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Report 233

PROPOSED WINTER PROGRAM OF LAKE IMPROVEMENT BY THE M.E.C.W.

FOR THE PERIOD OCTOBER 15, 1933, TO APRIL 15, 1934

This report is the result of a field reconnaissance by skilled worker R. W. Eschmeyer, and has been prepared by him, for the use of the Department of Conservation, in consultation with Carl L. Hubbs, Director of the Institute for Fisheries Research.

The nature of lake improvement work, designed to increase fish life and to make for better fishing, has been discussed in outlining previous projects which have been accepted. The public benefit to be derived from this work is great, especially as the areas benefitting are economically dependent on the development of this wildlife resources. The winter lake improvement work as proposed would entail a minimum outlay for equipment and materials, as it involves little else than labor.

A list of the various camps in which lake improvement work can be done to advantage in winter, together with the lakes which are in need of improvement and the approximate man months desirable to complete this winter work, is here given.

In all cases a crew of 25 men is considered desirable, and the time as indicated is based on a crew of that size.

Only those lakes are listed in which improvement work is desirable. In all cases accessibility is given due consideration. The lakes are either near the camp or are on roads which will be kept open during the winter.

A heavy winter program is desirable. Winter work has advantages over a summer program for the following reasons:

1. Men are more readily available in winter since certain other phases of work cannot be carried on at that time.
2. Almost no equipment is needed in winter (other than the standard camp equipment). Boats, outboard motors, etc., will not be necessary.
3. The work can be done more quickly in winter than it can be done in summer.

Winter improvement consists of the following two items:

1. Provision of more shelter for young fish through the installation of brush shelters.
2. Provision of gravel for bass spawning.

The lakes listed require either one or both of the improvements to improve the environment and make greater natural production of adult fish possible.

EQUIPMENT

Equipment, other than standard camp equipment, consists, in each camp, of the following items.

1. Spuds for cutting holes in the ice. Planting dibbles would probably serve this purpose, and these may be on hand. Otherwise suitable spuds could probably be made. Three needed in each camp or 90 in all if the entire project is approved.
2. Two saws. Saws are needed for cutting ice. Cross-cut saws, set wide for cutting ice should be satisfactory. These could be used later for other work. Two needed in each camp, or 60 in all. These may be in part already at hand.
3. One hundred feet of 3/4 inch rope desirable in each camp, or 3000 feet altogether.

MATERIALS

Burlap bags are now available, at least for a part of the winter.

Wire is needed. Number 11 or 12 is most desirable but No. 9 can be used. About 16000 lbs. of wire for the entire project would be needed.

Nails (8 or 10d) are needed in a few instances.

Old lumber needed in a few instances (generally may be obtained from deserted houses on state land).

Sheet piling for 60-foot dam (in outlet of Manistique Lake). Possibly to be obtained locally.

No other materials needed.

It is desirable that the work commence at an early date. It is desirable to have the brush hauled to the lake or cut there so that the shelters can be built and submerged as soon as the ice is safe. Relatively thin ice will facilitate cutting.

WORK OTHER THAN IMPROVEMENT WORK

It appears desirable that all lakes on which work is being done be surveyed and sounded through the ice. This will be an aid in determining an intelligent stocking program, will permit the charting of the several improvements and will be needed to determine the location of the improvement devices.

It appears desirable, also, in a few instances, to establish creel census stations on a few lakes to determine total fish production, the status of fishing (i.e., the catch per hour) and to determine certain other factors regarding fishing. This will involve detailing a few of the boys in two shifts to cover the fishing on selected lakes.

These two items should call for less than 10% of the time spent on the lakes.

DAMS

The construction of dams at the outlets of Tawas and Big Manistique lakes is considered feasible and is recommended as desirable from the standpoint of improving fishing. The carrying out of these two projects would be contingent upon the approval of riparian land owners, on the assurance of public benefit and on the assurance that other interests would not be harmed. The Tawas Lake dam would seem to call for concrete work and would need be postponed until next summer. The Manistique Lake dam could be built of sheet piling, and would be most readily done in the winter, as the outlet lies in a swamp and would require cordoroy-road

construction for access in the summer. This project is recommended for construction by the Germfask Camp this winter, subject to the condition mentioned above. A pump for jetting in the piling is available at the local Conservation Headquarters.

ASSURANCE OF PUBLIC BENEFIT

All the lakes listed are open to public fishing according to the evidence at hand. Some are assuredly available for public use by reason of state or federal ownership of part or all of the shore (legal access to a lake in Michigan is interpreted as involving fishing rights on all the lake). On those lakes surrounded entirely by private ownership, it is planned to have the owners petition for the improvement work. Each lake project is made subject to withdrawal in the event the petitions are not turned in. It is anticipated that in the majority of cases the work will be petitioned for.

PROPOSED WINTER PROGRAM

Lower Peninsula State Camps

Camp (new names)	Lakes	Work (for 25 man crew)	Remarks
108S AuSable		0	No program - no lakes near new location.
58S Baldwin		0	No program - work not needed near camp.
77S Black Lake	Black	2 mo.	To complete unfinished work and place shelters at upper end of lake.
80S Cadillac	L. Cadillac L. Mitchill Pleasant L. Long L. Round L. L. Missaukee L. Meautataka	4 mo.	Shelter increase needed in these lakes.
102S Fife Lake		0	Fife Lake contains considerable shelter now. Other lakes in area worked previous summer.

Camp (new names)	Lakes	Work (for 25 man crew)	Remarks
57S Harrison	Little Long Budd Arnold	3 mo.	Thorough creel census proposed for Budd Lake.
52S Higgins	Higgins Lake (north end)	2½ mo.	Work begun during summer. More protection needed.
83S Houghton	Long L.	2 mo.	Could be worked from Camp Harrison if considered more desirable to do so.
78S Johannesburg	Big Bear Little Bear Chub Douglas	3 mo.	
61S Lunden	Sage Avery (2) Snider E. Twin W. Twin	3½ mo.	McCormick and Bass Lakes not examined. No work needed on Fish Lakes and Wolf L.
75S Molasses River		-	No lakes.
59S Ogemaw	Clear Ambrose Horseshoe Piper Mud (Elni)	2½ mo.	
62S Pigeon River		-	Lakes most in need of attention probably inaccessible.
79S Pioneer		0	Near south end of Higgins Lake. Prefer concentrating work on Upper Higgins Lake.
76S Presque Isle		0	Work completed on easily accessible lakes.
54S Wolverine	Thumb L.	2 mo.	
107S Newaygo	Pickerel John Ford Sylvan Emerald Hess Bill's Kimball Long Brooks Pettit Blanche	4 mo.	Other lakes in vicinity

Camp (new names)	Upper Peninsula State Camps		Remarks
	Lakes	Work (for 25 man crew)	
68S Cusino		0	Shallow boggy lakes
100S Big Bay	Independence Saux Head Bass (3) Harlow (Pickerel)	4 mo.	
56S Escanaba R.		0	Small lakes--not enough lakes to justify program here.
55S Gogebic	Gogebic	3½	Plenty of work needed on this lake.
97S Gwinn	Little L. Shag Little Shag Bass Echo Little Trout Big Trout	4 mo.	
104S Manistique	Doyle Smith Island Dodge Lily Ghost Long Deer Indian	4 mo.	
53S Mackinac		0	Shallow boggy lakes
96S Brevort	Brevort Little Brevort	2½ mo.	Other lakes in vicinity shallow and boggy
101S Dunbar		0	Mostly shallow boggy--not enough to justify work
103S Newberry		0	
106S Ontonagon		0	
98S Germfask	North Manistique Big " South "	4 mo.	Includes estimate for construction of sheet-piling dam on outlet.
99S Sturgeon River	Six Mile Norway Pickerel Brown's Lyons--if accessible East " "	4 mo.	
87S Wells		0	3 lakes in vicinity but work not considered desirable here.

State Park Camps

Camp (new names)	Lake	Work (for 25 man crew)	Remarks
Ludington	Hamlin L.	2 mo.	Work begun during summer-- more we needed.
Hayes	Round L. Wampler L.	2 mo.	

National Forest Camps

F-1	Glennie	Curtis North Hunter Vaughn Dam Pond	2 mo.	
F-2	Silver Creek		0	See remarks about dam. No lake improvement work suggested, except possibly installation of dam.
F-4	Luzerne		0	
F-5	Raco	Hulbert	0	Lake is listed as private.
F-6	Strongs		0	Lakes in vicinity quite small.
F-12	Pine River	Trout L. Carp L. Frenchman Twin	2 mo.	
F-7	Kentucky	Wheelbarrow Ready Doe Hartney Sixteen Mile	3½ mo.	
F-13	McComb	McComb Long Man Temple Cluster Bass	4 mo.	Other lakes in vicinity
F-8	Stephen	Big Bass Little Bass Martha North Crooked Scotts	4 mo.	Other lakes in vicinity
F-9	Kenton		0	
F-10	Jumbo Paint L.	Paint Winslow Marten Perch	2½ mo.	

Camp (new names)	Lake	Work (for 25 man crew)	Remarks
F-14 Jumbo	Paint E. Paint Thirty-three	2 $\frac{1}{2}$ mo.	Other lakes in vicinity
F-15 Harrietta		0	
F-16 Brethern	Dixon Chief Bear	2 mo.	
F-17 Irons	Big Bass Elbow Loon Sauble	3 mo.	Other lakes in vicinity
F-18 Horeyville		0	
F-19 Sauble River	Wolf Lake	3 mo.	
F-20 Wolf Lake		0	
F-40 Wyman		3 mo.	

Since the exact location of this camp (Wyman) could not be ascertained, the project for this camp is made subject to reduction or elimination in case the lakes in the area prove on examination to call for little or no improvement.

SUMMARY OF WINTER WORK PROPOSED

	Number of camps involved	Months of work projected (Crews of 25)	Man-Months of work projected
State Camps, Lower Peninsula	10	28.5	712.5
State Camps, Upper Peninsula	7	26.0	650.0
State Park Camps	2	4.0	100.0
National Forest Camps	11	31.5	787.5
Totals	30	90.0	2250.0

SUPERVISING PERSONNEL

In order to administer this lake improvement work effectively, the following supervising personnel is called for:

2 skilled workers to be employed through the entire period, supervising

and planning the work through the construction foremen. One man would be assigned to each peninsula.

30 construction foremen. Some of these men would presumably be recruited from the best of the squad leaders.

PLANNING FOR NEXT SUMMER'S WORK

With little additional effort, the supervising personnel could over the winter period, plan in some detail for the lake improvement work of next summer (April 15 to October 15, 1934). This would be true even though the projects as here outlined are not all carried out. This would make for efficiency if the camps are to be continued; in any event would yield plans of value for future work.

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