scape and topography, and the size of the basic area. It should be at least 300 feet wide and may need to be 1,000 feet. Larger areas will require less buffer. Areas up to five acres in size may require up to ten acres in buffer. As can be seen, adequate planning will minimize the necessity of such costly buffer zones. On the other hand, access development may be impossible without buffers in populated shores.

Topography may not need to be a consideration on many sites, but may be of great importance on others. Many reservoirs in the south are located in sharp terrain, and many access points may need to be in precipitous areas. In these cases, two or three acres may be required to provide one acre of parking. Much of the land added to accommodate this feature, however, may serve for camping or picnicking, or even buffer. Probably no more than one or two acres on large areas could ever be considered waste. Additional land involved would, in most cases, be very small.

Access areas on any one reservoir should average ten acres in size. This does not include buffer strips. Larger and smaller areas should be interspersed according to anticipated use patterns.

Panel discussion on access areas presented at the fourteenth annual meeting of the Southern Division of the American Fisheries Society, Biloxi, Mississippi, October 26, 1960.

SURVEYS FOR FISHERMAN ACCESS IN GEORGIA

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The need and development of access areas on lakes and streams is a universal problem in fisheries. Surveys to provide information on fisherman access areas in existence, type of area, and potential use of these areas is basic for a state program of actual access area construction. In order to obtain maximum usage for access area construction, they should be located strategically to provide the widest possible range of use. The access survey can provide this basic data.

In some instances where fisherman demand for access areas is high, enough locations may already be present to satisfy this demand. In other instances, fisherman demand may well be justified for access to utilize potential recreational areas of lakes and streams. In Georgia, we have experienced both of these situations. The answer to inquires from sportsmen regarding access may be found through survey data on hand outlining the numbers of access areas and type available to the public.

Information on access already in existence, if made available to the public, will help to solve local problems and increase utilization of potential fisheries. In some instances potential areas already in existence, but not well known, are by-passed for other locations where good fishermen access is publicized. Proper usage may partly be a problem of information dissemination.

A program for distribution of available access area information, with accurate map locations and enumerated facilities, provide a vital role in maximum utilization of the fishery. Such information on lakes and streams with public use areas will be a real guide to the fishermen and help direct usage to these locations.

Accurate and useable publications of available access areas resulting from fisheries surveys may be as important as actual construction, and certainly form a solid basis for access building programs of the future.

Fisheries Survey

A state wide fisheries survey initiated by the Georgia Game and Fish Commission in 1956 has recently been completed. Included in the survey along with standard biological and chemical investigations and fish distribution, was a specific objective to obtain information on fish camps, access areas, and boat launching facilities; and to provide accurate mapping locations of these fisherman facilities.

Surveys for access became an integral part of our survey. Many difficulties were encountered in classification of areas once they were located, and map locations were often complex. This phase soon developed into one of the more time consuming aspects of the entire survey. Individual inspection of each area using standard forms for recording information on the area was ultimately adapted as the most satisfactory method.

Survey for Access

Public access areas were surveyed and classified on approximately 2,818 miles of streams and 15 major reservoirs. This included all of the "big water" in the state. The survey was exclusive of tributary streams and reservoir areas under 500 acres in size. Trout streams were not surveyed as such, since this information is generally well known.

Streams were driven out individually by counties and pertinent information was recorded for each access area located. In most cases local wildlife rangers assisted in location of access areas in their work districts and helped with classification. Areas were marked on county maps and numbered. The completed data form was filed, cross referenced to the map number, for complete descriptions of the areas. Photographs were used in some instances.

All lakes were surveyed using the best maps available in conjunction with county maps. Since flooded roads provide a source of access on reservoirs, all roads were driven out to determine if they were used for boat launching.

Access roads near the lakes were also driven out and classified to determine if they could be used for bank fishermen.

Information on type of road, year around usage, launching ramp, stream fluctuation, and degree of use were recorded for each area. After the information was collected, the areas were classified into general categories. The form used for access areas was found to be adequate for classifications and is attached to this report as Figure I.

FIGURE I

FISHERMAN ACCESS DATA FORM

Name of Stream_____ C. No._____ County_____
Recorder_____ Date_____ Nearest Town_____
Specific Location_____

Access Road (dirt, clay, sand, gravel, hard surface)_____
Is Access Road Used By Fishermen?_____ Is Access Road Traveled (by cars, trucks, both?)_____ Does Access Road Go To Water So That Boat May Be Put In Water Without Carry Of More Than 50 Feet?_____ If Not, Estimate Distance Of Carry_____
Is Boat Landing Present?_____
Boat Landing (dirt, clay, sand, gravel, hard surface)_____
Does Landing Slope Into Water?_____ Can Boat Trailer Be Backed Into Water So That Boat Will Float Free?_____ If Landing Does Not Slope Into Water, How High Is Top Of Bank From Water During Normal Flow?_____
Amount of Fluctuation In Stream Levels Because Of Dams Or Other Causes_____
How Does This Affect The Boat Landing?_____

Amount Of Public Usage_____

Additional Information_____

Fishing camps were surveyed independently of access areas since additional information was necessary. Part of the information recorded includes rental of boats and motors, cabin facilities, guides, and months open during the year. The complete form is attached as Figure II. This form was used on both lakes and streams for classification of the various areas.

Publication of Results

Information on access areas must be made available to the sportsman in a useable form to be of value. In most cases, the publication of results is probably the most important phase of an access survey. If the information is not clear regarding locations, facilities, and travel routes an access survey has little value.

On the other hand, a publication fulfilling these requirements must necessarily be quite long and expensive. The publication should have maps with keys to locations on a scale large enough to be readable. Areas should be classified clearly with a maximum amount of useable information to plan fishing trips.

Adequate and useable maps that will show all roads are difficult to find. Publication of access data in Georgia involved considerable art work on maps using individual county maps as a basis to include access roads that do not show on regular maps. This applied to both lake and stream surveys.

FIGURE II

FISHING CAMP DATA

Stream or Lake_____ County_____
Name of Camp_____ C. No._____
Recorder_____ Date_____
Nearest Town_____ Specific Location_____

Access Road to Camp (dirt, clay, sand, gravel, hard surface)_____

Access Road All-Weather?_____ Launching Ramp Present?_____
Launching Ramp (dirt, clay, sand, gravel, hard surface)_____

No. of Boats for Rent_____ No. of Motors for Rent_____ Gas and Oil Available?_____ Bait for Sale?_____ What Kinds?_____

Guide Service Available?_____ No. of Cabins Available?_____
Electricity in Cabins?_____ Indoor Cooking Facilities Available?_____
Groceries Available?_____ Outdoor Cooking and Picnic Facilities Available?_____ Camp Open All Year?_____ If Not, Specify Months Closed_____
Additional Information_____

In order to include as much of the data collected on the access survey as possible, access was broken down into four categories included in the key with access maps. These are:

1. Fish Camp, with boat rentals, fisherman facilities and launching ramps.
2. Hard surface boat launching ramp.
3. Other boat launching ramps.
4. Public access to water, no launching ramp.

Roads were subsequently broken down into hard surface, paved roads, improved roads, and unimproved roads using standard map symbols.

The publication covering access surveys for the Georgia Game and Fish Commission is magazine size 8½ by 11 inches with individual maps for 15 lakes and 20 major warm water streams. The four access categories, and all useable roads listed above are included for lakes and streams. This publication is a composite of all available access to public fishing waters in Georgia and shows a total of 772 public access areas in the state. Of the total, 424 are located on major streams and 348 on the larger reservoirs.

Conclusion

It should be noted that the access survey is not necessarily a substitute for a building program. It does without question, provide the necessary basis for a building program and enables administrators to plan areas in sections where access is most critical.

Secondly, the access survey permits a distribution of fishing pressure through information on areas otherwise not well known and possibly underfished.

In conclusion, and perhaps of greatest importance, good publications on state wide access to public fishing waters provides a valuable service to a wide range of sportsmen. Maximum usage of public fishing waters already in existence is a possible requisite to expensive building programs, and leaves potential funds available for additional development and research in new areas.

SOME EXAMPLES OF PLANS AND SPECIFICATIONS FOR CONSTRUCTION OF BOAT LAUNCHING RAMPS

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The need for free access to public waters is recognized by administrators of various State, Federal and private agencies throughout the United States. Programs to provide access to these waters have mushroomed in popularity. These include the development of small waterfront areas with the minimum construction and maintenance of an access road, parking lot and boat launching ramp. More elaborate developments include picnicking, camping and sanitation facilities. The value of these programs to fisheries management should not be overlooked. They provide excellent opportunities to open up inaccessable waters and better distribute fishing pressure. Headwater areas on many large reservoirs, where conditions often exist unfavorable to commercial development, are examples where access development can contribute much to the harvest. To insure the most judicious use of available funds, access area development programs should follow preliminary surveys designed to determine not only present needs but projected future needs of the ever-increasing number of fishermen.

Plans and specifications for roads and parking lots can be obtained from State Highway Departments. It is unusual, however, to have plans and specifications for boat launching ramps readily available. Furthermore, many of the agencies responsible for access area development do not employ qualified engineers experienced in the design of structures such as launching ramps. Personnel with little or no experience in engineering design and construction work often are placed in charge of access programs. When this occurs, one of the most difficult problems encountered is designing and installing economical and suitable boat launching ramps. In this paper several types of ramps are discussed. Examples of plans and specifications are presented. These may be modified for individual situations.

The most popular ramp presently being installed is constructed of pre-fabricated concrete logs (Figure 1). Such ramps can be placed by inexperienced personnel. They give satisfactory service for an indefinite period. An added feature is the ease with which they can be taken up and relocated. Maintenance and repairs usually are limited to the replacement of deteriorated logs. These logs are constructed of standard 3,000-pound-per-square-inch concrete 10'x16"x4" in size. Reinforcement is provided by three 1/2 inch new intermediate grade, billet steel reinforcing rods, equally spaced. Tied perpendicular to these rods are two ½"x1½"x19" flat steel straps extending through the logs, five feet apart (Figure 2). These straps have ⅝" holes punched or drilled

[1] The extensive aid received from Billy F. Horton, Regional Engineer, Bureau of Sport Fisheries and Wildlife, and Francis J. Guscio, South Atlantic Engineering Division, Corps of Engineers, in the preparation of this paper is gratefully acknowledged. Ideas illustrated in Figures 1 and 4 were derived, in part, from plans of the Alabama Department of Conservation and the Florida Game and Freshwater Fish Commission.