

## Key Lake Sammamish Water Level Issues

Lake Sammamish shoreline property owners face a series of issues with respect to water level impacts to their properties. These issues and key information are presented below by answering a series of questions. This information has been prepared by members of WA Sensible Shorelines Association.

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**Question 1: By returning to annual maintenance in 2010-2011 and removing half of the accumulated sediment in the Transition Zone (TZ), didn't the County resolve lake level issues?**

**Response: No.**

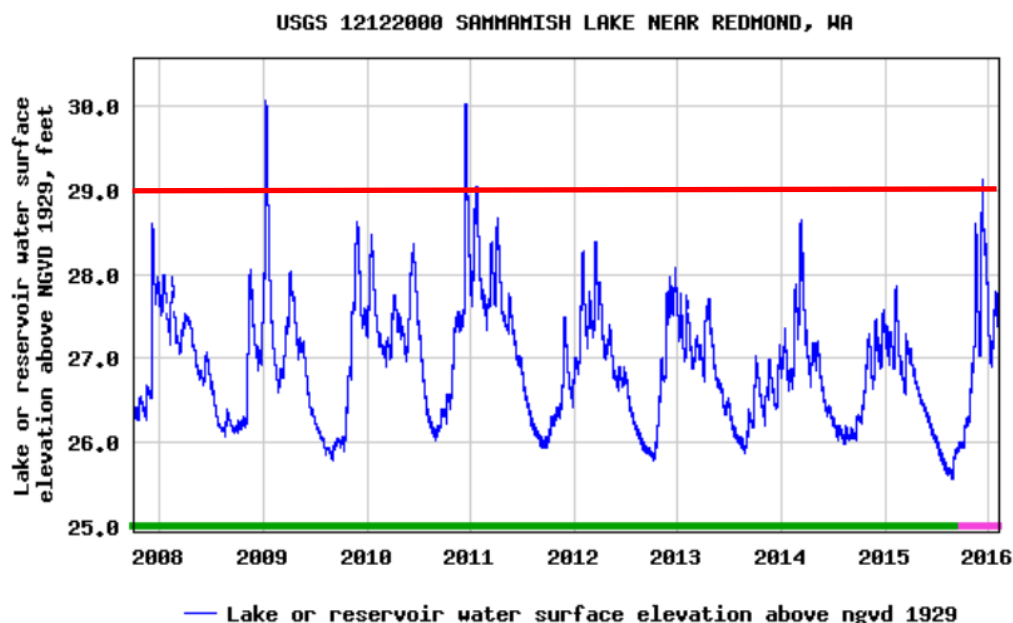
Current, day-to-day lake levels, reported by USGS, exceed historic values. This has resulted in an artificially raised OHW (Ordinary High Water/Level) which penalizes shoreline property owners. As explained below, the Corps of Engineer's (Corps) OHW should be in use until the flood control project is returned to conditions and outflows which were maintained for more than 30 years.

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**Question 2: Isn't the flood control channel at Marymoor Park meeting flow requirements?**

**Answer: No. The County's computer models show that at very high lake levels, design flow might be achieved. But recent lake levels show that flows are reduced compared to expected flows.**

The Corps of Engineer's designed the Marymoor weir and floodway (called the Transition Zone) to pass a certain flow in an extraordinary storm. The Corps' storm was one anticipated to occur "once in 10 years". And, they forecast that such a storm would produce a lake level of 29 ft.<sup>1</sup> The **red line** in the following graph indicates how infrequently the lake is raised to this level. It's the more common, lower lake levels that are impacting properties on the lake more and more often. Why is this?



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<sup>1</sup> The design was carried out under the 1929 NGVD29 datum. That was changed in 1988 to the NAVD88 datum. A level reported in 1988 is actually 3.6 ft. higher than a 1929 level. Often the two are confused, so one must be certain which is being quoted.

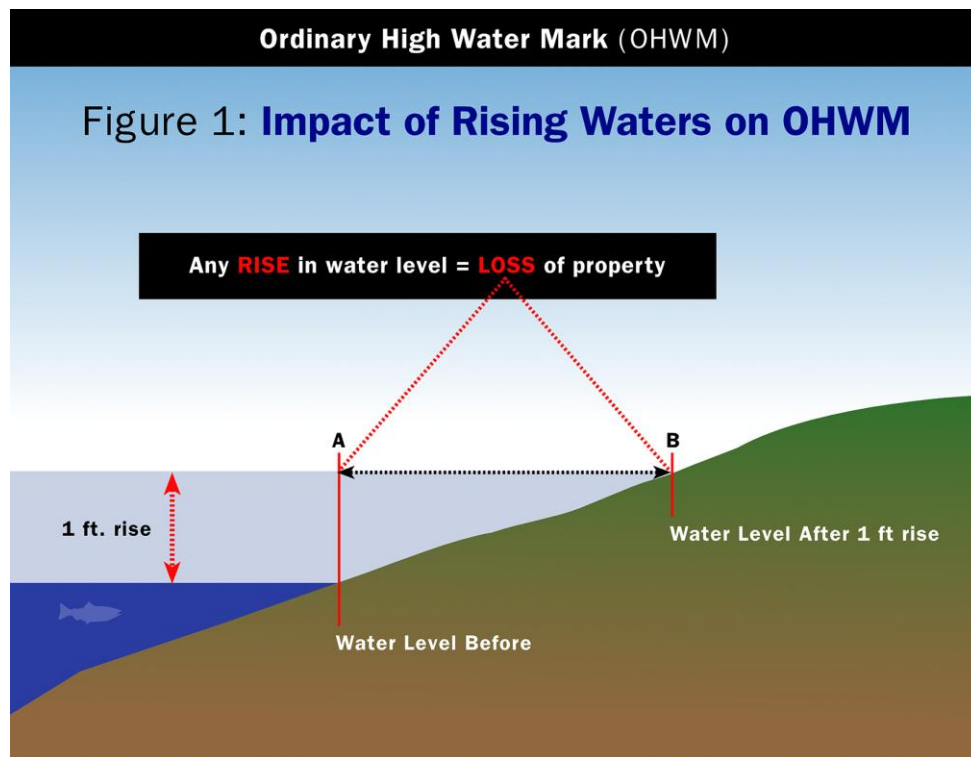
Floodways, such as at Marymoor, must be maintained or they will not function properly. If not maintained, extended periods of raised water levels occur. As bad, there will be less storage capacity available in the lake should a rare storm occur.

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**Question 3: Shouldn't residents be more concerned about rare, severe storms than day-to-day conditions?**

**Response: Quite the contrary. Improvements such as docks are legally built to a lower level and will be submerged and destroyed at a lake level of 29 ft. and erosion will occur.**

Adequate flow is not occurring at lower lake levels. The result of over a decade of poor maintenance has been a shift higher in the Ordinary High Water Mark (OHWM). Slower outflow results in water being retained and the lake rising. Left at elevated levels for extended periods, the OHWM has been shifted upland onto private properties. Since the OHWM is the boundary for shoreline parcels, this results in a "taking" of property. Figure 1 illustrates this.



Beyond the "taking" of their property by this shift in OHWM, residents also witness major damages to improvements they've placed along the shore, such as to docks and bulkheads.

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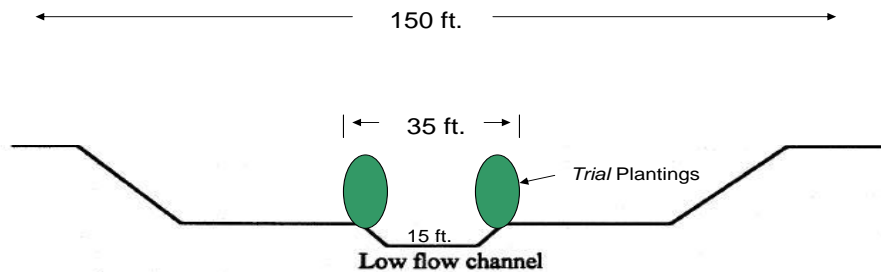
**Question 4: Is the County justified in stating their current level of maintenance of the TZ is costly?**

**Response: No. The County failed to provide agreed upon annual maintenance for more than a decade. This resulted in higher costs in order to correct accumulated deficiencies. AND, the County and State agencies have required costly mitigation for what should have been routine maintenance.**

Recent costs have been unreasonable for the following reasons:

(1) Ironically, in the late 1990's the Corps agreed to **trial** placement of a narrow, 10 ft. wide strip of tall vegetation on either side of the center, low flow channel in the TZ floodway. This was to provide shade for passing fish and is illustrated in the next figure.

### 1990's Corps Agreed to Trial Plantings



(2) But the County did not adequately maintain this vegetation for years, and, with resulting excessive growth and accumulation of debris, then began imposing costly mitigation on needed maintenance actions. (Note: the current width of vegetation is in excess of 80 ft. in the channel.)

(3) The Corps prepared its own Biologic Assessment (BA) and found that maintenance should not require mitigation.

(4) As important, the Corps repeatedly warned the County that the "trial" vegetation was reducing outflow; even asking that the County to forewarn the public of the consequences, namely higher lake levels and flood damages.

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**Question 5: Will maintenance of the TZ be carried out annually now and after construction of the Willowmoor Project?**

**Response: No, not according to the objectives listed for the Project.**

A primary project objective (listed by staff to the Willowmoor Advisory Committee) is the elimination of maintenance of the TZ - due primarily to cost concerns. Maintenance would only occur to replace new native vegetation placed along the new fish stream.

Decision makers should ask that annual maintenance be carried out in the floodway/TZ. AND, it should be kept in mind that recent maintenance has not been sufficient to allow the TZ to pass adequate flow levels. The result has been raised water levels, and an OHWM shifted higher onto private properties. Only with consistent, robust annual maintenance will outflow be sufficient to assure the OHWM is returned to normal, historic levels.

**Question 6: When deciding to live on the lake shore, shouldn't residents have understood the OHWM would naturally shift higher over time?**

**Response:** Historic data plus recent studies during the Willowmoor planning process show the shift has not been a natural change.

For 30 years after construction of the flood control system by the Corps, lake levels, on average, did not exceed 27 ft. (1929 datum) more than 60 days per year. Following placement of the trial vegetation, that changed dramatically rising to more than 250 days in 2010 as the Corps forewarned.

Actions taken by the County, given pressure by shoreline residents, began reducing this measure of performance, but it has not been returned to the earlier pattern (and the Willowmoor Project does not anticipate returning to it.) That is why residents insist on completion of maintenance (including removal of remaining sediment, overgrowth, and other flow blockages.)

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**Question 7: Impacts to shoreline properties really have not been that excessive, have they?**

**Response:** They have exceeded a million dollars or more per year.

WSSA polled a sample of lake residents about damages that they've suffered under raised water levels. Of 220 respondents, 84% reported definable losses amounting to more than \$1 million per year. The diagram below indicates the type of losses suffered and proportion of people affected.



**Question 8: Hasn't the lake's OHWM been authorized to change by permits?**

**Response: No one has issued a permit to raise the OHWM on Lake Sammamish.**

WA RCW calls out the following definition of the OHWM (emphasis added) -

*" (The) Ordinary high water mark" on all lakes, streams, and tidal water is that mark that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland, in respect to vegetation as that condition exists on June 1, 1971, as it may naturally change thereafter, or as it may change thereafter in accordance with permits issued by a local government or the department: PROVIDED, That in any area where the ordinary high water mark cannot be found, the ordinary high water mark adjoining salt water shall be the line of mean higher high tide and the ordinary high water mark adjoining fresh water shall be the line of mean high water.*

Some staff have cited the above definition, construing it to mean that building permits issued by a jurisdiction allow the OHWM to be raised. They don't. Issuance of permits connotes that actions to be taken under the permit will meet certain standards and that there has been sufficient analysis of the proposed actions to assure this. No such evaluation has occurred, to the public's knowledge. In addition, permit processes require a public disclosure process. No public involvement has occurred.

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**Question 9: Will completing maintenance, as requested by lake residents, result in downstream flooding?**

**Response: Completing maintenance will avoid the potential of flooding both downstream in Redmond and on lakeshore properties.**

As noted above, flow at lower lake levels (26 to 28 ft.) is being impeded by remaining overgrowth and sediment. In addition, similar blockages are evident downstream AND the County reports that Bear Creek has been allowed to bring in more flow than the Corps designed for.

By improving flow at lower lake levels, there will be earlier draw down of lake waters, and thus, more capacity in the lake and without raising its water level excessively. But, if there are downstream issues, then a full evaluation of the river basin should be undertaken before any changes are made by Willowmoor or other projects.

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**Question 10: Aren't lake residents opposed to the Willowmoor Project?**

**Response: Not true.**

Residents' primary concern is that the opportunity to correct accumulated deficiencies be included in Willowmoor along with the assurance of robust maintenance going forward.

Improvements to habitat, creation of a secondary fish stream, or cooling of river waters are fine, if properly evaluated/justified and engineered.