

BOAT COUNTS AND BOATING RECREATION CAPACITY INVENTORY

Types of Inventory

There are two types of inventory of boats normally carried out on lakes. Each one has its own purpose and utility, but the boating recreation capacity inventory provides more data. A boat count is the inventory of the total number of boats on a water body. Boating recreation capacity inventory gathers data on the number of boats being used during a time period.

Once the number of boats is determined, an estimate of recreational capacity can be developed. Recreation Capacity is the concept that lakes used by the boating public have certain minimum requirements for safe operation and a satisfactory recreational experience.

Boat Count Protocol

A boat count is an inventory of all boats on a body of water. These have been done almost annually by the Lake George Park Commission (LGPC) to gather data on the number of boats actually on the lake. These counts were started prior to the LGPC having a sticker system that authorizes boats to be on the lake.

A boat count inventories all boats tied up to docks, shoreline, pulled up on shore, or on trailers. The best time to do a boat count is on a rainy day or early morning.

On small lakes, it is possible for a single team of a boat operator and enumerator to do the count. The inventory team then boats around the lake slowly and counts all boats. If there are boathouses, you may have to look under the doors to see if anything is in the boathouse.

The most important boats to count are powerboats of all types. The following are the frequently used classification of powerboats:

Length	HP
1-15 ft. outboard	2-20 (pull cord start, tiller handle)
15-20 outboard	20-50 hp (small fishing boats, pontoon)
20+	50+ hp (ski boats, bow riders)
15-20 inboard	100 hp
20+inboard	100+hp
20+inboard or outboard	100+hp (cabin cruiser)
25+	(large cabin cruiser)
Personal Water Craft	

Depending on the lake, all pontoon boats may be counted by a single group. Other special categories can be jet boats (two-four seat high maneuverability boats) and electric boats.

Sailboats can be counted in three groups.

Length	HP
10-15	Sunfish-sailfish (wet seats)
15+	Harpoon, widgeon-k, c, etc. (dry seats)
20+	Cabin cruiser, boats, all other

Non-power
Kayaks
Rowboats
Canoes
Paddleboats

A data sheet should record the date, weather, time of observation, and number of observers, along with the types of boats.

Once a boat count is obtained, lake use capacity can be evaluated. Normally, the maximum number of boats in use on a lake is between 25-30% of the boats found during a comprehensive boat inventory. This can be converted to a very general capacity by using a recreational space allocation of 10 acres per boat.

On a 1,000 acre lake, the recreational boat capacity is 100 boats (1,000 acres ÷ 10 acres/boat = 100 boats). If the boat inventory found 150 power boats, the expected number of boats in use would be 37-45 at peak. These boats would need 370-450 acres of space for recreation. A 1,000 acre lake should have sufficient space for this amount of boating activity unless there are large navigation hazards, large areas of shallow water, or extensive areas of aquatic plants.

Boating Recreational Capacity Survey

A boating recreation capacity survey inventories boats in use on a water body. The observations to be made can include the recording of data related to how boaters are using the lake. Boater use patterns change with activity and it can be related to a space allocation for each type of use. Boating use also changes during the hours of the day. To inventory boating use requires observation during various periods of the day.

Normally, boat counts are performed early in the morning, mid-day, late afternoon, and evening. The highest number of boats are frequently observed in late morning and early afternoon. Weather is also important and it should be favorable to boating activity. Weather should be clear and sunny.

On a small lake, it may be feasible to observe all boating activity from a single point. If it is not possible to observe boating activity from a single point, then multiple observers will be required.

Alternatively, if it is a small area (a bay) that can't be seen, then it may not be counted, however, since boats are active, you may be able to see boats come in and out of the bay or from behind the peninsula.

The best times for counts are:

7 or 8AM	Fishing
11AM	Fishing, Waterskiing
1PM	Boating, Waterskiing
3PM	Boating, Waterskiing
7PM	Boating

At each designated time, a person counting boats will count boats and describe activities. A boat sitting still and fishing is fishing; a fishing boat moving to a new location is boating. The best practice is to count for 5-15 min. either the entire lake or designated area. If during the counting period, 3 complete sets of observation are accomplished and 45 power boats are observed, then the number of boats using the lake is 15 ($45 \div 3 = 15$). The boating activities will be recorded on the data sheet. At the same time, separate counts of non-power boats and sailboats would be taken.

Carrying Capacity Standards

Carrying capacity is usually thought of as the limit for a system to withstand certain uses or impacts. Depending on the type of carrying capacity to be evaluated, different types of impacts would be measured. The physical carrying capacity establishes the number of boats that can physically fit into an area. The shoreland facilities are analyzed to determine the facility carrying capacity and the experience and interaction with other users establish the social carrying capacity.

Standards for recreational uses can be derived from a combination of the above components. Basically, standards associated with levels of use are often the product of value judgments and therefore are not confirmable or deniable through objective means. Differences in land and social values or ecological tolerance may demand lower intensity use or allow a greater intensity of use in some areas of the lake.

A large range of recreational carrying capacity standards have been developed by different agencies across the United States. Ohio utilizes a standard of 7.5 acres of lake surface for each operating motor boat, Wisconsin 8 to 20 acres, and Vermont 10 to 20 acres depending on the boating activity. New York State Office of Parks and Recreation (NYSOPR) recommends a standard of between 6 to 8 acres per boat for power and sail boating in its Statewide Comprehensive Recreational Plan of 1986. More recent studies (Mallets Bay on Lake Champlain, 1989) indicate that professional recreational planners are increasing the range of acres per boat to between 15 to 40 acres. The more recent version of NYSOPR has the following space requirements for boats:

Sailboat	6-8 acres	Powerboats	6-8 acres
Waterskiing	15-20 acres	Fishing Anchor	0.3-0.5 acres
Rowboats	1 acre	Fishing Trolling	1 acre
Canoes & kayaks	1acre		

Using the above space allocation for individual types of boats, the field data on the actual boats in use is evaluated.

Boating Activity at 1PM on July 5th

<i>Boat Types/Activity</i>	<i>#</i>	<i>Acres/Activity</i>	<i>Lake Recreation Capacity</i>
Waterskiing	4	20	80
PWC	4	20	80
Kayak	2	1	2
Sailboats	5	8	40
Fishing Anchor	1	0.5	0.5
			202.5

If the lake has sufficient open water areas to support the 202.5 acres of boating activity, then there is sufficient area to support the use. This capacity estimate is for an area requirement which can be easily measured. Satisfaction with the recreation may be very different for individuals using the lake. For some individuals, the passage of a single PWC on a 300 acre lake would compromise the recreational experience.

Each time period that is counted should be evaluated separately since use and capacity is measured over a specific time period. Recreational activity changes on the lake during the day, therefore, the recreational capacity will change. A lake has a lot more room for fisherman sitting still than the space necessary for six waterskiers.

Lake _____ Date _____
 Weather _____
 Observation Time _____
 Observer _____
 Observer Location _____
 Area of Observation _____

Boat Type/Size		Boating	Fishing	Waterskiing or PWC	Anchor
Non-power					
Rowboat					
Canoe					
Kayak					
Paddle					
Totals					
Sailboats					
10-15 ft Sunfish - wetseat					
15+ ft Harpoon Widgeon - dryseat					
20+ ft Cabin					
Totals					
Power Boats					
Length	HP				
1-15	2-20				
15-20	20-50				
20+	50+				
15-20	Inboard				
20+	Inboard				
20+	Inboard or Outboard Cruiser				
25+	Inboard Cruiser				
	Personal Water Craft				
Totals					

Non-power boats # _____ 3 1 ac = _____ acres
 Waterskiing boats # _____ 3 15-20 ac* = _____ acres
 Recreational boats # _____ 3 6-8 ac* = _____ acres
 Fishing boats sitting still # _____ 3 0.3-0.5 ac* = _____ acres
 Fishing boats trolling # _____ 3 1 ac = _____ acres
Total _____ acres

 *Choose the appropriate size of area per boat.