

Appendix C

WALROS Classification of Beaver Lake

This page intentionally left blank.

Section C.1

Introduction

The Water and Land Recreation Opportunity Spectrum (WALROS) is a tool developed by the U.S. Bureau of Reclamation (Reclamation) to understand the type and location of six types of water-related recreation opportunities, otherwise known as WALROS classes. The six WALROS classes range across a spectrum of urban, suburban, rural developed, rural natural, semiprimitive, and primitive recreation opportunities. A particular “package” of activities, setting attributes, experiences, and benefits, defines each WALROS class. Much of the information contained within this packet was taken from Reclamation’s WALROS User’s Handbook, Second Edition, September 2011.

WALROS enables an inventory of mapping of the six recreation opportunities by using expert opinion. CDM Smith is looking to the Beaver Lake Project Office staff to assess the physical, managerial, and social attributes of the lake setting. Table C-1.1 illustrates the attributes that differentiate the six WALROS classes.

Table C-1.1 WALROS Class Attributes

Physical Attributes	Social Attributes	Managerial Attributes
<ul style="list-style-type: none">▪ Degree of major development▪ Distance from major development▪ Degree of natural resource modification▪ Sense of closeness to a community▪ Degree that natural ambiance dominates the area	<ul style="list-style-type: none">▪ Degree of visitor preference▪ Degree of visitor concentration▪ Degree of recreation diversity▪ Degree of solitude and remoteness▪ Degree of nonrecreational activity	<ul style="list-style-type: none">▪ Degree of management structures▪ Distance to developed public access facilities▪ Distance to developed public access facilities▪ Frequency of seeing management personnel

The overarching goal of WALROS is to provide planners and managers with a framework and procedure for making better decisions in order to conserve a spectrum of high-quality and diverse water and land recreation opportunities. WALROS improves our understanding of the complexity of outdoor recreation management, strengthens sound professional judgment, and enables a manager to make better and more defensible decisions.

C.1.1 Reasonable Flat-Water Recreation Boating Coefficients

To help managers make better and more defensible boating capacity decisions, a set of boating capacity coefficients has been developed based on collaborative expert opinion, professional experience, published articles and plans, sound professional judgment, and the rule of reasonableness. The boating coefficients range from 1 to 3,200 acres per boat depending on the WALROS classification. For each of the six WALROS classifications on the spectrum from urban to primitive, there are six integrated packages containing appropriate settings, activities, and experiences. Figure C-1.1 illustrates the WALROS system for classifying the components of a

recreation opportunity. Each of these components will be evaluated for the Beaver Lake region to determine the appropriate WALROS classification for Beaver Lake. The results of this analysis for the Beaver Lake Recreational Carrying Capacity will be one component in the characterization of Beaver Lake.

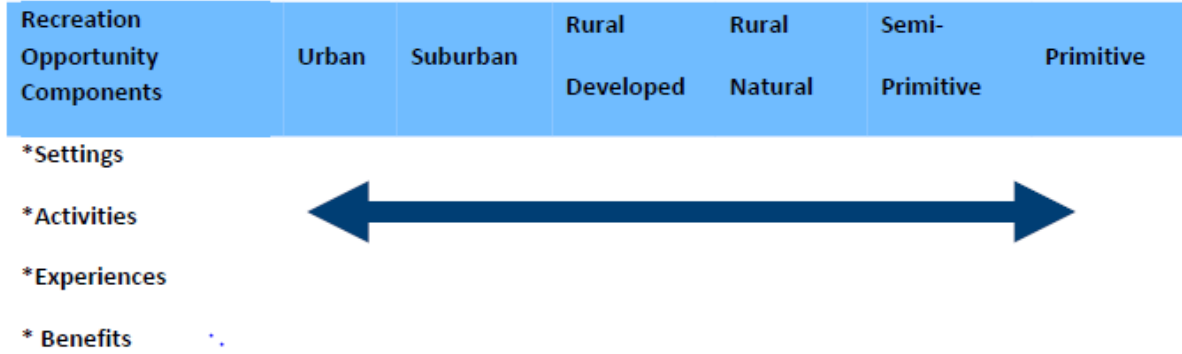


Figure C-1.1
WALROS Recreation Opportunity Categories

Figures C-1.2 through C-1.7 show examples of boating recreation activities and setting attributes by WALROS class as provided by the Bureau of Reclamation.



Figure C-1.2
Examples of the Urban Classification



Figure C-1.3
Examples of the Suburban Classification



Figure C-1.4
Examples of the Rural Developed Classification



Figure C-1.5
Examples of the Rural Natural Classification



Figure C-1.6
Examples of the Semiprimitive Classification



Figure C-1.7
Examples of the Primitive Classification

Section C.2

Beaver Lake Inventory

This inventory protocol for Beaver Lake is intended to be completed by the Beaver Lake Project Office staff. As discussed within Section C.1, the inventory is broken down by physical, social, and managerial attributes that affect the quality or nature of a recreation experience. This assessment will be completed for each of the Beaver Lake study zones, as shown in Figure C-2.1. The time period under consideration in this assessment should be weekends during peak boating season.

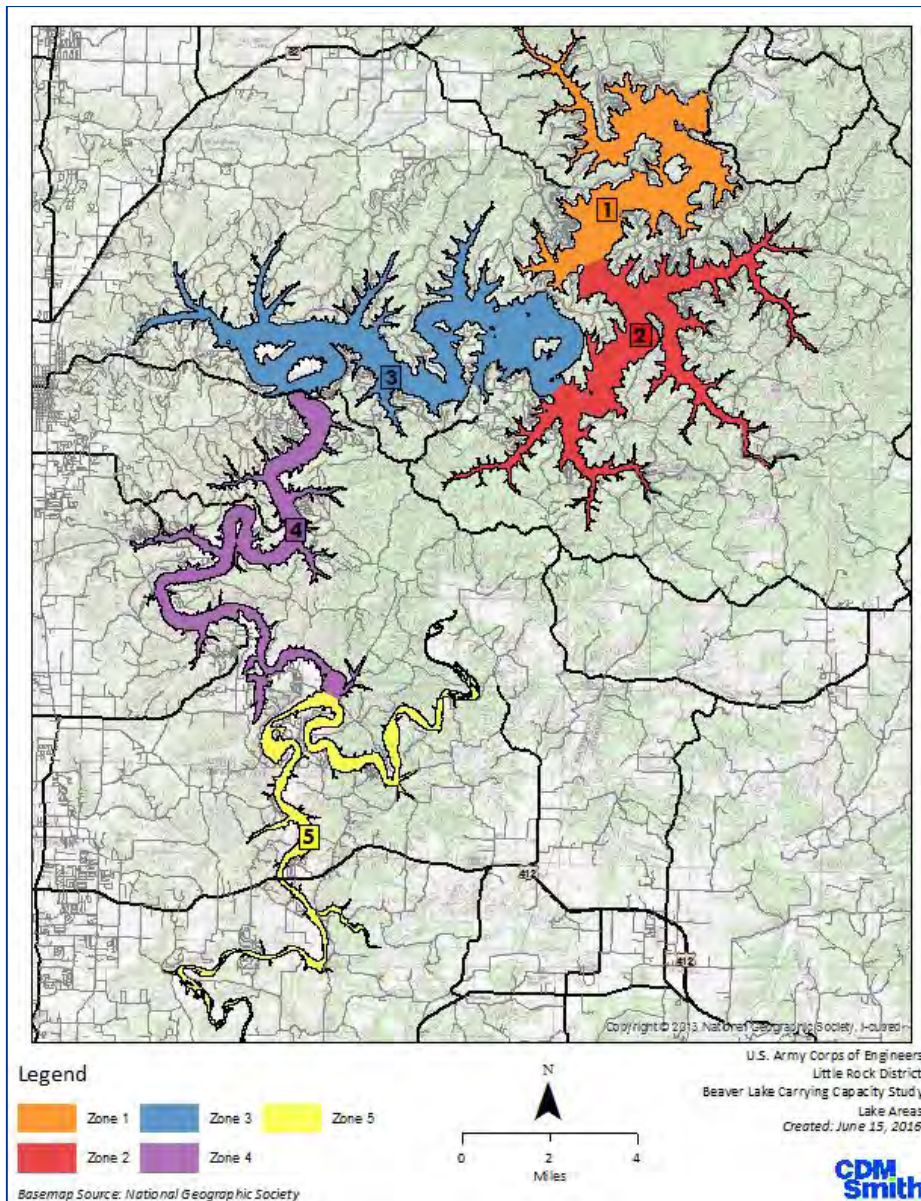


Figure C-2.1
Beaver Lake Study Zones

Within each attribute section, some questions are aimed at estimating distances to facilities and services. In order to assist with this portion of the assessment, a desktop analysis was completed using GIS. Tables C-2.1 through C-2.3 provide a summary of the information collected during this analysis.

Table C-2.1 Results of Desktop Analysis Regarding Distances to Physical Facilities and Services

Physical Inventory												
Lake Study Zone	Dams			Bridges			Marinas			Towns		
	Furthest Point (mi)	Closest Point (mi)	Average (mi)	Furthest Point (mi)	Closest Point (mi)	Average (mi)	Furthest Point (mi)	Closest Point (mi)	Average (mi)	Furthest Point (mi)	Closest Point (mi)	Average (mi)
1	5.2	0	2.6	11.5	6.5	9	3	0	1.5	11.5	5.5	8.5
2	9.2	4	6.6	11.3	6	8.7	6.3	1	3.6	10.5	5.5	8
3	12.2	5.5	8.9	6	0	3	3.4	0	1.7	10.5	2	6.3
4	15.8	11.3	13.3	7	0	3.5	4.3	0	2.2	6	2.2	4.1
5	23.5	15.8	19.6	5	0	2.5	7	0	3.5	6.5	2	4.3

Table C-2.2 Results of Desktop Analysis Regarding Distances to Visitor Services

Social Inventory									
Lake Study Zone	Project Office			Security/Safety			Comfort/Convenience		
	Furthest Point (mi)	Closest Point (mi)	Average (mi)	Furthest Point (mi)	Closest Point (mi)	Average (mi)	Furthest Point (mi)	Closest Point (mi)	Average (mi)
1	16	11	13.5	11.5	5.5	8.5	11.5	5.5	8.5
2	16.5	11.5	14	10.5	5.5	8	10.5	5.5	8
3	11.5	2	6.8	10.5	2	6.3	10.5	2	6.3
4	10.5	5	7.8	6	2.2	4.1	6	2.2	4.1
5	16	10.5	13.25	6.5	2	4.3	6.5	2	4.3

Table C-2.3 Results of Desktop Analysis Regarding Distances to Management Facilities

Management Inventory						
Lake Study Zone	Developed Recreation Facilities			Developed Public Access Facilities		
	Furthest Point (mi)	Closest Point (mi)	Average (mi)	Furthest Point (mi)	Closest Point (mi)	Average (mi)
1	2	0	1	2	0	1
2	5	0	2.5	5	0	2.5
3	1	0	0.5	1	0	0.5
4	3	0	1.5	3	0	1.5
5	2.5	0	1.3	2.5	0	1.3

The following pages contain the inventory worksheets taken directly from the WALROS Handbook (2011) in Table C-2.4 through C-2.6. Please complete each attribute section for each of the five lake study zones. Rows are provided under each inventory question with lake study zones. Please circle the lake study zone which applies to each category selected.

Table C-2.4 Physical Inventory Protocol

Physical Inventory Protocol Sheet						
Degree of development – Degree that dams, major bridges, marinas, parks, resorts, highways, or other municipal, residential, industrial, or commercial structures are present.	Extensive, dominant, or a great deal 80-100%	Very prevalent or widespread 50-80%	Prevalent, common, or apparent 20-50%	Occasional, infrequent, or periodic 10-20%	Minor, little, or seldom 3-10%	Very minor, very little, or rare 0-3%
Lake Zone (circle)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Sense of closeness to a community – Degree that visitor’s sense that they are close to the sights, sounds, and smells typical of a community.	Extensive, dominant, or a great deal 80-100%	Very prevalent or widespread 50-80%	Prevalent, common, or apparent 20-50%	Occasional, infrequent, or periodic 10-20%	Minor, little, or seldom 3-10%	Very minor, very little, or rare 0-3%
Lake Zone (circle)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Degree of natural resource modification – Degree that the visitors are aware that human activity, technology, or development has altered the natural resources.	Extensive, dominant, or a great deal 80-100%	Very prevalent or widespread 50-80%	Prevalent, common, or apparent 20-50%	Occasional, infrequent, or periodic 10-20%	Minor, little, or seldom 3-10%	Very minor, very little, or rare 0-3%
Lake Zone (circle)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Distance from development on or adjacent to the water resource – Mileage from dams, major bridges, marinas, resorts, or other municipal, industrial, commercial, or residential areas.	Less than 0.5 miles	0.5-2 miles	2-5 miles	5-8 miles	8-10 miles	More than 10 miles
Lake Zone (circle)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Degree that natural ambiance dominates the area – Degree that there is a sense of tranquility and opportunity to see, hear, and smell nature.	Very minor, very little, or rare 0-3%	Minor, little, or seldom 3-10%	Occasional, infrequent, or periodic 10-20%	Prevalent, common, or apparent 20-50%	Very prevalent or widespread 50-80%	Extensive, dominant, or a great deal 80-100%
Lake Zone (circle)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

Table C-2.5 Social Inventory Protocol

Social Inventory Protocol Sheet						
Degree of visitor preference – Degree that the sights, sounds, and smells of other visitors, their equipment, their impacts, or litter are present.	Extensive, dominant, or a great deal 80-100%	Very prevalent or widespread 50-80%	Prevalent, common, or apparent 20-50%	Occasional, infrequent, or periodic 10-20%	Minor, little, or seldom 3-10%	Very minor, very little, or rare 0-3%
Lake Zone (circle)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Degree of visitor concentration – Degree that visitors congregate in the area (e.g., service area, launches, entrances, swim areas, trailheads, vistas, picnic or camp areas).	Extensive, dominant, or a great deal 80-100%	Very prevalent or widespread 50-80%	Prevalent, common, or apparent 20-50%	Occasional, infrequent, or periodic 10-20%	Minor, little, or seldom 3-10%	Very minor, very little, or rare 0-3%
Lake Zone (circle)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Degree of recreation diversity – Degree that there is a mixture of recreation activities being participated in or equipment being used.	Extensive, dominant, or a great deal 80-100%	Very prevalent or widespread 50-80%	Prevalent, common, or apparent 20-50%	Occasional, infrequent, or periodic 10-20%	Minor, little, or seldom 3-10%	Very minor, very little, or rare 0-3%
Lake Zone (circle)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Distance to visitor's services, security, safety, comforts, and conveniences.	Less than 0.5 miles	0.5-2 miles	2-5 miles	5-8 miles	8-10 miles	More than 10 miles
Lake Zone (circle)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Degree of solitude and remoteness – Degree that visitors view themselves as being alone and far away from civilization, in a wild and remote place	Very minor, very little, or rare 0-3%	Minor, little, or seldom 3-10%	Occasional, infrequent, or periodic 10-20%	Prevalent, common, or apparent 20-50%	Very prevalent or widespread 50-80%	Extensive, dominant, or a great deal 80-100%
Lake Zone (circle)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Degree non-recreational activity – Degree of sights, sounds, and smells of non-recreational activities (i.e., shipping, trains, factories, roads, houses, airplanes, mining, and farming).	Extensive, dominant, or a great deal 80-100%	Very prevalent or widespread 50-80%	Prevalent, common, or apparent 20-50%	Occasional, infrequent, or periodic 10-20%	Minor, little, or seldom 3-10%	Very minor, very little, or rare 0-3%
Lake Zone (circle)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

Table C-2.6 Management Inventory Protocol

Management Inventory Protocol Sheet						
Degree of management structures – Degree that management facilities, buildings, interpretive signage, equipment, buoys, mileage markers, entry stations, towers, security lighting, and administrative offices and compounds are present.	Extensive, dominant, or a great deal 80-100%	Very prevalent or widespread 50-80%	Prevalent, common, or apparent 20-50%	Occasional, infrequent, or periodic 10-20%	Minor, little, or seldom 3-10%	Very minor, very little, or rare 0-3%
Lake Zone (circle)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Distance to onsite developed recreation facilities and services – Mileage to developed campgrounds, restaurants, stores, medical services, marinas, resorts, pump stations, amphitheaters, picnic sites, play areas, telephone, showers, visitor centers, etc.	Less than 0.5 miles	0.5-2 miles	2-5 miles	5-8 miles	8-10 miles	More than 10 miles
Lake Zone (circle)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Distance from developed public access facilities – Mileage to developed and well-maintained access points such as parking lots, trailheads, entrances, boat launches, access roads, and other staging and launching areas.	Less than 0.5 miles	0.5-2 miles	2-5 miles	5-8 miles	8-10 miles	More than 10 miles
Lake Zone (circle)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Frequency of seeing management personnel – Likelihood of seeing management presence such as rangers, local sheriff, or police, entrance station staff, hosts, maintenance workers, lifeguards, marina operators, concessionaires, guides, and other people of authority.	Extensive, dominant, or a great deal 80-100%	Very prevalent or widespread 50-80%	Prevalent, common, or apparent 20-50%	Occasional, infrequent, or periodic 10-20%	Minor, little, or seldom 3-10%	Very minor, very little, or rare 0-3%
Lake Zone (circle)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5