

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

YELLOWSTONE NATIONAL PARK

FISH PLANTING REPORT

1939

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IN
STORAGE

YELLOWSTONE NATIONAL PARK

FISH PLANTING REPORT

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ON MICROFILM

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Fish Planting Report
Yellowstone National Park

1939

The National Park Service cooperating with the Bureau of Fisheries and the Fish and Game Departments of Montana and Idaho planted 12,836,000 trout in Yellowstone Park waters during the 1939 season. Statistically the number of fish planted was slightly above last year, however the stocking of over a million #1 and #1 $\frac{1}{2}$ blackspotted fingerling from Lake hatchery is notable as this is the first time that any large scale feeding has been undertaken by the Bureau of Fisheries at this station. The feeding was entirely successful and resulted in the production of better planting stock for Yellowstone waters.

It appears that the numbers of blackspotted and Eastern brook trout and Montana grayling obtained were adequate, while insufficient numbers of rainbow and Loch Leven trout were stocked. In view of the urgent need for additional rainbow trout to stock the Madison drainage it seems that all of the eggs taken at Trout Lake should be returned to Yellowstone when hatched. During the 1939 season more than half of the eggs taken were shipped to another park.

The number of fish reported at the checking stations by anglers decreased this year although travel increased. There were 133,383 fish reported in 1939, while the number in 1938 was 163,859. The travel in 1939 was 486,936 as compared to 466,185 in 1938. A creel census on Yellowstone Lake was undertaken by the Bureau of Fisheries in cooperation with park rangers and boat dock employees which should furnish a more accurate check on the fish taken than the one secured at entrance stations. We do not have complete figures on this census at the present time as the compilation is being made by Marion Madsen, a temporary employee of the Bureau of Fisheries, however; during July it was estimated 68,950 fish were taken from Yellowstone Lake. During the census it was found that all fishermen were ready and willing to furnish information and the contact work also revealed a demand for a small pamphlet giving a summary of regulations, species of fish in different waters and methods of catching fish.

The number of fish planted by species during the 1939 season was as follows:

Blackspotted trout	10,021,978
Montana grayling	2,061,590
Rainbow trout	472,565
Loch Leven trout	273,900
Eastern brook trout	6,000
Total	<u>12,836,033</u>

The distribution of fish to park waters was started May 2 and the last plant was made on October 6. Stock from the Bureau of Fisheries was dis-

tributed in National Park Service trucks with the exception of a few plants made by the Bureau at Yellowstone Lake. The Montana State hatcheries distributed in their own trucks while the fish from the Idaho hatchery at Ashton were handled by the Park Service.

District rangers supervised the fish planting whenever possible and when this procedure was not practical rangers from headquarters handled this phase of the work. The Bureau of Fisheries assisted in the planting work from Lake hatchery and Mr. Tuttle, who had charge of that station, cooperated with us on all of the distribution work whenever help was needed. Both agencies now have distribution trucks of the small type that can be carried on pickup trucks and this equipment facilitated the planting work. It is interesting to note that the reported planting loss of fish was .5% which is much less than either the hatchery loss of eggs or fry.

The bear protection at the fish traps was entirely satisfactory again this year, and the only trouble occurred at the Grouse Creek trap where a bear came through the electric fence on three occasions. The traps on small streams were protected by cyclone fencing while spawning stations on large creeks were fenced with the electric units. Both the Bureau of Fisheries and the Park Service furnished electric fence units for protecting the traps.

Blackspotted Trout

A total of 37,388,556 blackspotted eggs were collected on tributaries of Yellowstone Lake during the spawning season. The first collection was made May 9 at Arnica Creek and on July 24 the last eggs were taken at Hatchery Creek. The largest collection was made at Pelican Creek where 11,861,262 eggs were taken as compared with 5,000,048 in 1938 and 14,815,030 in 1937. All of the trapping operations were terminated before the trout run had stopped with the exception of spawn taking at Hatchery Creek where the method of egg collecting is demonstrated to park visitors. Suckers were again caught at Pelican Creek with 249 being taken this year as compared with 382 in 1938.

All blackspotted eggs handled at the Lake station came from the Upper Yellowstone drainage and all trout planted in this watershed came from the Lake hatchery. The egg incubator was not used this year but will probably be in operation next season. A number of experiments were made with the incubator and its use again next year will make available additional troughs for rearing fry to fingerling size.

The feeding of fish at Lake hatchery resulted in much better planting stock with small additional cost. There were 1,438,300 fed for a period of approximately four weeks on salmon meal at an approximate cost of \$10.00 for food. The reported loss of the entire lot in feeding was 15,282 and most of the fry were reared to #1 $\frac{1}{2}$ fingerling size. The weight of the fish planted was 618 pounds.

while 161 pounds of salmon meal was fed.

Distribution of blackspotted trout was started July 5 and the last plant was made October 6. The hatching of eggs at the Lake station was well timed and it was unnecessary to plant large numbers of fish in haste, thus better distribution was possible. In general eyed eggs were planted in the more remote waters as the transportation loss is much lower than when fish are distributed by pack horse. Observations indicated that survival from this type of plant was good. District Ranger Anderson watched one of the plants in Bechler River until the fish started to feed and scatter out and he reported that at least 80% reached fingerling size.

In distributing advanced fry 200,000 were transported on trays successfully in the small "Tuttle tank" and 55,000 to 70,000 #1 or #1½ fingerlings carried well in this unit. Planting of fingerlings in protected bays and the lee side of islands in Yellowstone Lake during the fall months seemed quite successful as the large fish had gone to deeper water at this time of the year. Fingerlings were transported by pack string on one occasion by loading each pack can with 1250 and icing the water. Losses were negligible when this method was used.

The allotment of blackspotted eggs in 1939 was as follows:

Egg take	37,388,356
Hatchery loss (eggs)	2,057,456
Hatchery loss (fry)	136,700
Hatchery loss (fingerling)	<u>15,282</u>
Number of eggs, fry and fingerling for distribution	35,178,918
Eggs shipped N.P.S.	6,101,200
Eggs shipped B. of F.	18,604,700
Eggs hatched & planted N.P.S.	10,223,018*
Eggs hatched & shipped B. of F.	<u>250,000</u>
	35,178,918

*Includes 500,000 eyed eggs and 900,000 advanced fry planted in Grand Teton National Park.

Eggs Shipped - National Park Service

Glacier Park	2,500,800
Rocky Mountain Park	1,000,000
Grand Teton Park	<u>250,000</u>
	3,750,800

Eggs Shipped to other places for hatching and return to Yellowstone waters:

Bozeman, Montana	600,100
Ashton, Idaho	250,000
Big Timber, Montana	<u>1,500,300</u>
	2,350,400

Total eggs shipped N. P. S. 6,101,200

Blackspotted Trout Plants in the Park

Summary of blackspotted egg, advanced fry, and fingerling plants made during the 1939 season in Yellowstone National Park:

Eyed Eggs	2,250,000
Advanced Fry	5,870,000
#1 Fingerling	703,760
#1½ Fingerling	<u>1,251,058</u>
Total	10,074,818
Planting loss	<u>52,840</u>
Blackspotted trout plant, loss deducted	<u>10,021,978</u>

The following hatcheries furnished blackspotted eyed eggs and fish for distribution to park waters:

Yellowstone Lake	8,815,818
Bozeman, Montana	527,500
Big Timber, Montana	612,500
Ashton, Idaho	<u>119,000</u>
	10,074,818

The detailed distribution of blackspotted trout is shown in the following tables. All fish that had not been fed in the hatcheries are classified as advanced fry, while those that had started to feed before being planted are classified as fingerlings with the appropriate number designating the size.

Blackspotted Trout

Upper Yellowstone River Drainage	Eyed Eggs	Advanced Fry	#1 Fingerling	#1½ Fingerling	Planting Loss	Total
Arnica Creek		200,000	55,440	52,800	5,150	303,090
Bear Creek	50,000					50,000
Chipmunk Creek	400,000			*92,800		492,800
Clear Creek	100,000	200,000	112,120	58,800	150	470,770
Cub Creek	100,000	200,000				300,000
Flat Mountain Arm Creek	100,000					100,000
Grouse Creek	500,000					500,000
Hatchery Creek				27,300		27,300
Little Arnica Creek		100,000		50,600		150,600
Little Thumb Creek		100,000		46,995		146,995
Pelican Creek		1,000,000		46,125	500	1,045,625
West Thumb Creek		100,000				100,000
Yellowstone River		1,000,000		123,000	2,700	1,120,300
Squaw Lake		100,000		50,600		150,600
Sylvan Lake		100,000		50,600	100	150,500
Yellowstone Lake:						
Arnica Bay			18,480	68,640	100	87,020
Bridge Bay		200,000		301,733	10,600	491,133
Frank Island				55,500	50	55,450
Gull Point				68,640	100	68,540
Mary Bay				15,375		15,375
Stevenson Island				111,000	100	110,900
West Thumb Dock			78,720		40	78,680
Totals	1,250,000	3,300,000	264,760	1,220,508	19,590	6,015,678

Total plant, loss deducted -- 6,015,678

*100,000 Advanced Fry were taken from Lake hatchery to a holding pen at the Grouse Creek trap and fed four weeks before they were released as #1½ fingerlings. Loss -- 7,200 in feeding.

Blackspotted Trout

Misc. Lakes and Streams	Eyed Eggs	Advanced Fry	1 $\frac{1}{2}$ Fingerling	Loss	Total
Aster Creek		150,000		150	149,850
Aster Lake			5,550	400	5,150
Beula Lake	100,000				100,000
Crawfish Creek	50,000				50,000
Falls River #3		150,000		150	149,850
Forest Creek	100,000				100,000
Lewis River #3		250,000		1000	249,000
Mallard Lake			25,000	300	24,700
Mariposa Lake	100,000				100,000
Middle Creek		12,500			12,500
Snake River		100,000		200	99,800
Wrangler Lake		12,500		200	12,300
	350,000	675,000	30,550	2,400	1,053,150

Total plant, loss deducted -- 1,053,150

Gallatin River Drainage	Advanced Fry	Loss	Total
Gallatin River	514,840	1,950	512,890
Sportsman Lake	12,660	3,800	8,860
	527,500	5,750	521,750

Total plant, loss deducted -- 521,750

Blackspotted Trout

Lower Yellowstone River Drainage	Eyed Eggs	Advanced Fry	#1 Fingerling	Loss	Total
Amphitheater Creek		50,000		500	49,500
Cache Creek	100,000				100,000
Gardiner River		125,000		200	124,800
Hellroaring Creek	50,000				50,000
Lamar River		400,000		50	399,950
Miller Creek	100,000				100,000
Pebble Creek		100,000		500	99,500
Slough Creek		492,500	320,000	20,700	791,800
Soda Butte Creek		200,000			200,000
	250,000	1,367,500	320,000	21,950	1,915,550

Total plant, loss deducted -- 1,915,550

Bechler River Drainage	Eyed Eggs	#1 Fingerling	Loss	Total
Bechler River	166,700	11,500	3,100	175,100
Boundary Creek		34,500		34,500
Falls River #1		73,000	50	72,950
Mtn. Ash Creek	133,300			133,300
Proposition Creek	100,000			100,000
Totals	400,000	119,000	3,150	515,850

Total plant, loss deducted -- 515,850

Montana Grayling

At the Grebe Lake Station grayling were spawned from May 24 to June 11 and 5,117,660 eggs were taken, Distribution of fry from Grebe Lake hatchery was as follows:

Egg take	5,117,660
Hatchery loss	604,120
Number of eyed eggs	<u>4,513,540</u>
Egg shipments B. of F.	2,450,400
Fry planted N. P. S.	<u>2,063,140</u>
	4,513,540

Grayling were planted in park waters June 24 to 29 in transportation cans and all fish planted were fry. The planting loss of 1,550 was noticeably low this year and may have been due to the cool weather that prevailed during the month of June.

A table showing the detailed distribution of grayling follows:

Montana Grayling Plants in Park

Location	Fry	Planting Loss	Total
Cascade Lake	100,000		100,000
Gibbon River #2	370,000	200	369,800
Gibbon River #3	329,000	50	328,950
Grayling Creek	103,992		103,992
Grebe Lake	80,000		80,000
Ice Lake	302,510	250	302,260
Madison River	593,478	850	592,628
Sepulcher Lakes	80,000	100	79,900
Twin Lake (South)	104,160	100	104,060
Totals	2,063,140	1,550	2,061,590

Total plant, loss deducted -- 2,061,590

Rainbow Trout

Rainbow were spawned May 3 to June 6 with 726,524 eggs being collected. As some of the trout spawn on the shore areas it was necessary to trap some of the fish with nets. The egg take was below last year and from observations it appears that some of the brood stock are escaping over the dam. The blackspotted trout caught were spawned and released in the stream running out of Trout Lake. There were 137 blackspotted trout handled in this manner. The rainbow eggs allotted to Yellowstone were eyed at Trout Lake and shipped to Ennis, Montana for hatching.

As mentioned previously it appears that all, or at least a majority, of the eggs taken at this station should be allotted to Yellowstone since this operation was developed primarily to take care of park requirements.

Egg take	726,524
Eyed egg loss	57,924
	668,600
Eggs hatched N.P.S.	246,000
Eggs shipped to Glacier Park	400,200
Loss at Ennis hatchery	22,400
	668,600

Distribution from the Ennis hatchery was done July 24 to 28, while Montana hatcheries planted in the park from August 21 to September 7. A detailed distribution table follows:

Rainbow Plants in Park

Location	From Bureau of Fisheries all #1 Fingerling except Trout Lake	Planting Loss	From Montana State - All 1½ Fingerling	Planting Loss	Total
Firehole River	15,500	200			15,300
Gibbon River #1			115,000	225	114,775
Goose Lake	48,500	100			48,400
Iron Creek	32,000	100			31,900
Madison River	118,000	29,500	140,000	205	228,295
Nez Perce Creek	32,000	100			31,900
Trout Lake	2,000 - #6	5			1,995
Totals	248,000	30,005	255,000	430	472,565

Total plant, loss deducted 472,565

The comparatively heavy planting loss of 29,500 was caused by failure of the circulating pump motor on the distribution tank. This occurred at West Yellowstone and the fish were rushed to the Madison River and planted as fast as possible. It was necessary to recondition the motor in the shops before it would again operate.

Loch Leven Trout

All Loch Leven fish planted in the park were received from the Montana State hatcheries at Emigrant and Big Timber and were planted in the Madison River and tributaries. These fish were distributed to park waters in Montana State trucks as follows:

Location	# $1\frac{1}{2}$ Fingerling	Planting Loss	Total
Firehole River	102,000	350	101,650
Madison River	172,662	412	172,250
	274,662	762	273,900

Total plant, loss deducted 273,900

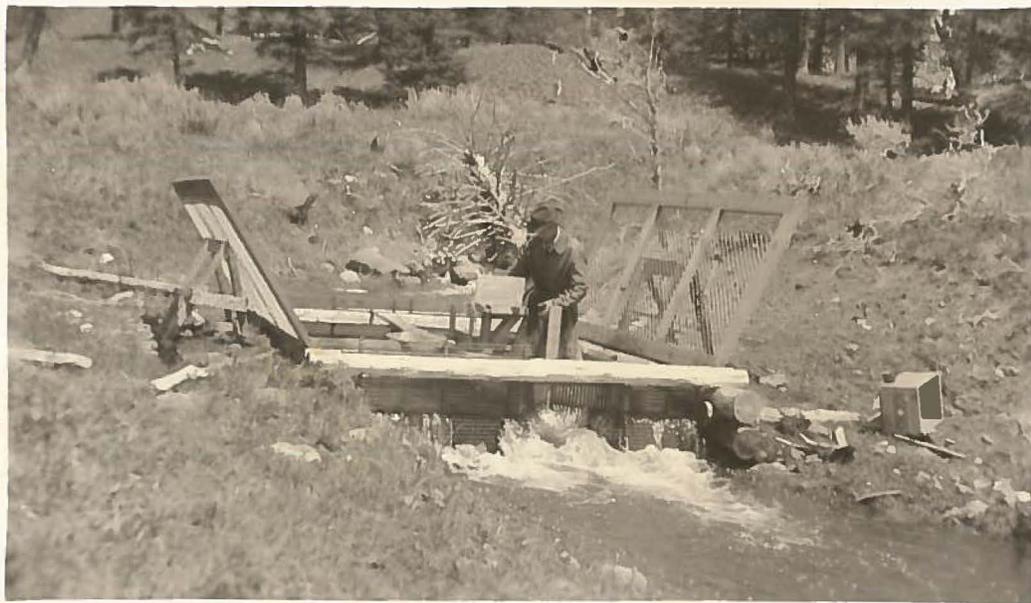
Eastern Brook Trout

All brook trout were furnished by the Bureau of Fisheries hatchery at Bozeman, Montana as # $2\frac{1}{2}$ fingerlings and were distributed in National Park Service trucks without loss as follows:

Blacktail Deer Creek	3,000
Blacktail Lake (upper)	500
Lava Creek	<u>2,500</u>
Total plant	6,000



Electric fence installed by the Bureau of Fisheries at Clear Creek to keep bears out of the trap. The electric fence controller and entrance gate to the trap may be seen in the background.



Mechanical bear protection at the Trout Lake trap. The two doors of cyclone fencing swing down on top of the holding pens and eliminate bear depredation.



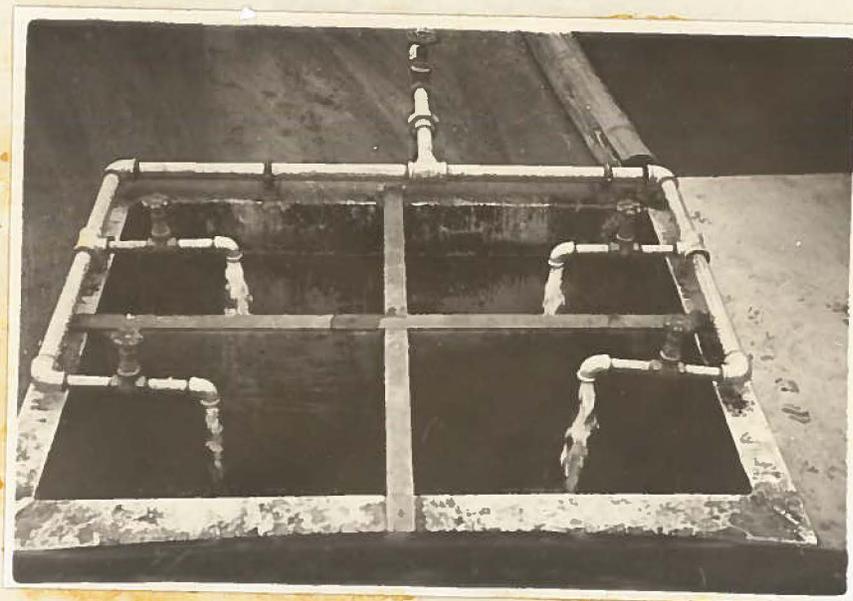
Eyed eggs packed in moss and ice are transported to the remote tributaries for planting.



Distribution tank ready for loading at Lake Hatchery.



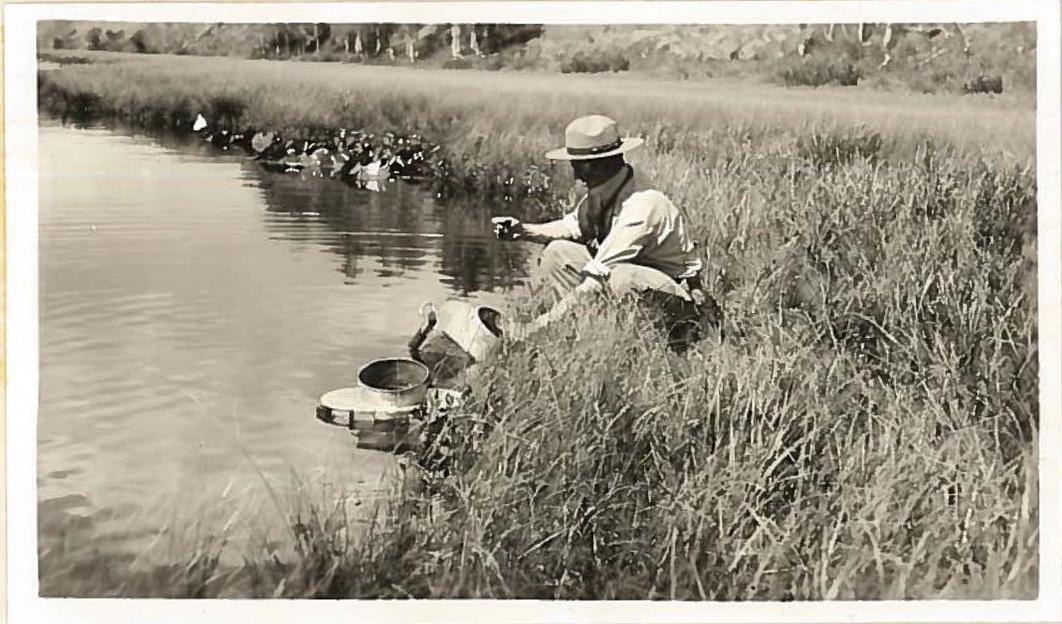
Ranger planting eyed eggs in one of the tributary streams in the Bechler country.



Circulating system of small distribution tank.



Ranger packing a small allotment of blackspotted trout to one of the lakes off the beaten path.



Tempering the water in the cans before releasing the fish.