

INSTITUTE FOR FISHERIES RESEARCH  
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Report 175

September 30, 1932

FISH DIVISION

REPORT ON THE WORK OF THE LAKE INVESTIGATION PARTY - SUMMER OF 1932

The party entered the field on June 11th and returned on August 30th. The party consisted of 7 men, 4 of whom had been with the group the preceding summer.

Lakes Investigated

June 11th to            Six Mason County Lakes, viz. Hamlin, Bass, Long, Ford, Crystal  
July 6th                    and Gun were investigated.

July 7th to            Six Manistee County lakes viz. Bear, Pine, Chief, Lemon,  
July 25th                Dickson and Mud were investigated.

July 26th to            Three members of the party investigated 2 private lakes near  
August 2nd                Fifield, Wisconsin, on the estate of Otto C. Doering of Chicago.

July 26th to            All (thirteen) lakes and ponds on the Pigeon River Preserve,  
August 10th                were investigated.

August 10 to            Experimental improvement work was carried on in Big Twin, Little  
August 29th                Twin, and Big Blue lakes, Kalkaska County, and in Torch and  
                                  Bellaire lakes, Antrim County. Demonstration brush shelters and  
slab devices were also constructed in both Mason and Manistee counties.

General Remarks

1. Considerable work was carried on by one of the members (L. W. Ashley) in experiment planting of aquatic vegetation.
2. Work in both Mason and Manistee counties was sponsored by, and financed through, local chapters of the Izaak Walton League of America.

3. Various methods of constructing brush shelters and various methods of sinking and placing them were studied.
4. The brush shelters prove to be unusually successful in attracting large fish as well as in protecting young fish. Almost invariably people were fishing over the shelters soon after they were constructed and were making good catches.
5. Efforts are being made to have reports and maps completed very soon after examinations of the lakes are made. Reports and maps of the Mason and Manistee county lakes have already been completed and distributed.
6. Cooperation on the part of sportsmen, resorters and local residents was exceptionally good. Members of the Mason county and of the Manistee county chapters of the Izaak Walton League, Conservation Officers Knowles, Brockman and Hicking, and William Horshall of Pigeon River Preserve Headquarters were especially helpful.
7. In general, improvement work was stressed much more than previously. Approximately 50 shelters, of various designs, were constructed. A number of slab devices for minnow spawning were also made. All improvements have been marked so that they may be examined from time to time.

Certain minor improvements in survey methods were also made.

INSTITUTE FOR FISHERIES RESEARCH

R. W. Eschmeyer

JAN 9 1933

## FISH DIVISION

January 6, 1933

## Second draft of Report No. 175

## REPORT ON THE WORK OF THE LAKE INVESTIGATION PARTY - SUMMER OF 1932

The party during the summer of 1932 consisted of 7 men. Two of these have been with the party since the lake work was begun, two have seen experience the previous summer, while 3 were inexperienced in this particular line of work. All 3 were college graduates and had done work in related fields.

Although the party was more experienced than it had been previous summers it covered fewer lakes during the summer of 1932 partly because the work was carried on in a somewhat more detailed way but chiefly because considerable experimental improvement work was carried on along with the surveys.

Between June 11th and July 6th, six of the principal lakes of Mason County were investigated. This was sponsored by the Ludington Chapter of the Izaak Walton League. The following lakes were investigated:

1. Hamlin Lake. Area 4982 acres. This is by far the most important lake of the county. The lake is partially artificial and its extremely irregular shore line afforded certain difficulties in mapping and in certain other phases of the investigation. The lake presents an unusual variety of species as well as a number of interesting problems relative to improvement of fishing conditions.

2. Crystal Lake. Area 125 acres.

3. Bass Lake. Area 524 "

4. Ford Lake. Area 208 acres.

5. Long Lake. Area 114 acres.

6. Gun Lake. Area 242 acres.

Total acreage for Mason County 6195 acres.

Detailed reports were completed on each of these lakes giving both the data found and recommendations for the improvement of fishing. A demonstration brush shelter and a number of demonstration slab devices (for minnow spawning) were constructed.

The reports were turned over to the Ludington Chapter of the Izaak Walton League. This organization has planned to carry out the improvement work which was recommended for the six lakes. All lakes appeared to be in need of some improvement. It is believed that the carrying out of the recommendations will have a decided effect on future fishing in these lakes. Along with the recommendations a stocking budget was prepared indicating the species of fish and the number of fish with which the lakes, in our opinion, should be stocked annually.

Six Manistee county lakes were investigated between the dates of July 7 and July 25th. These include:

Bear Lake. Area 1744 acres.

Pine Lake. Area 159 "

Chief Lake. " 126 "

Mud Lake " 815 "

Lemon Lake " 37 "

Dickson Lake " 2.5 "

Total acreage for Manistee county 2099.5 acres.

These lakes were investigated in a manner similar to the Mason County Lakes. The work was sponsored by the Manistee county chapter of the Izaak Walton League. Detailed reports of the conditions existing in each of these lakes together with stocking recommendations and suggestions for the improvement of fishing were sent to the Manistee county chapter of the League. This organization has planned to sponsor the improvement program. In this county demonstration brush shelters were placed in Bear and Pine Lakes, and a number of slab devices were also constructed.

In both counties excellent cooperation was afforded by sportsmen and members of the I.W.L.A. as well as by local residents.

Detailed maps were prepared of all lakes indicating vegetation, size, depths, spawning beds, extent of resort development, kind of bottom, inlets, outlets etc. Copies of the maps accompanied the reports.

Reports on the lakes in these two counties were completed as soon as possible so that improvement work could be started at once.

On July 26th 3 members of the party went to Elfield, Wisconsin to investigate the two private lakes on the estate of Otto Doering of Chicago. The other 4 men began work on the lakes in the Pigeon River State Forest.

5. The 2 lakes in Wisconsin were both relatively small: Tucker Lake, 74.2 acres and Jupa Lake 11.7 acres. This survey was quite interesting and presented problems which had not been met previously: Tucker Lake was the first actual "muskallunge" lake investigated by the crew, and the relation between fish and food in this lake was more unbalanced than in any lake examined to date.

The Institute, of course, receives remuneration for work on private estates.

On August 3rd the entire crew was at work on the lakes of the Pigeon River State Forest. One lake, Lost Lake, had been investigated the previous summer. The following lakes were investigated.

1. Hardwood Lake. Area 46.3 acres.
2. Pickerel Lake. Area 40.6 "
3. Dog Lake. Area 181 "
4. Grass Lake Area 28.3 "
5. Devil's Soup Bowl Area 1.3 acres
- 6. James Lake Area 3.3 acres
7. North Twin Lake Area 5.7 acres
8. South Twin Lake Area 4.3 acres
- 9. Two-Acres Lake Area 1.9 acres

10. Ford Lake. Area 11.7 acres.

11. Hubbs Lake. Area 6 "

12. West Lost Lake. Area 4 acres

Total acreage for Pigeon River area lakes 334.4 acres.

Several ponds were also inspected but since these were found to be too shallow to be suitable for fish life they were not given consideration.

The lakes of this area showed extreme variety. Some of the larger ones were quite shallow while some of the smaller "pot hole" lakes were quite deep. Some of these lakes contained only small perch, some only minnows, others indicated that some of the lakes produce unusually large brook trout and that these trout grow fast.

By improvement and proper stocking these lakes can undoubtedly be made an important item in this area and will probably tend to prevent, to some extent at least, over fishing in the Pigeon River in the State Forest area.

The time between August 10th and August 29th was spent in Kankaska and Antrim counties on lakes which had been investigated previously.

The time was spent in placing experimental improvement devices in a number of the lakes. Considerable work was also done in transplanting vegetation from lakes having little vegetation.

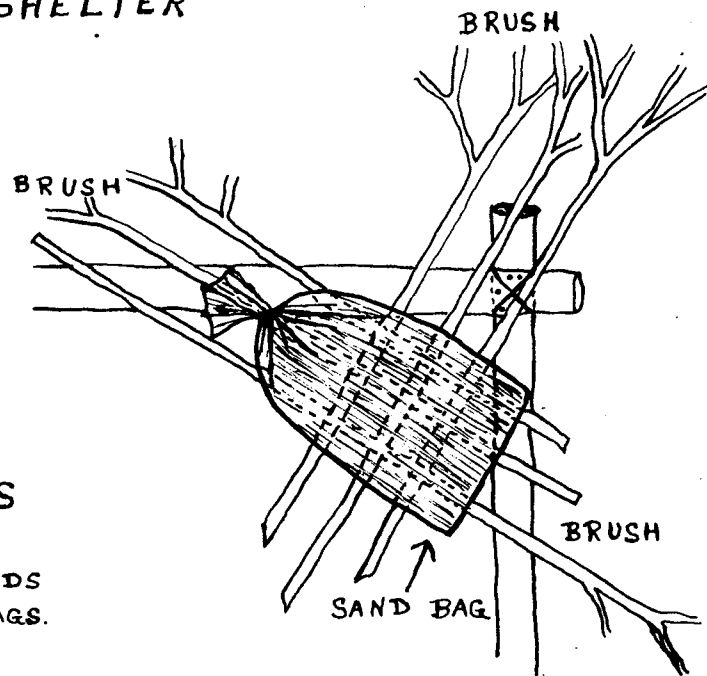
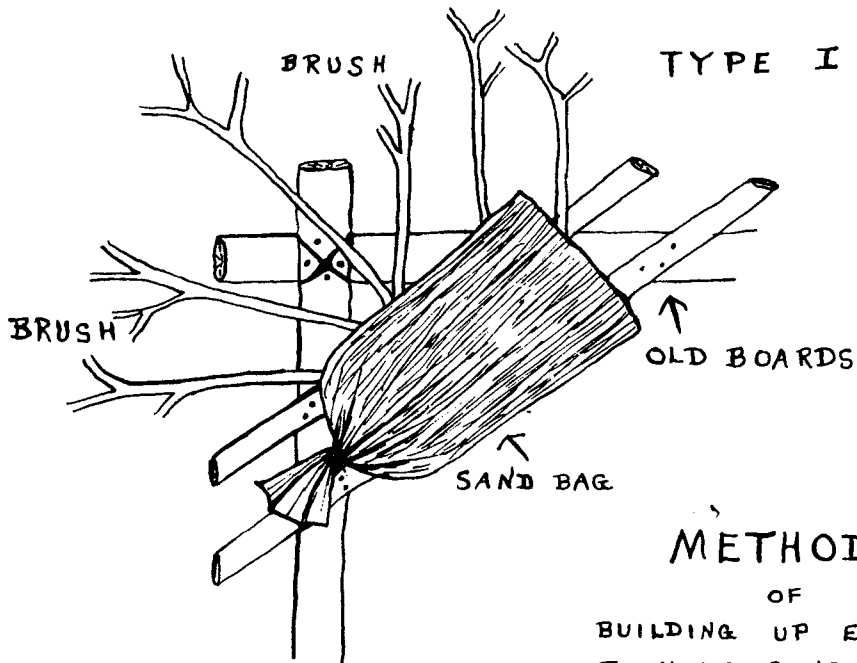
All work was carefully marked so that it can be checked from year to year and so that any changes may be noted.

Prior to the summer of 1932 almost the entire time was spent in survey work. During the last year it was felt that more experimental work in the improvements should be carried out. As a result part of the time was spent in lake investigation and a part of it in construction of various devices and in vegetation studies. Diagrams of several devices are appended to this report.

The total acreage of the lakes investigated during the summer of 1932 is 874.5 acres. Twenty six lakes were investigated.

# BRUSH SHELTERS

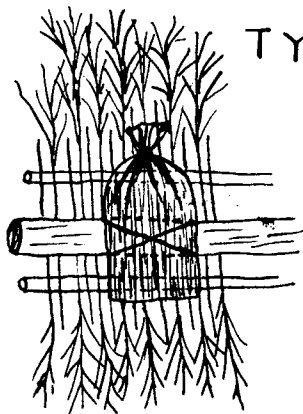
## TYPE I SHELTER



METHODS  
OF  
BUILDING UP ENDS  
TO HOLD SANDBAGS.

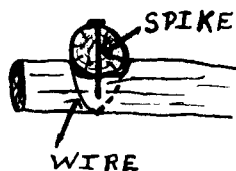
Calcium chloride bags can often be obtained from highway departments. These bags are ideal when filled with sand.

## TYPE II SHELTER



SAND BAG WIRED ON  
CROSS PIECE.

METHOD OF FASTENING  
FRAMES AT ENDS.

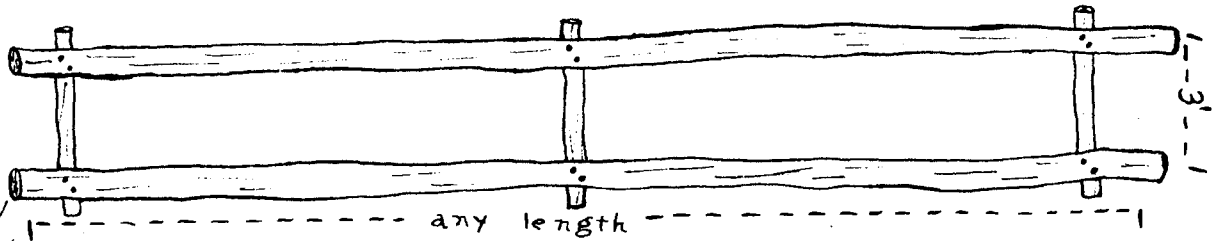


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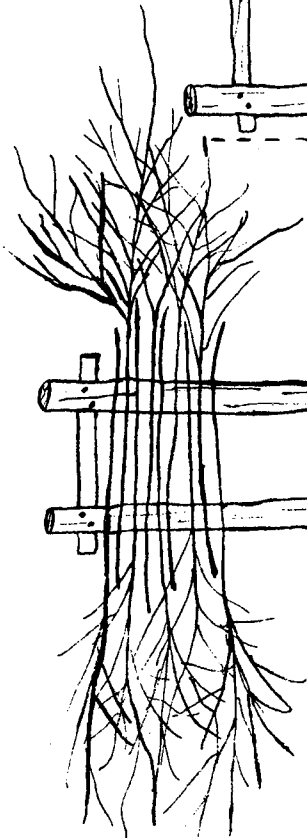
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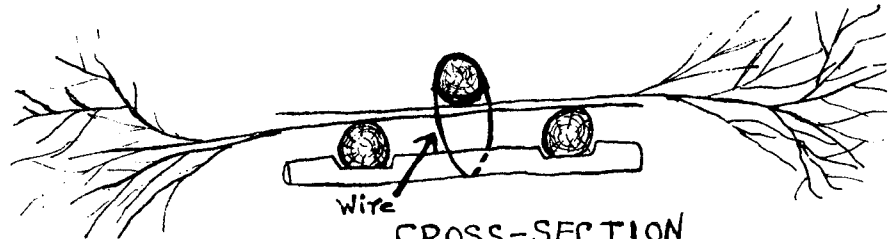
SIDE VIEW OF BASE



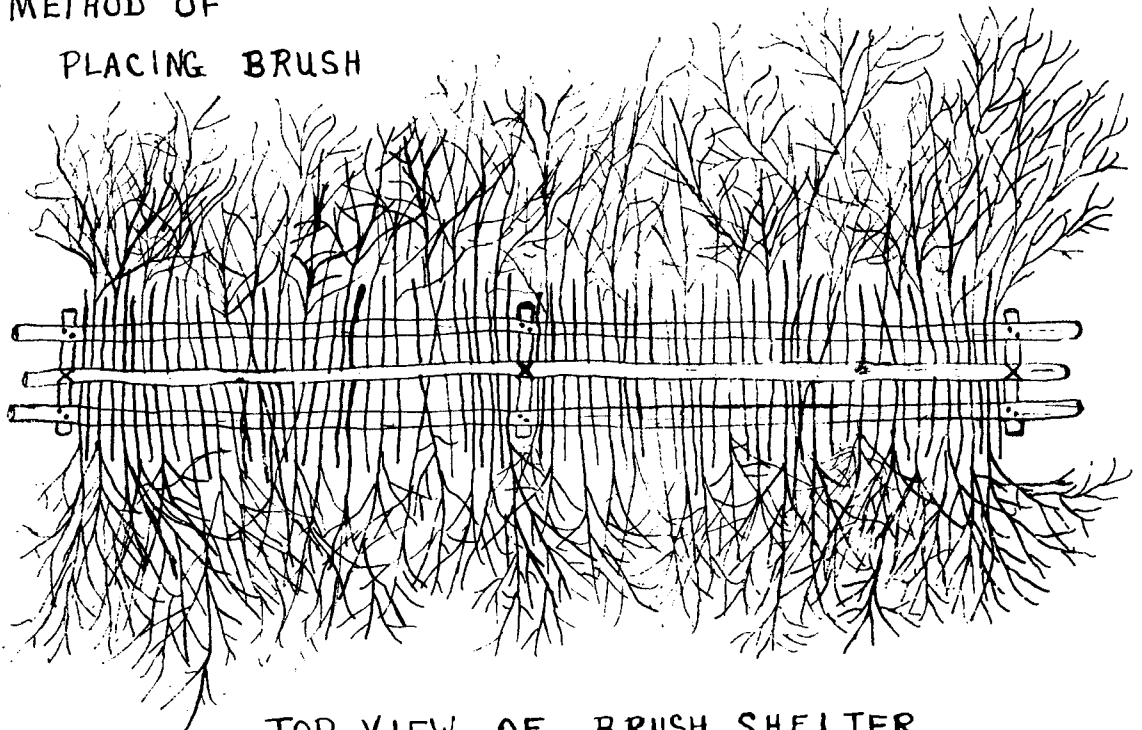
TOP VIEW OF BASE



METHOD OF  
PLACING BRUSH



CROSS-SECTION



TOP VIEW OF BRUSH SHELTER

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