

Addendum December 2006

Aquatic Plant Management near Public Boat Launches in Box Canyon Reservoir

The spread of Eurasian watermilfoil (EWM) from Box Canyon Reservoir to other waterbodies in Pend Oreille County and waters within nearby US Forest Service lands is a key concern. Plant material inadvertently transported on watercraft is a common mode of spread for invasive aquatic plants. The County's Interim Aquatic Plant Management Plan (IAPMP) lists a management goal for public boat launches as "maximizing the reduction and containment of identified problematic macrophytes [around public boat launches] through rotoavation and education." There are 22 public boat launches within Box Canyon Reservoir (District 2000). Their locations are shown in Figure 1. Currently, the rotoavator treats aquatic plant beds at these boat launches similar to other target areas within Box Canyon Reservoir (BCR). Treatment now occurs approximately once every 18 months at any given site. The standard treatment is rotoavation of plant beds and, where feasible, the plant material is stacked on the bank. Further reduction in the density and duration of the presence of EWM and curly pondweed (both non-native invasive species) in the near vicinity of public boat launches within BCR is desired.

The County's IAMP will be updated to note the following objectives and actions directed at the containment of non-native aquatic plant species around public boat launches in BCR.

The objective for aquatic plant management in the vicinity of public boat launches is to minimize the spread non-native aquatic plants to other water bodies and maximize a safe environment for recreational users.

A prescription will be developed specific to each public boat launches within BCR. This strategy will be based on a site inspection of the site and will guide treatment of aquatic plants. Table 1 lists factors to consider when developing a site specific strategy. Table 2 is a list of possible treatments. Actions other than those listed in Table 2 may be elected if new technologies or existing alternatives better ensure meeting management objectives. Attachment A is a form to be used when preparing a site specific strategy.

The default treatment area surrounding public boat launches includes 50 ft along shoreline to either side of launch and extending outwards at a 45 degree angle to a water depth of 18 ft or edge of aquatic plant bed, whichever is lesser. A typical treatment area is shown in Figure 2.

Annual monitoring will occur at each public boat launch. Monitoring will include the entire treatment area. These monitoring sites are in addition to the index sites identified in the IAMP. Monitoring procedures will be similar to those listed in the IAMP for the index sites. Monitoring will occur in August through early September when plant biomass is at its peak. Surveyors will visually estimate the outer boundary of aquatic plant beds using a classification system similar to that used in the 1997 survey. The 1997 aquatic plant maps will serve as a base map for initiating surveys. The treated area will be assumed to match that described on the site specific strategy for a given boat launch.

The density of infestation will be noted for each plant bed within the treatment area (dense or sparse). The date and type of treatment will be noted in the survey report. The three most dominant species within each plant community will be noted. Field notes will be prepared on a standardized form. The updated (hand sketched) maps will be archived along with field data forms. The effectiveness of site specific strategies will be reviewed annually; however, it is recognized that three to five years may be necessary to fully evaluate the effectiveness of some strategies.

The schedule for developing and implementing site specific plans for boat launches will be initiated in summer 2006. The District and the County will inspect each site and cooperatively develop site strategies using the form in Attachment A. These strategies will become part of the IAMP. Implementation of the strategies will begin implementation in 2007. Initially, in 2007, implementation will be constrained to being within the current budget level for the aquatic plant management in BCR. If alternate strategies are identified that require funding in excess of that currently available, the District will work with the County to seek additional funding sources.

If for some unforeseen reason the County suspends participation in the aquatic weed program, the District will fully fund implementation of the site specific aquatic plant management prescriptions developed for all public boat launches. In addition, the District will monitor and treat any new future public boat ramps. The primary treatment at public boat launches is rotoation and removal of aquatic vegetation. Removal is defined as transporting the rotoated vegetation for disposal at a location where it can not be re-introduced into the reservoir within the range of seasonal water levels. The site specific plans will include designation of onshore temporary storage locations as well as details on how the plant material will then be moved for off-site disposal. In addition to or in lieu of rotoation with removal, other actions, that best address the site specific plan objectives for each boat launch will be fully funded by the District. The District's commitment to fund the rotoation program does not preclude the District or other parties from seeking support funding for this program from other third parties.

In consultation with the Forest Service, the District will also evaluate and implement new measures at all public boat launches based on site specific plan objectives for each boat launch as new methods become available and are accepted as scientifically sound and effective practices by state and local agencies.

Table 1 Factors to consider when developing site specific strategies for boat launches

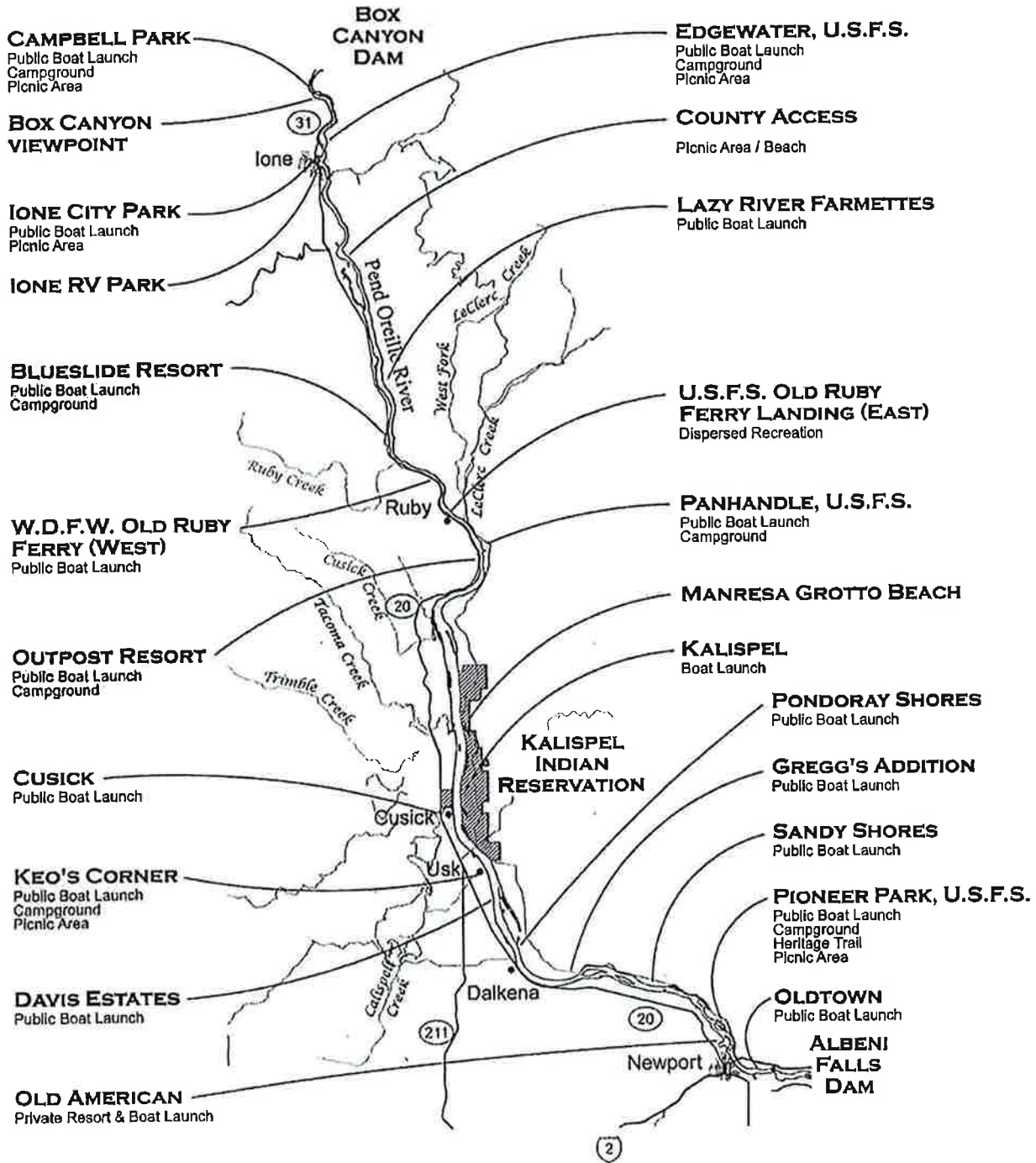
Beneficial Uses		Treatment	
1	Safety for boaters	11	Rotovator access
2	Safety for swimmers	12	Underwater obstructions
3	Level of boater use of ramp	13	Bed slope and range of water depths
4	Approach pattern for boats to and from ramp	14	Substrate size
5	Do boats beach or spend time in immediate area	15	High water velocities
6	Other beneficial uses at site	16	Low water velocities
7	Cultural resources	17	Frequency of treatment needed
	Character of Plant Bed	18	Cost of alternate treatments
8	Size of area supporting plant growth		Removal & Disposal of plants
9	Density of plants	19	Access for alternate treatments
10	% invasive plants (EWM & curly pondweed)	20	Constraints for placing plant material onshore for disposal
		21	Access for equipment to retrieve and transport plant material offsite
		22	Likelihood of public use of rotovated plant material
		23	Hazard and/or aesthetic concerns for plant material placed on shoreline

Table 2 Treatment Alternatives for Boat Launches

No.	Treatment
1	Rotovation with Removal
1a	Plants placed on bank
1b	Removal by public
1c	Removal by heavy equipment
1d	Leave on bank above seasonal high water
1e	Plants placed on barge
2	Rotovation without Removal
3	Harvester with removal
4	Diver hand pull and remove by suction pump
5	Bottom barriers
6	Substrate armoring
7	Chemical treatment
8	Biological treatment
9	Other
10	No Action

Public Utility District No. 1 of Pend Oreille County

1998 RECREATION USE ASSESSMENT



PREPARED BY: JACQUES 4/15/2016 7:40:13 AM
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FIGURE 1
RECREATION STUDY
AREA MAP

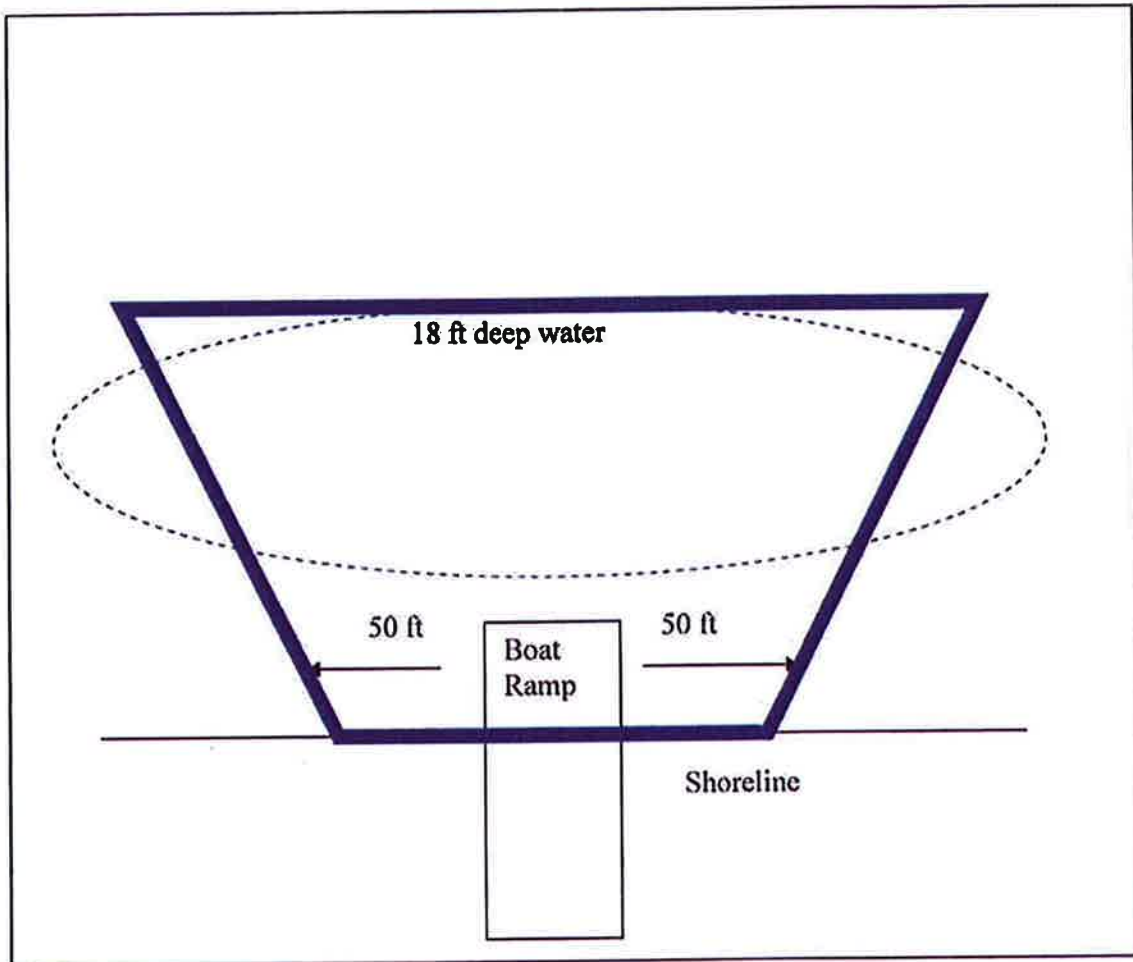


Figure 2 Typical treatment area near public boat launch. The treatment area is shown in heavy blue line. The portion of the aquatic plant bed (dashed green line) that is within the treatment area will be treated according to site specific plan

Site Specific Strategy for Aquatic Plant Management Near boat Launches in Box Canyon Reservoir

Survey Date _____ Person(s) preparing plan _____

Site Name _____ TWP/SEC/R _____ River Mile/Bank _____

Aquatic Plants Characterize aquatic plants and draw on sketch map (Note: aquatic plant beds at site may be divided into sub-areas if distinct differences are observed. Note dimensions of treatment area and estimated length (ft) and width (ft) of each sub-area plant bed within treatment area. List 3 most dominant species; note overall density for all plants; estimate % invasive species (nearest 10% increment) based on % of total area of plant bed

Sub-Area 1 (use this if only one type of plant bed) Length (ft) _____ Width (ft) _____
 Dominant species (1) _____ (2) _____ (3) _____
 Circle One: Dense Sparse % EWM _____ %POCR _____

Sub-Area 2 (use this if only one type of plant bed) Length (ft) _____ Width (ft) _____
 Dominant species (1) _____ (2) _____ (3) _____
 Circle One: Dense Sparse % EWM _____ %POCR _____

Sub-Area 3 (use this if only one type of plant bed) Length (ft) _____ Width (ft) _____
 Dominant species (1) _____ (2) _____ (3) _____
 Circle One: Dense Sparse % EWM _____ %POCR _____

Check which beneficial use considerations apply and add comment

Beneficial Uses	Comment
Safety for boaters	
Safety for swimmers	
Level of boater use of ramp	
Approach pattern for boats to and from ramp	
Do boats beach or spend time in immediate area	
Other beneficial uses at site	
Cultural resources	

Comments _____

Survey Date _____

Site Name _____

TWP/SEC/R _____

River Mile/Bank _____

Preferred Option(s) for treatment More than 1 strategy may be elected; sub-areas may be treated differently. Note both short term (2-5 years) and long term strategy

No.	Treatment	Acres	Cost/Acre	Total Cost
1	Rotovation with Removal			
1a	Plants placed on bank			
1b	Removal by public			
1c	Removal by heavy equipment			
1d	Leave on bank above seasonal high water			
e	Plants placed on barge			
2	Rotovation without Removal			
3	Harvester with removal			
4	Diver hand pull and remove			
5	Bottom barriers			
6	Substrate armoring			
7	Chemical treatment			
8	Biological treatment			
9	Other			
10	No Action			

Summarize Treatment strategy

Preferred Option for disposal of plant material		Comment
1	Access for alternate treatments	
2	Constraints for placing plant material onshore for disposal	
3	Access for equipment to retrieve and transport plant material offsite	
4	Likelihood of public use of rotovated plant material	
5	Hazard and/or aesthetic concerns for plant material place on shoreline	

Summarize disposal strategy