

Appendix 3.2-1

Recreation Survey Forms

YALE LAKE RECREATION SURVEY

**Yale Hydroelectric Project
FERC Project No. 2071**

Date: _____

Location: _____

Pacific Power is surveying users of its campground and day-use facilities as part of project relicensing. Please complete this survey today and deposit it in the survey collection box located nearby. Mark all responses that apply. If you are unable to complete the survey at this time, you may also mail the survey form to the following address: EDAW, Inc., 1505 Western Ave. Suite 601, Seattle, WA 98101. *Thank you for your participation.*

1. Which of the following activities did you participate in during your stay at Yale Lake? (CIRCLE ALL NUMBERS THAT APPLY)

1. RV and/or tent camping
2. Sightseeing
3. Picnicking
4. Fishing
5. Hunting
6. Powerboating
7. Water skiing
8. Sailing
9. Jet skiing/personal watercraft use
10. Kayaking/canoeing/rowing/rafting/tubing
11. Sunbathing/swimming
12. Mountain/road biking
13. Hiking/walking
14. Backpacking
15. Nature study/photography
16. Caving/rock climbing
17. Horseback riding
18. Rest stop visit
19. Other (SPECIFY) _____

2. What was the main activity you participated in during your stay at Yale Lake? (INDICATE ONLY ONE NUMBER FROM THE ABOVE LIST) _____

3. Overall, how would you rate your satisfaction with your stay at Yale Lake? (CIRCLE ONE NUMBER)

- | | | | | | |
|------|------|------|-----------|-----------|---------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Poor | Fair | Good | Very Good | Excellent | Perfect |

4. Did you feel crowded during your stay at Yale Lake? (CIRCLE ONE NUMBER)

- | | | | | | | |
|--------------------|------------------|---|--------------------|---|-------------------|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Not at all Crowded | Slightly Crowded | | Moderately Crowded | | Extremely Crowded | |

5. During your visit to Yale Lake, have you had any conflicts or complaints regarding other visitors? (CIRCLE ONE NUMBER)

1. NO
2. YES Briefly state the nature of the conflict or complaint:

6. Overall, how did you find the condition of the Yale Lake recreation facilities? (CIRCLE ONE NUMBER)

- | | | | | | |
|------|------|------|-----------|-----------|---------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Poor | Fair | Good | Very Good | Excellent | Perfect |

7. Are there any additional recreation facilities you would like to see provided at Yale Lake? (LIST)

8. During your visit to the Lewis River, are you planning to visit any recreation areas other than Yale Lake? (CIRCLE ONE NUMBER)

1. NO (SKIP TO NUMBER 10)
2. YES

9. If you responded YES to #8, what were your primary destinations, including Yale Lake? (CIRCLE ONE OR MORE NUMBERS)

1. Mount St. Helens Nat. Vol. Mon./Ape Cave
2. Gifford Pinchot National Forest
3. Yale Lake
4. Lake Merwin
5. Swift Reservoir
6. Other (SPECIFY) _____

10. How often do you annually visit this or other Yale Lake campgrounds? (CIRCLE ONE NUMBER)

1. 1 to 5 times per year
2. 6 to 10 times per year
3. Over 10 times per year

CAMPING

11. If you were camping in a campground at Yale Lake during your visit, please respond to the following questions. If not, please skip to Number 17, Fishing.

During your stay at Yale Lake, was it difficult to find an available campsite? (CIRCLE ONE NUMBER)

1. No
2. Somewhat
3. Yes

12. Would you like to see the existing holiday and group campsite reservation system expanded at Yale Lake? (CIRCLE ONE NUMBER)

1. No
2. Maybe
3. Yes

13. When you choose a campsite, how important are the following? (CIRCLE ONE NUMBER FOR EACH ITEM)

	Not at all		Very		
	Important		Important		
	1	2	3	4	5
Distance from boat ramp	1	2	3	4	5
Distance between campsites	1	2	3	4	5
Camping within view of the lake	1	2	3	4	5
Quality of the surrounding scenery	1	2	3	4	5
Noise in the campground	1	2	3	4	5
Picnic facilities	1	2	3	4	5
Quality of restrooms and showers	1	2	3	4	5
Availability of drinking water	1	2	3	4	5
Availability of electrical hookups	1	2	3	4	5
Convenient garbage cans and pickup	1	2	3	4	5
Adequate RV parking and pull-through space	1	2	3	4	5
Distance to swimming area	1	2	3	4	5
Availability of sewage dump station	1	2	3	4	5
Other: (SPECIFY) _____	1	2	3	4	5

14. How do you feel about the camping fee at Yale Lake? (CIRCLE ONE NUMBER)

1. Okay
2. Too high
3. Too low

15. When boaters put in or take out their boats at this campground, did it bother you? (CIRCLE ONE NUMBER)

1. No
2. Yes
3. Slightly

16. Are there any improvements you would like to see at this Yale Lake campground? (CIRCLE ONE NUMBER)

1. No
2. Yes (PLEASE SPECIFY)

FISHING

17. If you were fishing at Yale Lake during your visit, please respond to the following questions. If not, please skip to Number 21, Boating/Jet Skiing.

Did the lake water level affect your fishing during your stay at Yale Lake? (CIRCLE ONE NUMBER)

1. No (SKIP TO NUMBER 19)
2. Yes

18. If yes, please describe:

19. How important were the following during your stay at Yale Lake? (CIRCLE ONE NUMBER FOR EACH ITEM)

	Not at all			Very	
	Important			Important	
	1	2	3	4	5
Landing fish	1	2	3	4	5
Seeing or hooking fish	1	2	3	4	5
Water level of lake	1	2	3	4	5
Proximity of other anglers	1	2	3	4	5
Other: _____	1	2	3	4	5

20. Were you fishing from the bank and/or from a boat during your stay at Yale Lake? (CIRCLE ONE NUMBER)

- 1. Bank or wading only
- 2. Boat only
- 3. Boat and bank

BOATING/JET SKIING

21. If you were boating or jet skiing at Yale Lake during your visit, please respond to the following questions. If not, please skip to Number 27, General Comments.

Did the lake water level cause any boating problems during your visit to Yale Lake? (CIRCLE ONE NUMBER)

- 1. No (SKIP TO NUMBER 23)
- 2. Yes

22. If yes, please describe:

23. How important were the following during your stay at Yale Lake? (CIRCLE ONE NUMBER FOR EACH ITEM)

	Not at all			Very	
	Important			Important	
Water level of lake	1	2	3	4	5
Number of other watercraft	1	2	3	4	5
Speed of other watercraft	1	2	3	4	5
Waiting time at boat ramp	1	2	3	4	5
Other: _____	1	2	3	4	5

24. At your launch ramp at Yale Lake, did you have to wait to put your watercraft into the water? (CIRCLE ONE NUMBER)

- 1. No
- 2. Yes If Yes, Approx. Minutes _____

25. During your visit, did you go ashore while you were out on Yale Lake? (CIRCLE ONE NUMBER)

- 1. No (SKIP TO NUMBER 27)
- 2. Yes

26. If you did go ashore, what activities did you participate in while ashore? (CIRCLE ALL NUMBERS THAT APPLY)

- 1. Picnicking
- 2. Fishing
- 3. Water skiing
- 4. Jet skiing/personal watercraft use
- 5. Swimming/sunbathing
- 6. Hiking/walking
- 7. Other (SPECIFY)

GENERAL COMMENTS

27. Please complete the following questions about your visit to Yale Lake.

How many persons were in your party during your visit to Yale Lake? (WRITE IN A NUMBER)

28. What is your postal/Zip Code for your primary residence? (WRITE IN YOUR 5-DIGIT ZIP CODE, ONE CODE ONLY)

29. If you desire, please provide additional comments about your visit to Yale Lake. (CONTINUE ON THE BACK SIDE IF NEEDED)

YALE LAKE RECREATION SURVEY
Distribution/Response Summary

EDAW

Date: _____

Surveyor: _____

Recreation Site	Distributed				Returned			
	AM	Mid	PM	TOTAL	AM	Mid	PM	TOTAL
Saddle Dam Campground								
Saddle Dam Ramp Parking								
Cougar Park								
Cougar Park Group Site								
Cougar Camp Campground								
Cougar Camp Ramp Parking								
Beaver Bay Campground								
Beaver Bay Group Site								
Beaver Bay Ramp Parking								
Yale Park								
TOTALS								

Overall Response Rate: _____

5/29/96

Appendix 4.2-1

*Recreation Development Suitability
Modeling and Ranking*

Yale Rec Modeling Rev 5

Coverage	Feature	Subject	Description	Opportunit	Constraints
landuse	POLY	LANDUSE	Land Use == PROJECT FACILITIES --	KO	KO
landuse	POLY	LANDUSE	Land Use == RESIDENTIAL --	KO	KO
landuse	POLY	LANDUSE	Land Use == WITHIN 2000 FT OF RESIDENTIAL --		3
land_mgt	POLY	LAND	Land Management == --		
land_mgt	POLY	LAND	Land Management == BLM --		3
land_mgt	POLY	LAND	Land Management == COWLITZ COUNTY --		3
land_mgt	POLY	LAND	Land Management == COWLITZ COUNTY PUD --		4
land_mgt	POLY	LAND	Land Management == DNR --		3
land_mgt	POLY	LAND	Land Management == DNR/SIOUXON FLATS --		4
land_mgt	POLY	LAND	Land Management == EXISTING CAMPGROUND --		
land_mgt	POLY	LAND	Land Management == EXISTING CLARK COUNTY PARKLAND --		5
land_mgt	POLY	LAND	Land Management == PACIFICORP --		5
land_mgt	POLY	LAND	Land Management == PACIFICORP/MONUMENT --		4
land_mgt	POLY	LAND	Land Management == PRIVATE --		4
land_mgt	POLY	LAND	Land Management == SWIFT NO. 2 POWERCANAL --	KO	KO
land_mgt	POLY	LAND	Land Management == USFS --		4
beaver	ARC	FEATURE	Beaver Dams == BEAVER DAM --		5
visuals	POLY	VIEW	Viewshed == --		
visuals	POLY	VIEW	Viewshed == POT. VIEW OF MT.ST.HELENS --		5
visuals	POLY	VIEW	Viewshed == POTENTIAL LAKE VIEW --		3
canal2	ARC	STREAM-NAME	Canal, Speelyai == SPEELYAI CANAL --		4
owl_pt	POINT	OWL	OWL_PT, Owl Observation == NSO OBSERVATION --		5
owlsites	POLY	OWLSITES	Owl Site Polys == WITHIN 100FT OF NSO --		5
phs_buf	POLY	DNR_SPECIES	PHS Point Buffers == PHS --		5
phs_pt	POINT	PHS_OBS	DNR PHS Observation == DNR PHS OBSERVATION --		3
phs_pl	POLY	PHS_PL	PHS Area == --		
phs_pl	POLY	PHS_PL	PHS Area == BALD EAGLE --		3
phs_pl	POLY	PHS_PL	PHS Area == ELK WINTER RANGE --		1
rapt_pt	POINT	RAPTOR	Raptor Nest Sites == RAPTOR NEST SITE --		5
rapt_buf	POLY	RAPT_BUF	Raptor Critical Area == RAPTOR BUFFER --		5
nearroad	POLY	NEARROAD	Road Buffer == FURTHER THAN 1000 FT OF ROAD --		
nearroad	POLY	NEARROAD	Road Buffer == WITHIN 1000 FT OF ROAD --		4
roads	ARC	ROAD	Road Location == ROAD --		4
nearcamp	POLY	NEARCAMP	Campground Proximity == Beyond 500 ft. of campground --		
nearcamp	POLY	NEARCAMP	Campground Proximity == Existing campground --		4
nearcamp	POLY	NEARCAMP	Campground Proximity == Within 500 ft of campground --		5

Yale Rec Modeling Rev 5

Coverage	Feature	Subject	Description	Opportunities	Constraints
erosion	POLY	SLOPE	Erosion Potential == --		
erosion	POLY	SLOPE	Erosion Potential == SLOPE GT 20 --		5
canal	POLY	CANAL	Canal and Proximity == SWIFT NO. 2 CANAL --		
canal	POLY	CANAL	Canal and Proximity == WITHIN 100 FT. OF SPEELYAI CAN --		3
canal	POLY	CANAL	Canal and Proximity == WITHIN 100 FT. OF SWIFT NO.2 C --		3
canal2	ARC	STREAM-NAME	Speelyai Canal, arc == SPEELYAI CANAL --		4
soil	POLY	SOILTYPE	Soil Properties == AVERAGE --	4	
soil	POLY	SOILTYPE	Soil Properties == DIFFICULT --		4
soil	POLY	SOILTYPE	Soil Properties == EXTREME --		5
soil	POLY	SOILTYPE	Soil Properties == FAVORABLE --	5	
soil	POLY	SOILTYPE	Soil Properties == NOT RATED --		
tline	ARC	TLINE	Transmission Line == TRANSMISSION LINE --		4
tlinebuf	POLY	NEARTLINE	Transmission Line Area == Within 100 ft of t-line --		2
slope	POLY	SLOPE_NAME	Slope Category == 0-9 --	5	
slope	POLY	SLOPE_NAME	Slope Category == 10-19 --		3
slope	POLY	SLOPE_NAME	Slope Category == 20 + --		5
nearlake	POLY	NEARLAKE	Lake Proximity == Greater than 1320 ft from lake --	1	
nearlake	POLY	NEARLAKE	Lake Proximity == Within 1320 ft. of lake --	2	
nearlake	POLY	NEARLAKE	Lake Proximity == Within 660 ft. of lake --	5	
nearlake	POLY	NEARLAKE	Lake Proximity == Lewis River	KO	KO
nearlake	POLY	NEARLAKE	Lake Proximity == Yale Reservoir --	KO	KO
nearstr	POLY	NEARSTR	Stream Buffer == FURTHER THAN 250 FT OF STREAM --		
nearstr	POLY	NEARSTR	Stream Buffer == WITHIN 250 FT OF STREAM --		2
hydro_in	ARC	STREAM	Streams and Creeks == Stream --		5
wetland	POLY	WETLAND	Wetlands and buffers == Wetland --		5
wetland	POLY	WETLAND	Wetlands and buffers == Within 100 ft. of wetland --		4
veg	POLY	VEGNAME	Vegetation == Old Growth --		2
veg	POLY	VEGNAME	Vegetation == Riparian Deciduous --		2
veg	POLY	VEGNAME	Vegetation == Riparian Mixed Conif/Deciduous --		2
veg	POLY	VEGNAME	Vegetation == Rock Outcrop --		5
veg	POLY	VEGNAME	Vegetation == Rock Talus --		5
habitat	POLY	WILDLIFE	Habitat == MERWIN WILDLIFE AREA		4
ppl_1320	POLY	OUTSIDE	PPL Proximity == PPL Beyond 1320 ft.		3

Appendix 4.3-1

*Recreation Capacity Parameters,
Limiting Factors, and Priorities*

Appendix 4.3-1. Recreation capacity management and impact parameters and summary for developed facilities and dispersed activities at Yale Lake.

Item Recreation Activities and Facilities/Areas	Management Parameters		Impact Parameters				Capacity Summary/Possible Actions to Consider	
	Use Level	Other	1 Ecological	2 Physical Space	3 Facility	4 Social	Limiting Parameters/ Standards	Priority Level/ Poss. Actions to Consider
CAMPING								
<p>Camping Activities:</p> <ul style="list-style-type: none"> RV and tent camping Group camping Undeveloped dispersed camping <p>Camping Facilities/Sites:</p> <ul style="list-style-type: none"> Beaver Bay Campground (63 sites) Cougar Camp (45 sites) Saddle Dam Campground (15 sites) 2 RV Dump Stations at Beaver Bay and Saddle Dam 2 Group Campsites - Cougar Park and Beaver Bay (15 sites each) Dispersed Shoreline Campsites (approx. 67) <ul style="list-style-type: none"> --Siouxon Creek Area --Cove/Point Near Yale Dam --Cove Near Saddle Dam --Siouxon Flats Area --Swift No. 2 Power Canal --North Lewis River Bridge Area <p>Other Private RV Campsites- 195 sites in the Upper Lewis R. Valley.</p>	<p>Campsites occupied - Average number of campsites occupied per various timeframes: non-peak shoulder seasons, peak season (July-August and holidays), and total season (see Section 4.3.1 and Table 4.3-1).</p> <p>Trends - Multi-year trends of use (1994-1997) for Lewis River Projects facilities (see Section 3.3.2).</p> <p>Capacity utilization - PAOTS/RVDs and percent occupancies/ capacity utilization (see Section 4.3.1 and Table 4.3-2).</p> <p>Camping type - Tent versus RV camping usage (see Section 3.3.2).</p> <p>Group camping - Group campsites are booked every weekend during July and August, and all holiday weekends (see Section 4.3.1).</p> <p>Dispersed camping - Campsites are used primarily during July and August and on holiday weekends. Many day-use sites are also used (see Section 3.3.2).</p> <p>Demand for camping is increasing per year: group camping (1.95%), RV camping (2.50%), tent camping (2.46%).</p>	<p>Other factors to consider - Campground/campsite design, density, and layout; Fee or non-fee; RV hook-ups versus no hookups; Developed campgrounds or dispersed sites; Reservation or non-reservation (full or partial); and boat-in versus drive-in.</p> <p>Opening and closure dates - Adequate - Memorial Day to Labor Day weekend, earlier/later for fishing/hunting use.</p> <p>Accessibility - SR 503 on the western shoreline provides excellent access versus the private IP Road on the eastern shoreline (no existing recreation easement).</p> <p>Reservation system - Visitors were "somewhat interested" to "interested" in an expanded reservation system: Beaver Bay (59%), Cougar Camp (70%), Cougar Park (71%), Saddle Dam (71%), and Yale Park (70%).</p> <p>Fees - 63% of visitors felt the fees were okay.</p> <p>Clark Co. Park, Recreation & Open Space Plan (Clark Co. 1994) - Consider Siouxon County Park as a boat-in campground and/or day-use area (had 8 sites in the 1960s, but were removed).</p>	<p>Sanitation - Sanitation and litter problems exist along the eastern shoreline.</p> <p>Dust/Erosion - Potential for excessive dust due to bare ground, erosion.</p> <p>Shoreline erosion - Potential for excessive shoreline erosion due to high wave action or pedestrian usage.</p> <p>Overflow impacts - Potential for overflow conditions with campers setting up in non-camping areas.</p> <p>Cultural resources - Potential for archaeological and historical resource impacts. No known sites have been identified. However, the potential exists for impacts.</p> <p>Habitat- Potential for wetland and riparian zone impacts and fish impacts.</p> <p>Fire Hazard - Potential for increased fire hazards due to unauthorized campfires.</p> <p>Wildlife - Potential for harassment of sensitive raptors (nest sites and habitat) and potential harassment of big game within the wintering range during the non-peak season.</p>	<p>Campsite area - Space available for existing as well as additional campsites, depending upon campsite type (RV, tent, dispersed, and group) and desired experience. Space along the shoreline for pitching a tent, using a fire ring, and beaching a boat.</p> <p>Accessibility - Site accessible by boat during different pool levels or by vehicle. Accessibility due to cut banks.</p> <p>Displacement - Peak use periods exceed existing capacity and may displace use to other facilities in the Lewis River corridor, and vice versa.</p>	<p>Facility number and condition - Number of facilities and condition (see Tables 2.3-3 and 2.3-4).</p> <p>Facility maintenance - Adequate maintenance provided by PacifiCorp.</p> <p>Thresholds - New facilities and/or management actions may be needed based upon 40% or greater capacity utilization during the season, also considering July-August (see Section 4.3.1 and Tables 4.3-1 and 4.3-2).</p> <p>Design- Newer camping facilities with proper design may accommodate more visitors with less impact.</p> <p>Facility satisfaction - Most (95%) visitors rated the facilities good or better.</p> <p>Difficulty finding campsites: Beaver Bay (51%), Cougar Camp (59%), and Saddle Dam (56%).</p> <p>Facility improvements desired - Most (67%) visitors want to see some campground improvements; mostly at Beaver Bay - restrooms/showers and better campsites with buffer; and Saddle Dam - improved launch and better campsites with buffer.</p>	<p>Main activity - RV/tent camping was the main activity of most (46%) of the visitors; 75% of visitors participated in this activity.</p> <p>Desires - 11% of campers desire campsites be expanded with more space between sites, more total sites, and more shoreline camping.</p> <p>Preferences - User preference for shoreline camping, water views, quality scenery, quality nearby restrooms/showers and drinking water.</p> <p>Satisfaction - 96% of campers rated their satisfaction "good" to "perfect." Only 4% said it was "poor" to "fair."</p> <p>Crowding - 59% of visitors felt crowded to some extent, considered "High Normal." During the July-August peak period, up to 70% felt crowded which is considered "More Than Capacity," with Saddle Dam visitors feeling most crowded. Noise is a concern of visitors. Proximity of dispersed campers to one another, sight and sound of other campers.</p> <p>Origin - 82-88% come 1-5 times/year, 50% have up to 4 people/party, and 68% are from WA, 29% OR.</p>	<p><u>Beaver Bay</u> - Facility and Social Parameters are the limiting factors. Main considerations: number of campsites, high occupancy rate during July-August, perceived crowding during these 2 months, yet most visitors are satisfied.</p> <p><u>Cougar Camp</u> - Facility and Social Parameters are the limiting factors. Main considerations: number of campsites, high occupancy during July-August, perceived crowding during these 2 months, yet most visitors are satisfied.</p> <p><u>Saddle Dam</u> - Facility and Social Parameters are the limiting factors. Considerations include the number of campsites available, high occupancy during July-August, perceived crowding all season, traffic, and design.</p> <p><u>Group Campsites</u> - Facility and Social Parameters are the limiting factors. Considerations: number of group campsites and high occupancy rate during July-August. Some capacity remains in June.</p> <p><u>Dispersed Shoreline Camping</u> - Environmental Parameter is the limiting factor: observed sanitation, fire, trash, and safety issues. Erosion increased due to steep cut banks.</p>	<p><u>Beaver Bay</u> - Priority 2: approaching capacity. Consider planning for potential expansion, redesign, and/ or new site development. Consider expanding the reservation system at this time.</p> <p><u>Cougar Camp</u> - Priority 1: at capacity. Consider possible expansion and/or new site development. Consider expanding the reservation system at this time.</p> <p><u>Saddle Dam</u> - Priority 1: exceeds capacity. Consider possible redesign and/or new site development elsewhere. Consider conversion to day-use only or group use. Consider expanding the reservation system at this time.</p> <p><u>Group Campsites</u> - Priority 2: approaching full capacity. Consider planning for expansion and/or new site development.</p> <p><u>Dispersed Shoreline Camping</u> - Priority 1: Reached capacity, consider increased shoreline mgmt.</p>

Appendix 4.3-1. Recreation capacity management and impact parameters and summary for developed facilities and dispersed activities at Yale Lake (continued).

Item	Management Parameters		Impact Parameters				Capacity Summary/Possible Actions to Consider	
	Use Level	Other	1 Ecological	2 Physical Space	3 Facility	4 Social	Limiting Parameters/Standards	Priority Level/Poss. Actions to Consider
PICNICKING AND REST STOPS								
<p>Picnicking/Relaxing/Making a Rest Stop:</p> <ul style="list-style-type: none"> Barbecuing Picnicking Resting/Relaxing Making Rest Stops on SR 503 <p>Picnic Facilities/Areas and Rest Stops:</p> <ul style="list-style-type: none"> Beaver Bay day-use area Cougar Park Yale Park Saddle Dam day-use area Dispersed day-use and/or camping shoreline sites (67) 	<p>Numbers of picnickers and people relaxing - Picnicking groups occupying picnic sites at any one time during various periods; number of visitors relaxing at any one time; number of groups using BBQs at any one time (see Section 3.3.2). The average number of picnickers at one time at all developed sites is 10-12; visitors relaxing is 36-42; and rest stop users is 4. Levels of use remained fairly constant all season (50%), except a drop in June due to weather (40%).</p> <p>Rest stop usage - Number of visitors using rest stops who are traveling along SR 503 to access the Monument or GPNF (see Section 3.3.2).</p> <p>Parking lot usage - Parking capacity at developed day-use sites (see section 4.3.1). Average number of parked weekend vehicles: Cougar Park (20), Saddle Dam (75), Yale Park (106), and Beaver Bay (15).</p> <p>Demand for Picnicking/Use of Rest Stops - Demand is increasing annually: picnicking (2.97%) and sightseeing (2.53%). Visits to the Monument are increasing about 5-6% annually.</p>	<p>Type of experience provided - Developed picnic and day-use area versus dispersed shoreline day-use site. Both are provided, including boat-in and drive-in.</p> <p>Availability to the public - Opening and closure dates of developed sites, Yale Park always open. Sites are in proximity to and are visible from SR 503.</p> <p>Clark Co. Trail and Bikeway System Plan (1994) to locate 2 rest areas along a future trail along the IP Road.</p> <p>Cowlitz Co. Comp. Park Plan (1994) - Goal to promote tourism by development of picnic areas and other services.</p>	<p>Sanitation - Sanitation and litter problems along the eastern shoreline.</p> <p>High pedestrian use areas - Potential for excessive dust, bare ground, and erosion. Grass areas may get over-used. Some problems at Yale Park were observed.</p> <p>Cultural resources - Potential for archaeological and historic resource impacts. No known sites have been identified. However, the potential exists for impacts.</p> <p>Habitat - Potential for wetland and riparian zone impacts and fish habitat impacts.</p> <p>Fire Hazard - Potential for increased fire hazards due to unauthorized campfires.</p> <p>Wildlife - Potential for harassment of sensitive raptors (nest sites and habitat) and harassment of big game within winter range during the non-peak season.</p>	<p>Space availability - Area per person in developed day-use sites, area for parking, usable shoreline area with/without beach, area for boats to beach, and proximity to the shoreline and other activities.</p>	<p>Number and condition of facilities provided - parking spaces, picnic tables, BBQs, trash receptacles, turf, shade trees, drinking water, restrooms (see Tables 2.2-3 and 2.2-4).</p>	<p>Main activities - Picnicking, relaxing, and using rest areas was low on the list of visitors' main activities (<10%). Almost half (47%) of visitors participated in picnicking, but it was not their main activity.</p> <p>Satisfaction - 100% of picnickers rated their satisfaction as good or better; other activities rated good or better include sightseeing (95%), use of rest areas (100%), and relaxation (93%).</p> <p>Crowding - Perceptions of some level of crowding by site include: Yale Park (39%) and Cougar Park (60%). Yale Park was perceived as the least crowded site, possibly because many visitors left the site by boat during peak periods.</p> <p>Desires - Some (9%) visitors want new/improved playground equipment.</p>	<p><u>Yale Park Picnic Area</u> - The physical space parameter is the limiting factor: little area exists to develop new picnic sites.</p> <p><u>Cougar Park Picnic Area</u> - The facility parameter is the limiting factor: there is some expansion room to the west; however, the number of facilities is currently limited at the existing site.</p> <p><u>Saddle Dam Picnic Area</u> - The physical space parameter is the limiting factor: no more area to develop picnic sites.</p> <p><u>Beaver Bay Picnic Area</u> - The physical space parameter is the limiting factor: no more area to develop as picnic space.</p> <p><u>Dispersed Shoreline Day-Use Sites</u> - The ecological and physical space parameters are the limiting factors: erosion, sanitation, litter, and fire hazard are concerns; little more space exists for shoreline use due to topography and steep cut banks.</p>	<p><u>Yale Park Picnic Area</u> - Priority 3: Existing capacity is adequate for picnicking; however, parking is a concern when peak boat launching occurs. See Boating section below.</p> <p><u>Cougar Park Picnic Area</u> - Priority 3: Existing capacity remains for picnicking, with adequate parking. Consider maintenance actions of trail between campground and day-use area.</p> <p><u>Saddle Dam Picnic Area</u> - Priority 3: Use of the small picnic area exceeds capacity during peak boating use periods only. Consider new parking/traffic controls, and redesign or reuse of the Saddle Dam area. See Boating section below.</p> <p><u>Beaver Bay Picnic Area</u> - Priority 3: The site functions within capacity.</p> <p><u>Dispersed Shoreline Day-Use Sites</u> - Priority 1: Like camping, dispersed day use of the shoreline is causing ecological impacts. Consider increased management of the eastern shoreline and maintenance actions.</p>

Appendix 4.3-1. Recreation capacity management and impact parameters and summary for developed facilities and dispersed activities at Yale Lake (continued).

Item	Management Parameters		Impact Parameters				Capacity Summary/Possible Actions to Consider	
	Use Level	Other	1 Ecological	2 Physical Space	3 Facility	4 Social	Limiting Parameters/Standards	Priority Level/Poss. Actions to Consider
BOATING								
<p>Boating Activities:</p> <ul style="list-style-type: none"> Power boating Water skiing Jetskiing/PWC use Sail boating Canoeing, kayaking, row boating, and use of inflatables <p>Boating Facilities/Services:</p> <ul style="list-style-type: none"> Beaver Bay Boat Launch and Parking (40 parking spaces, 1 lane ramp, 1 dock) Cougar Camp Boat Launch and Parking (100 parking spaces, 2 lane ramp, 1 dock) Yale Park Boat Launch and Parking (280 parking spaces, 4 lane ramp, 2 docks) Saddle Dam Boat Launch and Parking (200 parking spaces, 2 lane ramp, 1 dock) Marina Slips and Fuel Dock (none available) Clark County Sheriff's Dept. Marine Patrol (2 days/week) 	<p>Number of boats on the reservoir at different time frames - During the non-peak season, the number of boats on the res. ranged from 0-15 (density of 253 acres/boat). During the peak season, the average number of boats were: holiday weekends (140, density of 27 acres/boat); and non-holiday weekends (120, density of 32 acres/boat).</p> <p>Type and number of boats (mix) on the reservoir - the average summer weekend mix of boats is: 65% power boats, 2% sailboats, 21% jetskis/PWC, 5% rowboat/canoe/kayak, and 7% inflatables. Number of boats during sail boat regatta weekends - During regattas (2-4 times per year), a potential high number of sailboats (25-75, 50 avg.) pushes the total number of boats on the reservoir to 170 (density of 22 acres/ boat).</p> <p>Parking capacity utilization at launch sites during different timeframes - Beaver Bay (38% holiday, 35% non-holiday weekends; Cougar Camp (28% holiday, 38% non-holiday weekend), Yale Park (37% holiday, 37% non-holiday weekends), and Saddle Dam (38% holiday, 31% non-holiday weekends).s</p>	<p>Maintain a high pool level for recreation use - The pool elevation is voluntarily held high by PacifiCorp during the peak recreation season - Memorial Day to Labor Day weekend (480 ft. to 490 ft. msl). During the non-peak season, the pool elevation ranges from 460 ft. to 490 ft. msl.</p> <p>Year-round launch access to the reservoir - Yale Park is open year-round. The launch at Yale Park is operable when clear of debris down to approximately 470 ft. msl. The pool elevation can drop below this level (to 460 ft. msl.) making launching difficult or impossible.</p> <p>Peak use management- During extreme peak use days, vehicle access to launch sites may be closed.</p> <p>Boat speed restrictions- Boat speed is restricted by law within 100 feet of the shoreline (no wake zone).</p> <p>Boating law enforcement - Clark County Sheriff's Dept. patrols Yale Lake 2 days/week during the peak use period, including 1 weekend day; 140 citations were issued in 1997.</p> <p>Provision of boat fuel and slip facilities - No marina or fuel dock facilities are provided at Yale Lake.</p>	<p>Potential for fuel spills - No in-water fueling is allowed. No fuel dock exists. Most boats are trailered out of the water at night.</p> <p>Potential for wave-action erosion along shorelines - Boats likely cause some erosion; however, the wind also causes erosion and is fairly constant in the Lewis River corridor. PacifiCorp does implement erosion control measures in critical locations. Some beaching of boats occurs, principally day use along the eastern shoreline.</p> <p>Potential for wildlife harassment - Boating use is very low during the non-peak season when big game are in the area. Nest sites are predominately away from the shoreline.</p> <p>Potential for boater sanitation problems - Boaters must go ashore to use restroom facilities. Along the eastern shoreline, no facilities are provided.</p> <p>Potential for water quality degradation - Many boats have 2-stroke engines which tend to pollute the water more than other engines; 86% of boats are power boats and jetskis/PWC, many of which have 2-stroke engines.</p>	<p>Reservoir size - It is large and long - 3,800 surface acres, 27 mi. of shoreline, and is 10 mi. long.</p> <p>Size of boating areas - Boaters tend to concentrate near boat launches, particularly jetski/PWC use (see Figure 2.3-4). The area near Speelyai Canal is the least used area.</p> <p>Space for boat launch parking - Space is limited at boat launches for vehicle parking at all sites.</p> <p>Pool level depth effects on boating - Most (70%) respondents indicated the pool level did not affect boating experience. Of the 30% with problems, most (33%) problems related to ramp length or condition at Saddle Dam and Cougar Camp; 15% had general undefined problems, 11% were worried about hitting submerged objects, and 11% said floating debris was a hazard. Most (84%) respondents said that the lake water level was important to very important to their experience.</p> <p>Surface area for boaters - BOR stds.: Angler boats (min. 3.4 ac./boat), non-angler boats (min. 7.1 ac./boat). Capacity used: non-holiday regatta weekend (28%) and summer holiday weekend (23%).</p>	<p>Siting of boat launches affects access/use - The type, design, and location of launch facilities controls the max. number of boats on the lake at any one time and where boats congregate (see Figure 2.3-4).</p> <p>Launch use is dependent upon pool level - Saddle Dam and Cougar Camp launches do not operate adequately at minimum recreation pool (480 ft. msl). Minimum launch elevations of ramps include: Saddle Dam (487 ft.), Yale Park (470 ft.), Cougar Camp (484 ft.), and Beaver Bay (476 ft.). The Yale Park ramp operates to 470 ft. msl if debris is cleared. No ramps operate well at 460 ft. msl.</p> <p>Parking capacity at launch sites controls the number of boats on the reservoir - Parking capacity is adequate, except during extreme use days (2-5 days per year). Weekend avgs. include: Beaver Bay (38% holiday, 35% non-holiday); Cougar Camp (28% holiday, 38% non-holiday), Yale Park (37% holiday, 37% non-holiday), and Saddle Dam (38% holiday, 31% non-holiday).</p> <p>Launch waits - Launch wait times were low, except at Saddle Dam and Beaver Bay (small ramps).</p>	<p>Level of boating demand - In this region, water-based recreation opportunities are in high demand. Annual increases in demand include: power boating (2.02%), sailing (2.42%), and non-motorized boating (2.36%). Level of boater participation at Yale Lake includes: power boating (29%), non-motorized boating (18%), and jetskiing/PWC use (14%).</p> <p>Level of other water-based recreation demand - Annual increases in demand: fishing (1.67-1.91%, bank and boat angling), swimming (2.20%), and water skiing (2.11%). Level of participation at Yale Lake: sun-bathing and swimming (65%), water skiing (24%), and fishing (37%).</p> <p>Overall satisfaction with water-based activities - Visitors were generally satisfied. Ratings of "good" to "perfect" included: fishing (89%), power boating (98%), water skiing (86%), sailing (90%), jetskiing/PWC use (75%), and sunbathing/swimming (91%).</p> <p>Complaints by visitors - 5% of survey respondents indicated that boat launches need to be improved or expanded (#1 comment at Saddle Dam).</p>	<p><u>Overall Reservoir Boating</u> - Facility Parameter is the limiting factor - ramp access. The reservoir has additional capacity for more boats.</p> <p><u>Beaver Bay Boat Launch</u> - Facility Parameter is the limiting factor - single ramp causes higher wait times; condition is fair.</p> <p><u>Cougar Camp Boat Launch</u> - Facility Parameter is the limiting factor - launch condition is fair to poor, ramp is too short.</p> <p><u>Yale Park Boat Launch</u> - Facility Parameter is the limiting factor - length of the ramp does not provide access at lowest year-round pool level (460 ft. msl), and parking is exceeded during extreme peak use days causing overflow, safety concerns.</p> <p><u>Saddle Dam Boat Launch</u> - Facility Parameter is the limiting factor - length of ramp does not provide access at low pool level (480 ft. msl), parking is exceeded during extreme peak use days causing access problems, and the launch and dock are in poor condition.</p>	<p><u>Overall Reservoir Boating</u> - Priority 3: Overall boating capacity is adequate.</p> <p><u>Beaver Bay Boat Launch</u> - Priority 2: Within capacity. Consider some minor improvements to this launch ramp and dock.</p> <p><u>Cougar Camp Boat Launch</u> - Priority 1: Consider ramp and dock improvements, lengthening the ramp for use at pool of 480 ft. msl.</p> <p><u>Yale Park Boat Launch</u> - Priority 1: Consider more efficient parking methods and additional parking over-flow expansion for extreme peak days to minimize safety concerns on SR 503, lengthening the ramp to provide year-round launch access at pool level 460 ft. msl, and additional maintenance - periodic removal of debris that blocks the end of the ramp.</p> <p><u>Saddle Dam Boat Launch</u> - Priority 1: Consider alternatives including parking and ramp expansion, lengthening the ramp to provide lake access at a pool level of 480 ft. msl, and/or redesign/reuse of the Saddle Dam facility.</p>

Appendix 4.3-1. Recreation capacity management and impact parameters and summary for developed facilities and dispersed activities at Yale Lake (continued).

Item	Management Parameters		Impact Parameters				Capacity Summary/Possible Actions to Consider	
	Use Level	Other	1 Ecological	2 Physical Space	3 Facility	4 Social	Limiting Parameters/Standards	Priority Level/Poss. Actions to Consider
SWIMMING AND SUNBATHING								
Swimming/Sunbathing Activities <ul style="list-style-type: none"> Swimming/floating in designated areas Sunbathing/relaxing on sandy beaches Shoreline use Swimming/Beach Facilities: <ul style="list-style-type: none"> Beaver Bay swim area with floating boom, sand beach Cougar Park swim area with floating boom, sand beach Yale Park swim area with floating boom, sand beach Saddle Dam swim area with floating boom, sand beach Safety apparatus, signs No lifeguards provided (all sites) 	Occupancy or use of swim/beach day-use areas - Average number of swimmers and sunbathers using swim areas and adjacent sandy beaches during holiday and non-holiday weekends - Beaver Bay (9 holiday, 14 non-holiday), Cougar Camp (2 holiday, 12 non-holiday), Cougar Park (11 holiday, 17 non-holiday), Yale Park (14 holiday, 29 non-holiday), and Saddle Dam (12 holiday, 19 non-holiday). Total for all 5 sites is 48 (holiday weekends) and 91 (non-holiday weekends). Capacity utilization - no sites exceed capacity based on use levels listed above. Demand for swimming and sunbathing - Increasing at 2.20% annually.	Management of Safety - No lifeguards are provided; however, life saving apparatus are provided and signs are posted. Weather - Use is highly dependent upon good weather conditions; rain and wind are key factors. As a result, July and August are primary use months. Access- Swimming/sunbathing areas are open for use during the same periods of time as the larger campground or day-use facilities. Yale Park is open year-round.	Sanitation - Potential for water quality degradation in the swimming coves if use levels are too high and flushing action is not sufficient. No known problems exist. Litter in these areas is routinely removed. Floating debris - debris from the lake sometimes collects in the swimming cove areas creating swimming hazards and poorer water quality. High pedestrian use areas - Potential for excessive erosion. Areas may get over-used. No problems were observed. Cultural resources - Potential for archaeological and historic resource impacts. No known sites have been identified. However, the potential exists for impacts. Habitat - Potential for wetland and riparian zone impacts and fish habitat impacts. Wildlife - Potential for harassment of big game within winter range during the non-peak season.	Swimming/sunbathing area - Space available for use. Land area is constrained, but water area within the floating boom may vary. Accessibility - Sites accessible on foot. Shoreline access - limited because of cut banks, topography.	Facility number and condition - Number of facilities and condition (see Tables 2.3-3, 2.3-4). Facility maintenance - Adequate maintenance is provided by PacifiCorp.	Participation - Swimming/sunbathing is the #2 most popular activity behind camping at 65%. However, this category of use was listed by only 9% of visitors as their main activity. Satisfaction - Most visitors were satisfied with their swimming/sunbathing experience; 91% rated it good or better. Desires - About 4% of survey respondents wanted improved beach access with more swimming areas and sandy beaches. Distance to a swimming area was important to 70% of survey respondents. Conflicts - Jetskis/PWC riders were observed routinely riding near floating swimming area markers, occasionally hitting the marker while swimmers were present.	<u>Yale Park Swim/Beach Area</u> - The physical space parameter is the limiting factor: little area exists to develop new swim/beach area without impacting other uses. <u>Cougar Park Swim/Beach Area</u> - The facility parameter is the limiting factor: the area available for swimming is limited at the existing site on Cougar Creek. <u>Saddle Dam Swim/Beach Area</u> - The physical space parameter is the limiting factor: no more area to develop as beach area. <u>Beaver Bay Swim/Beach Area</u> - The physical space parameter is the limiting factor: no more area to develop as swim/beach area. <u>Shoreline Dispersed Day Use Swimming/ Sunbathing</u> - The ecological and physical space parameters are the limiting factors: observed erosion, sanitation, litter, and fire hazard are concerns; little space exists for shoreline use due to topography/steep cut banks.	<u>Yale Park Swim/Beach Area</u> - Priority 3: Existing capacity adequate for swimming/sunbathing; however, parking is a concern when peak boat launching occurs. See Boating section. <u>Cougar Park Swim/Beach Area</u> - Priority 3: Existing capacity remains for swimming/sunbathing, with adequate parking. <u>Saddle Dam Swim/Beach Area</u> - Priority 3: Use of the small swim/beach area exceeds capacity during peak boating use periods only. Consider new parking/traffic controls, and redesign or reuse of the Saddle Dam area. See Boating section. <u>Beaver Bay Swim/Beach Area</u> - Priority 3: The site functions within capacity. Consider additional maintenance to remove floating debris. <u>Shoreline Dispersed Day Use Swimming/Sunbathing</u> - Priority 1: Dispersed use of the shoreline is causing observed ecological impacts. Consider increased management of the shoreline and maintenance actions.

Appendix 4.3-1. Recreation capacity management and impact parameters and summary for developed facilities and dispersed activities at Yale Lake (continued).

Item Recreation Activities and Facilities/Areas	Management Parameters		Impact Parameters				Capacity Summary/Possible Actions to Consider	
	Use Level	Other	1 Ecological	2 Physical Space	3 Facility	4 Social	Limiting Parameters/ Standards	Priority Level/ Poss. Actions to Consider
INTERPRETIVE/ENVIRONMENTAL EDUCATION OPPORTUNITIES								
Interpretive/Environmental Education Activities <ul style="list-style-type: none"> Learning about nature, the hydroelectric project, and history Taking nature walks Attending Ranger campfire talks Interpretive/Environmental Education Facilities/Services: <ul style="list-style-type: none"> Informational/directional only signs at all recreation sites Interpretive signs/kiosks (none) Nature trails and signs (none) Campfire program provided by USFS Rangers 	<p>Number of visitors participating in interpretive or educational activities - currently none except Ranger campfire talks.</p> <p>Demand is increasing - Visiting interpretive displays is very high in demand in the region (3.12% annual increase in demand). Other related activity demand: nature study/wildlife observation (2.67%), outdoor photography (2.94%), and sightseeing and exploring (2.53%).</p> <p>Monument influence - Visitors in the area are desiring and/or predisposed to environmental education activities due to existing visitor centers located along SR 504 to the north and in the Monument at Ape Cave and elsewhere. Approx. 4.7 million visitors went to the Monument in 1995.</p>	<p>Cowlitz Co. Comp. Park Plan (1994) - Goal to promote tourism by development of viewpoints, interpretive information, and other services.</p> <p>Skamania Co. Park and Rec. Comp. Plan (1991) - Priority is to enhance tourism as a replacement of lost timber industry jobs, including interpreting historic resources.</p> <p>Lewis River Valley Strategic Action Plan (1995) - Goals to increase cultural events, designate SR 503 as a 2 to 3 mountain state scenic loop, and create kokanee and elk viewing and interpretive areas (such as Cougar Creek and elk winter range meadows).</p>	<p>Generally none, depending upon the size or attraction of the activity. Refer to Picnicking and Rest Stops.</p>	<p>Space for interpretive displays, amphitheaters, or other opportunities - space is generally limited at existing facilities, except for new signs. No interpretive facilities exist now.</p>	<p>Number and condition of facilities - directional/informational signs only (see Tables 2.3-3, 2.3-4). Some signs exist, but no interpretive displays. No formal nature trails exist. A USFS Ranger campfire program is offered during summer months.</p>	<p>Participation - 50% of visitors surveyed participated in sightseeing; 15% participated in nature study/photography. Participation remained constant (May to Aug.), then dropped in September. This activity was not listed as a main activity by visitors surveyed.</p> <p>Primary Destinations/Sightseeing - The Lewis River corridor offers multiple destinations - 45% of all survey respondents indicated that they had plans to or have already visited other locations during their trip. Of the 45%, most (34%) of these respondents listed the Monument (including Ape Cave, Windy Ridge, Lava Cave, etc.) as their primary destination. Others include: GPNF (15%), Lake Merwin (19%), and Swift Reservoir (17%).</p> <p>Satisfaction - Overall satisfaction for sightseeing was rated good or better by 95% of visitors surveyed.</p>	<p><u>Interpretation at Developed Sites</u> - The Management Parameter is the limiting factor. Demand is very high for interpretive opportunities, yet none exist on project lands except Ranger campfire talks.</p>	<p><u>Interpretation at Developed Sites</u> - Priority 2: Few opportunities currently exist to meet high demand and to satisfy management objectives. Consider planning for possible new opportunities, such as nature trails and interpretive displays at developed sites.</p>

Appendix 4.3-1. Recreation capacity management and impact parameters and summary for developed facilities and dispersed activities at Yale Lake (continued).

Item	Management Parameters		Impact Parameters				Capacity Summary/Possible Actions to Consider	
	Use Level	Other	1 Ecological	2 Physical Space	3 Facility	4 Social	Limiting Parameters/ Standards	Priority Level/ Poss. Actions to Consider
TRAIL-RELATED ACTIVITIES								
<p>Trail-related Activities:</p> <ul style="list-style-type: none"> Non-motorized: <ul style="list-style-type: none"> --Hiking/Walking --Mountain Biking --Bicycling --Horseback Riding --Backpacking Motorized: <ul style="list-style-type: none"> --4WD driving --ATV/Motorcycle use <p>Trail Facilities/Corridors:</p> <ul style="list-style-type: none"> Saddle Dam to Speelyai Canal informal dirt trail (4 miles) Cougar Creek informal dirt trail (0.4 mile) Swift No.2 power canal informal dirt trail/canal crossings SR 503 paved bike route IP Road paved route with bridges (no recreation easement) Potential Route - Yale-Merwin Transmission Line ROW dirt route Potential Route - Cougar Camp/Park to the town of Cougar No ADA-accessible recreation trails exist. 	<p>Trails currently used - IP Road route: lightly used on occasion by road bicyclists, mountain bicyclists, OHV/ATV riders, and hikers - no recreation access easement exists for this private road; Saddle Dam to Speelyai Canal trail: lightly used by smaller groups of equestrians and a few hikers and mtn. bikers; Swift No. 2 power canal: anglers regularly use trails following the canal to access fishing areas; Yale-Merwin T-line ROW: no known trail use; Cougar Creek trail: informal fishing and dispersed camping trail used regularly; town of Cougar to Cougar Park: pedestrian traffic currently using the highway.</p> <p>Annual increases in demand - In this region, trail-related recreation opportunities are in high demand: day hiking (2.73%), off-roading (4WD, ATV) (2.31-2.59%), bicycling (2.98%), mtn. biking (2.61%), and horseback riding (1.69%).</p> <p>Trends - One of the 2 greatest needs in the region per the IAC is trail opportunities due to high demand (hiking, bicycling, and walking). The IAC sees trail development as a top priority.</p>	<p>Siouxon Landscape Plan (DNR 1996) - Partial goals: expand trail opportunities (equest., hiking, mtn. biking), develop trail maint. Agreements and plan, meet future recreation needs, maintain vehicle access but reduce costs, and provide for hunting.</p> <p>ILM Plan (WDFW 1995) - Partial goals: provide recreation opportunities (hunting & fishing), provide public access, secure open space, & minimize wildlife-recreation conflicts. Damaging activities (ATVs, snow mobiling, and horseback riding) should not be allowed in sensitive areas (caves, riparian zones, big game wintering areas).</p> <p>Clark Co. Park, Rec. and Open Space Plan (1994); and Trail and Bikeway System Plan (1994) - Consider developing the IP Road into a non-motorized trail with 2 rest areas/toilets, creating a trail from La Center to the Monument. Also consider using the Yale-Merwin T-line ROW.</p> <p>Lewis River Valley Action Plan (1995) - Priorities: a new trail from the town of Cougar to Cougar Park, day hikes from Cougar to Beaver Bay, nature trails, and wildlife viewing areas (Cougar Creek and elk).</p>	<p>Sanitation - Potential for sanitary problems if use levels are high, no toilets. No current problems observed.</p> <p>Erosion - High trail use creates the potential for excessive dust, bare ground, and erosion. No current problems observed.</p> <p>Cultural resources - Potential for archaeological and historic resource impacts. No known conflicts. No known sites have been identified. However, the potential exists for impacts.</p> <p>Habitat - Potential for wetland and riparian zone impacts and fish habitat impacts. Trail currently extends up Cougar Creek. No known conflicts.</p> <p>Fire Hazard - Potential for increased fire hazards due to trail use. No known trail-related problems.</p> <p>Wildlife - Potential for harassment of sensitive raptors (nest sites and habitat) and harassment of big game within winter range during the non-peak season. No known problems.</p>	<p>Space limitations - ROW along SR 503 may be limiting if a bike path or lane was added to the highway. The current IP Road surface and bridges are narrow; however, heavy truck traffic is very light.</p>	<p>Trail facilities - No formal trails currently exist. No ADA-accessible recreation trails exist. Informal unmarked trails appear to function adequately for those who use them and know about them. Informal walking can occur at all sites and along the shoreline in most areas.</p>	<p>Participation - Visitors surveyed listed hiking/walking as the third highest (51%) activity that they participated in during their visit. Hiking/walking activity increased in the later summer months to 68%. Mountain biking and road bicycling was 17%. Few (<4%) listed trail use as a main activity.</p> <p>Satisfaction - Most (96%) walkers/hikers were satisfied (rated good or better) with their experience. All (100%) mountain bikers/road bikers rated their experience as good or better. Many visitors also went to the Monument and/or GPNF; therefore, hiking opportunities may have been satisfied outside of the project.</p>	<p><u>Trail Opportunities</u> - The Management Parameter is the limiting factor. Demand is very high for trail-related opportunities; agency and organization plans identify trails as a high priority. No formal trails and no ADA-accessible recreation trails exist at the project, yet most are satisfied with their experiences. Several informal trails exist.</p>	<p><u>Trail Opportunities</u> - Priority 2: Yale Lake does not have developed facilities to help satisfy regional demand for trail-related activities. Few opportunities exist to help satisfy demand, management objectives, and meet ADA guidelines. Consider planning and implementing possible new or formalized trail opportunities. Potential trail projects may include: ADA-accessible recreation trails at developed sites, use of the IP Road as a formal non-motorized trail, formalize a trail from Cresap Bay to Saddle Dam to Speelyai Canal, formalize the Cougar Creek trail, create a bike lane or path along portions of SR 503, and develop a new trail between the town of Cougar and Cougar Park, and possibly to Beaver Bay.</p>

Appendix 4.3-1. Recreation capacity management and impact parameters and summary for developed facilities and dispersed activities at Yale Lake (continued).

Item Recreation Activities and Facilities/Areas	Management Parameters		Impact Parameters				Capacity Summary/Possible Actions to Consider	
	Use Level	Other	1 Ecological	2 Physical Space	3 Facility	4 Social	Limiting Parameters/ Standards	Priority Level/ Poss. Actions to Consider
FISHING ACTIVITIES								
<p>Fishing Activities:</p> <ul style="list-style-type: none"> Boat fishing (majority) Bank fishing <p>Fishing-related Facilities/Areas:</p> <ul style="list-style-type: none"> Boating facilities (see above) Access piers (none) Boat docks at launches (5) ADA angler access (none) Fish cleaning facilities (none) Shoreline access except other private (almost all) 	<p>Handicapped fishing - PacifiCorp provides an annual fishing derby at Swift No. 2 power canal.</p> <p>Demand - Fishing is increasing in demand annually at 1.91% (boat angling) and 1.67% (bank angling).</p> <p>Fish caught (creel survey) - kokanee (73%), rainbow trout (23%), and cutthroat trout (4%). Mean catch rate is 0.30 fish/hour.</p> <p>Most anglers are boat anglers - Boat anglers caught 96% of kokanee, 44% of cutthroat, and 23% of rainbow trout.</p> <p>Counts of boat and bank anglers - Maximum number of boat anglers observed at one time was 40, maximum number of bank anglers observed was 10. Average counts at one time are less.</p> <p>Timing of activity - Over a third (37%) of visitors surveyed during May to September went fishing. More visitors went fishing early in the season (May [51%] and June [49%]) and late in the season (September [41%]) as compared to the middle of the season (July [34%] and August [29%]).</p>	<p>ILM Plan (WDFW 1995) - Goals include developing an integrated plan for cooperatively managing fish on a landscape basis for the next 20 years. Establish acceptable biological limits for recreation opportunities consistent with aquatic populations. Provide for fishing opportunities and access. Minimize recreation - fish conflicts. Protect critical fish habitat areas.</p> <p>Fishery Management - The kokanee fishery in Yale Lake has been self-sustaining since the early 1960s—when hatchery kokanee were introduced into the lake. Rainbow trout stockings ended in 1980. Since then, no hatchery fish have been stocked into Yale Lake. In 1999, the WDFW is proposing to stock 150,000 kokanee fry into Cougar Creek to supplement declining runs. Some hatchery fish enter Yale Lake from power operations at the Swift No. 1 and No. 2 facilities.</p> <p>WDFW Fishing Licenses - Number of fishing licenses issued in the Cowlitz and Clark County areas exceeds the state average. About 57% of visitors come from these 2 counties.</p>	<p>See Boating above.</p> <p>See Trail-use above.</p> <p>Fishery Management-Managed by WDFW. Yale Lake is considered a very good kokanee fishery.</p>	<p>Size of fishing areas - Boat anglers use the entire reservoir area, but tend to concentrate use away from boat launches where other boats are located, particularly the eastern shoreline (see Figure 2.3-4). Bank anglers have most of the 27-mile shoreline for fishing, but tend to concentrate near creeks entering the reservoir, developed recreation sites, and day-use dispersed sites.</p> <p>Lake level disturbance of fishing - Most anglers (85%) indicated that the pool level did not affect their fishing experience. This is to be expected since the survey was conducted mostly when the pool level was high.</p> <p>Fishing space needed - 40% of anglers surveyed were wading or bank fishing, 32% were boat and bank fishing, and 28% were boat fishing only (60% total used a boat).</p>	<p>See Boating above.</p> <p>See Trail-use above.</p> <p>Angler access piers or docks - none (5 boat docks exist).</p> <p>ADA-accessible fishing opportunities - none.</p> <p>Fish cleaning facilities - none.</p> <p>Shoreline - Most of the reservoir shoreline and river is fairly accessible, however, no angler access trails have been developed.</p> <p>Launch facility waiting - Launch wait times were low, except at Saddle Dam and Beaver Bay (small ramps).</p>	<p>Participation - Over a third (37%) of visitors surveyed participated in fishing activities (up to half during May and June). For 10% of visitors surveyed, fishing was their main activity.</p> <p>Satisfaction - Most (89%) anglers surveyed were satisfied with their fishing experience (rated good to perfect).</p> <p>Importance of factors - Most (84%) anglers surveyed felt that landing a fish was important. Most (53%) anglers surveyed felt that proximity to another angler was also important.</p>	<p><u>Fishing Opportunities</u> - The Management and Facility Parameters are the limiting factors. Demand for fishing in the region is very high; agency plans identify fishing opportunities as a high priority. WDFW manages the fishery and has created a very good kokanee fishery. Most anglers use boats- see comments under Boating above. No facilities currently exist for ADA-accessible fishing.</p>	<p><u>Fishing Opportunities</u> - Priority 2: Good recreational fishing opportunities currently exist. Continued fishery management programs are assumed to maintain the fishing experience. As most anglers are boat anglers, consider actions listed under Boating above. Also consider planning and implementing new angler access facilities per ADA guidelines.</p>

Appendix 4.3-1. Recreation capacity management and impact parameters and summary for developed facilities and dispersed activities at Yale Lake (continued).

Item	Management Parameters		Impact Parameters				Capacity Summary/Possible Actions to Consider	
	Use Level	Other	1 Ecological	2 Physical Space	3 Facility	4 Social	Limiting Parameters/ Standards	Priority Level/ Poss. Actions to Consider
OTHER OPEN SPACE-RELATED ACTIVITIES								
Other Open Space-related Activities: <ul style="list-style-type: none"> Nature/wildlife observation Photography Hunting Food/berry collecting Other Open Space-related Facilities/Areas: <ul style="list-style-type: none"> Undeveloped tracts of open space and shoreline Views from SR 503 Merwin Wildlife Habitat Management Area 	<p>Other open space dispersed uses - lower levels of use on lands surrounding Yale Lake including PacifiCorp, DNR, and other private lands.</p> <p>Demand - Annual increase in demand: nature study/wildlife observation (2.67%), outdoor photography (2.94%), sightseeing and exploring (2.53%), big game hunting (1.53%), and bird hunting (0.88%).</p>	<p>Siouxon Landscape Plan (1996) - Goal is to provide quality hunting (among other goals).</p> <p>ILM Plan (WDFW 1995) - Objectives include: developing an integrated plan for cooperatively managing fish and wildlife on a landscape basis for the next 20 years; establish acceptable biological limits for recreation opportunities consistent with aquatic and wildlife populations; provide for hunting and fishing opportunities and access; minimize recreation fish/wildlife conflicts; and protect critical habitat areas.</p> <p>WDFW Hunting Licenses - Number of hunting licenses issued in the Cowlitz and Clark County areas exceeds the state average. The number of hunting licenses issued has increasing sharply in this area at 5-6% annually. About 57% of visitors come from these 2 counties.</p> <p>Merwin Wildlife Habitat Management Area - West of Saddle Dam is a wildlife area set aside for wildlife habitat management during the relicensing of the Merwin Project. This area has specific management prescriptions.</p>	<p>Sanitation - Potential for sanitary problems if use levels are high, no toilets. No current problems observed.</p> <p>Erosion - Pedestrian traffic creates the potential for erosion. No current problems observed.</p> <p>Cultural resources - Potential for archaeological and historic resource impacts. No known sites have been identified. However, the potential exists for impacts.</p> <p>Habitat - Potential for wetland and riparian zone impacts and fish habitat impacts. No known conflicts.</p> <p>Fire Hazard - Potential for increased fire hazards due to pedestrian use. No known problems.</p> <p>Wildlife - Potential for harassment of sensitive raptors (nest sites and habitat) and harassment of big game within winter range during the non-peak season. No known problems.</p>	<p>Developed versus undeveloped recreation suitability - The GIS-based suitability analysis indicates that only 8% of the study area (excluding Water and Kick Out areas) is highly suitable to moderately highly suitable for recreation development. The remaining 92% is more suitable for undeveloped recreation use and open space retention.</p>	<p>Facilities - See Trails above.</p>	<p>Participation - Half (50%) of those surveyed participated in sightseeing, 15% in nature study/photography, and others (<10%). These activities were considered as main activities by <4% of respondents.</p>	<p><u>Open Space Management</u> - The Management and Physical Space Parameters are the limiting factors. Demand is very high for developed recreation facilities and activities. Yet, these needs must be balanced with the needs for open space and wildlife habitat management and for land to be set aside for future needs. Land is limited.</p>	<p><u>Open Space Management</u> - Priority 2: An adequate supply of land for existing open space-related recreation activities exists. Consider planning for long-term retention of open space to meet future needs. Focus development only in areas that are highly suitable for recreation development (see Figure 4.3-3).</p>