

The cutthroat trout brood program achieved its best success to date, collecting 400,000 eggs and achieving a 64% rate of eyeup. Stocking in 1978 included 754,200 fish.

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1979

There is no an annual report for 1979 in the files. This year marked the last of Glen Hammer's 15 years as hatchery manager at Creston. He retired early in 1980. During his tenure the hatchery maintained a stocking program based largely on production of domestic strains of rainbow trout, the bulk of which went to Montana Indian Reservations. The hatchery also carried on an ongoing effort to produce westslope cutthroat trout, a native species that was desired for stocking west of the continental divide in Montana. Despite some gains, the westslope program was never highly successful. Lyle Clair, a longtime hatchery worker passed away in September, 1979.

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1980

On March 8, 1980 the Northwest Montana Fishery Center, under direction of Larry Peterson, was formed with the combination of the Kalispell Fishery Assistance Office and Creston National Fish Hatchery into one headquarters in vacant housing at the hatchery. Two of the residences were converted into an office and lab, respectively. On July 14, 1980 the administration of the Northwest Montana Wetlands Management District, under direction of Robin Magaddino, joined the Center.

Fish production at the hatchery had reached its lowest number in years, with 691,606 trout weighing about 44,000 pounds stocked out.

Due to the declining emphasis on the hatchery program and a series of personnel changes, including the retirement of hatchery manager Glen Hammer in January 1980, the death of Lyle Clair in 1979, and the medical retirement of Jim Freshman in early 1980 (he passed away in 1981), the hatchery staff was reduced to three people. Dave Bermel

was instated as a full-time permanent employee and Darrell Stout was put in charge of hatchery operations.

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1981

Due to the diverse nature of the program, the title of the station was changed to the Northwest Montana Fish and Wildlife Center. Hatchery production levels remained stable with about 39,000 pounds of trout planted out. In addition, a small quarantine facility was built in one of the raceways and in November 500,000 kokanee salmon eggs were obtained from the state of Montana to be reared to supplement their program. This was the first attempt at kokanee production at Creston. The hatchery and office complex was "spruced up" for a Station Open House on May 15th. Darrell Stout retired, Daryl Jennings was assigned to lead fish culture efforts, and Gar Holmes was hired as a temporary employee to assist at the hatchery.

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1982-1983

No annual report was located for 1982 or 1983.

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1984

Major staff changes again occurred during 1984. Daryl Jennings transferred to Denver and was replaced by Tom Pruitt as hatchery manager. Larry Peterson transferred to Alaska and was replaced by Bruce Haines as Center Director. Sharol Birks transferred from the Forest Service to become the Fishery Assistant.

In the past three years the development of an Eagle Lake rainbow trout broodstock and spawntaking operation has occurred. Nearly six million eyed Eagle Lake eggs were shipped to seven Federal hatcheries and seven state agencies in 1984. In addition, over one million westslope cutthroat eggs were collected on the station, with the majority of those transferred to Montana's Murray Springs Hatchery near Eureka. A lot of work was done on the hatchery complex and grounds, primarily by YCC (Youth Conservation Corps) crews, cleaning up the facility, painting all the hatchery buildings, etc.

1985

The name of the station was changed to Creston Fisheries Center, consisting of two components, the Creston National Fish Hatchery and Kalispell Fishery Assistance Office. The Wetland Management

District Office and Ecological Services Office continue to be housed at Creston.

The majority of fish reared continued to go to Montana Indian Reservations. In addition, nine million Eagle Lake rainbow trout eggs and over one million westslope cutthroat trout eggs were produced from broodstock maintained at Creston. Over 1.2 million fish were either planted or transferred from the hatchery, with a production total of 67,000 pounds. They consumed 93,306 pounds of feed at an average cost of 32 cents per pound.

Contractors installed a new 5-stall garage, shop building, and two aeration towers at the hatchery. Cleanup of the hatchery grounds and buildings continued.

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1986-1987

During these two years no annual report was prepared. Just over one million fish were stocked and about six million Eagle Lake rainbow trout eggs were produced each year. Robert Thompson replaced Tom Pruitt as Hatchery Manager in 1987.

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1988

This year marked the 50th anniversary of the existence of Creston National Fish Hatchery. Production for the year was 44,712 pounds of fish, broken down as 59% Eagle Lake rainbow trout, 26% Arlee rainbow, 10% brook trout, 5% lake trout, and less than 1% westslope cutthroat trout. Nearly all the rainbow and brook trout production was for stocking on the Montana Indian Reservations. The lake trout production was part of a plan to establish a lake trout broodstock, primarily for Great Lakes stocking programs, with the first egg take expected in 1989. A little over 5 million eyed Eagle Lake rainbow trout eggs were collected from that broodstock and shipped. According to the annual report: "At present production levels, this station is operating substantially under its full potential. Either more eggs and/or more fish could be produced."

"In cooperation with the Bozeman Fish Technology Center, a test was set up and run to evaluate the performance of baffles in raceways. Conversions were found to be better in the raceways without baffles, but fin erosion was less in raceways with baffles."

At the end of the fiscal year, Bruce Haines, Complex Manager, accepted a transfer to Vernal, Utah. The position was eliminated and the

Hatchery and Technical Assistance Offices were restored to the separate entities they had been prior to 1980; although the Creston complex continues to provide office space for other Service personnel in this area. The Hatchery Manager position was upgraded to a GS12 level. Adam Mendoza became Assistant Hatchery Manager, transferring in during March from Willow Beach NFH.

The hatchery hosted 52 tour groups during the year and had an estimated 5,725 visitors in total. An "open house" was held in June of 1988.

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1989

About 1.25 million fish weighing almost 80,000 pounds were stocked in 1989. Approximately 75% went to Reservation waters, with most of the rest going to waters managed by the Montana Department of Fish, wildlife and Parks (MDFWP). This represents the highest production level at Creston in quite a number of years. The hatchery also produced a little over 6 million Eagle Lake rainbow trout eggs.

"Facilities were prepared to isolate, for disease purposes, lake trout eggs taken from adult fish in Lewis Lake, Yellowstone National Park. These eggs will be hatched and raised on the station to establish a broodstock which will likely be used to provide eggs to hatcheries supplying fish to the Great Lakes." The eggs were subsequently incubated on spring water supplied to a temporary facility at the undeveloped State-owned Rose Creek Hatchery site a few miles south of Creston.

"During the year, negotiations were initiated to provide fish for Flathead Lake under a mitigation agreement for Kerr Dam with Montana Power Co., MDFWP, and the Confederated Salish and Kootenai Tribes."

"This winter, extremely low air temperatures were experienced with resultant low water temperatures reducing the growth rate in the production fish and slowing maturation in the brood fish. Also, artesian flow from the wells was reduced."

The annual report made note of asbestos concerns in the refrigerated storage rooms and underground leak testing of buried fuel storage tanks. In addition, most of the buildings and other facilities are suffering from a lack of funding for maintenance. The annual report in 1988 was the first to include a "Fish Health Activities Summary" detailing disease problems and the use of chemical therapeutants.

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1990

Production in this year was slightly ahead of 1989, with 89,240 pounds of fish produced (including brood lot weight gains), 710,000 stocked in Reservation waters, and nearly 500,000 fish stocked in State managed waters under an agreement whereby the State of Montana reimbursed the hatchery for feed and distribution costs. In addition, 6.8 million eyed Eagle Lake rainbow trout eggs were produced. Those eggs were shipped to 15 different state and federal hatcheries and research centers in 12 states.

Facilities were prepared to isolate a second year-class of Lewis Lake trout eggs, which were eyed at Saratoga NFH and shipped here at that stage for hatching and rearing. Kerr Dam mitigation negotiations continued (a process that was to extend for many years). Meanwhile, another mitigation package for Hungry Horse Dam was negotiated.

"Another year of study was undertaken with the assistance of the Fish technology Center exposing a group of fish to methyltestosterone steroid in an attempt to discourage the production of sex organs, diverting energy to the production of additional body bulk. Results from the field indicate success in reduction of sex organs."

Operational costs of the station were about \$275,000 for the year. Included, were expenditures of about \$155,000 for salaries, \$39,400 for 131,000 pounds of fish food (30 cents per lb), \$4,000 for vehicle maintenance and \$4,700 for gasoline, and \$5,000 for heating oil and electricity.

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1991

Assistant Manager Adam Mendoza transferred to Hotchkiss NFH, Colorado and he was replaced by Don Edsall from the Bozeman Fish Tech Center. Production levels were similar to 1989 and 1990. This year marked the beginning of the Creston NFH participation in the Hungry Horse Mitigation Program. New, temporary early rearing facilities consisting of 32 six-foot circular stock tanks were installed in four of the outdoor raceways with MDFWP funding and CNFH labor. Kokanee salmon production began on a small-scale with anticipation of enlarging the program to fit mitigation needs. A third year-class of Lewis Lake lake trout were received.

Dave Bermel, in cooperation with the Bigfork American Legion, conducted a very successful children's fishing derby to observe National Fishing Week.

Two brand new diesel trucks were received to replace our old

distribution trucks. The larger truck will be equipped with four new distribution tanks and the truck will be used as a Regional Distribution Unit in the northern part of Region 6.

The old house (quarters #2) was re-sided by a contractor and new domestic water lines were installed to that house and the shop building.

"This station is in a state of flux at present. The Kerr Dam and Hungry Horse Dam Mitigation Plans should be approved and funded in the near future. When this happens, the station is slated to become the primary fish production facility for the fisheries mitigation in the Upper Flathead River Drainage. Ultimately, additional rearing space, water aeration and reuse, raceway covers, feed and vehicle storage, additional broodstock facilities, and paving will, hopefully, be funded by the mitigation funds."

"Another part of the mitigation program is the construction of an isolation/production facility to be located at MDFWP's Rose Creek site. This will be used primarily for bull trout production, the gametes to come from wild populations in the Flathead Drainage. The plan is to operate the facility from Creston."

"Should the kokanee not perform to expectations after five years, the emphasis of the mitigation fish production program will likely shift to westslope cutthroat trout. During the time of the kokanee production, provisions for westslope cutthroat egg production will be put in place to assure a smooth transition from kokanee to cutthroat, should the need arise."

"The dam that holds Jessup Mill Pond, from which the hatchery water supply comes, has been designated a high hazard dam. Test drilling, monitoring and underwater inspections were performed this year." Complete replacement of the dam is planned in the late 1990's.

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1992

Production increased to 113,861 pounds of fish. The Bonneville Power Administration financing under Hungry Horse Mitigation was secured to begin raising kokanee salmon for Flathead Lake. The BPA funded approximately 40 percent of the station total expenditure of nearly \$400,000 during FY 1992. BPA financed construction of a degassing column for the early rearing facility, and installation of lights and outlets under the tent covers. Wade Fredenberg was hired as Fish Production Coordinator under the mitigation program and Sharon Hooley was added as a part-time Office Automation Clerk.

All the underground storage tanks were removed and seven ground source heat pumps were installed in the buildings on the station.

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1993

About 80,000 pounds of fish were produced, including 210,000 6-inch kokanee salmon weighing about 19,000 pounds that were stocked into Flathead Lake on June 1 & 2. The hatchery produced 2.5 million eyed Eagle Lake rainbow trout eggs and then closed out this broodstock program to make room for the expanding mitigation effort. BPA funded the design and construction of degassing columns, complete with oxygen injection, on raceways 25-48. In addition, BPA initiated preliminary engineering on the installation of new early rearing tanks to increase space and efficiency and the potential installation of an effluent treatment system for the hatchery.

The hatchery crew constructed a bird netting structure over the upper 24 raceways to control the mallard duck depredation that has become excessive during winter cold snaps. Montana Power Company funded construction of a small bull trout isolation and early rearing facility in the old feed storage building. In mid-September 20,000 bull trout eggs were collected from wild fish in the Swan River drainage for experimental work.

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1994

The hatchery began its first attempt to utilize captive kokanee as broodstock, in order to solve egg supply shortfalls for this species.

In November, 1994, the three year old captive females produced about 3 million eggs, with an average of about 1,000 eggs per female. More importantly, eyeup of these eggs exceeded 90%. A total of 812,000 6-inch kokanee were stocked into Flathead Lake as part of the Hungry Horse Mitigation effort. Additional rainbow and cutthroat trout plants went into state and Tribal waters. In all 108,000 pounds of fish were produced.

"BPA financed, engineered, and installed an effluent control system consisting of vacuum pumps, baffles, piping and conversion of two raceways to be used as settling basins. BPA also installed new fiberglass tanks in the tents and seven additional tanks in the hatchery."

Quarters #10 (the southernmost building on the complex) was resided with steel siding and the windows were replaced. The office building, lab, and hatchery were all modified to conform to

handicapped access regulations. The vehicle storage building was enlarged to accommodate the large distribution trucks.

The emergency overflow pipe through the dam was deemed unsafe and was grouted shut. To allow rapid drawdown of the pond in an emergency, Dam Safety installed a barge and six large electric pumps capable of pumping 30,000 gpm in the pond at the dam face.

The hatchery grounds were spruced up with a new entry sign, new stairs from the parking lot down to the hatchery, and a new visitor information kiosk. Estimated visitation for the year was 10,800 with tours conducted for 37 groups, primarily from local public schools.

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1995

A total of 502,000 yearling kokanee (6-inch) and 409,000 fingerling salmon (3-inch) went into the South Bay area of Flathead Lake in May and June. Preliminary monitoring indicated much better survival than previous plants, attributed to the lower population of predaceous lake trout in this portion of the lake. In the fall, over 300 mature kokanee were captured in the lake at the 1994 and 1995 planting sites, indicating progress in this endeavor to restore kokanee to Flathead Lake.

The bacterial disease furunculosis reappeared at Creston in 1995, after a 24-year hiatus. Hardest hit were kokanee and westslope cutthroat trout. The kokanee were treated aggressively with oxytetracycline and Romet-30 and losses were held to manageable levels. Future broodstock were injected with a vaccine. Treatment of the cutthroat trout stocks were less successful and they were destroyed. Rainbow trout were largely unaffected. In September, Montana Fish, Wildlife and Parks imposed a quarantine on the facility and hatchery managers wrote a Fish Health Management Plan detailing future plans for disease management and sanitary procedures. By fall, losses had subsided to low levels. Total production for the year was 72,200 pounds.

The experimental bull trout program was successful in culturing and raising two year classes of the fish, but was subjected to a lawsuit and a storm of controversy over the role of such a program in recovery of this native species.

BPA financed and engineered a partial degassing system for raceways 8-24. A new steel footbridge was installed over Mill Creek on the

pathway between the hatchery and the main offices. A new fish pump was purchased to facilitate moving lots of fish.

Hatchery Manager Bob Thompson retired from the Service in October. His replacement, Mark Maskill from Saratoga NFH in Wyoming, will be on board in January, 1996.

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