



**STATE OF WASHINGTON**  
**DEPARTMENT OF ECOLOGY**

*Northwest Regional Office • 3190 160<sup>th</sup> Avenue SE • Bellevue, Washington 98008-5452 • (425) 649-7000*

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To: Shane Hope, Director  
City of Edmonds Development Services

From: Erik Stockdale, Paul Anderson, and David Pater  
NWRO Shorelands and Environmental Assistance Program

Subject: Edmonds Marsh Shoreline Summary

**Edmonds Marsh Shoreline Jurisdiction Determination**

The 2007 Edmonds Shoreline Inventory and Characterization only included the Edmonds Marsh within shoreline jurisdiction as an associated wetland. Additional information gathered in 2010 indicated that a portion of the marsh has tidal inundation. This resulted in inclusion of the uplands bordering the western part of the marsh within shoreline jurisdiction.

In late 2010 Ecology staff conducted water level, salinity and hydraulic continuity assessments at the Edmonds Marsh. Based on these assessments, it was concluded that the ordinary high water mark (OHWM) of Puget Sound extended well into the western portion of the West Marsh (midpoint between SR 104 and the railroad right-of-way; the West Marsh lies to the west of SR 104), including the day-lighted portion of Willow Creek to the west of the railroad tracks (Figure 1). Based on this, portions of the marsh should be classified as a shoreline of the state.

The determination was based on the predominance of salt-tolerant vegetation (saltgrass [*Distichlis spicata*] and pickle weed [*Salicornia depressa*]), tidal fluctuations, and a continuous and contiguous water surface within this portion of the marsh (Figure 1). The salinities measured and dominant plants seen in the western portion of the marsh in December 2010 confirm, as well as aerial photographs and a previous marsh characterization, that tidal exchange is a current and ongoing process in this portion of the marsh. WAC 173-22-030 (a) (ii) defines the OHWM in low energy tidal environments as the landward limit of salt-tolerant vegetation; tolerant of salinities  $\geq 0.5$  parts per thousand (ppt). Saltgrass and pickle weed are tolerant of salinities greater than 30 ppt.

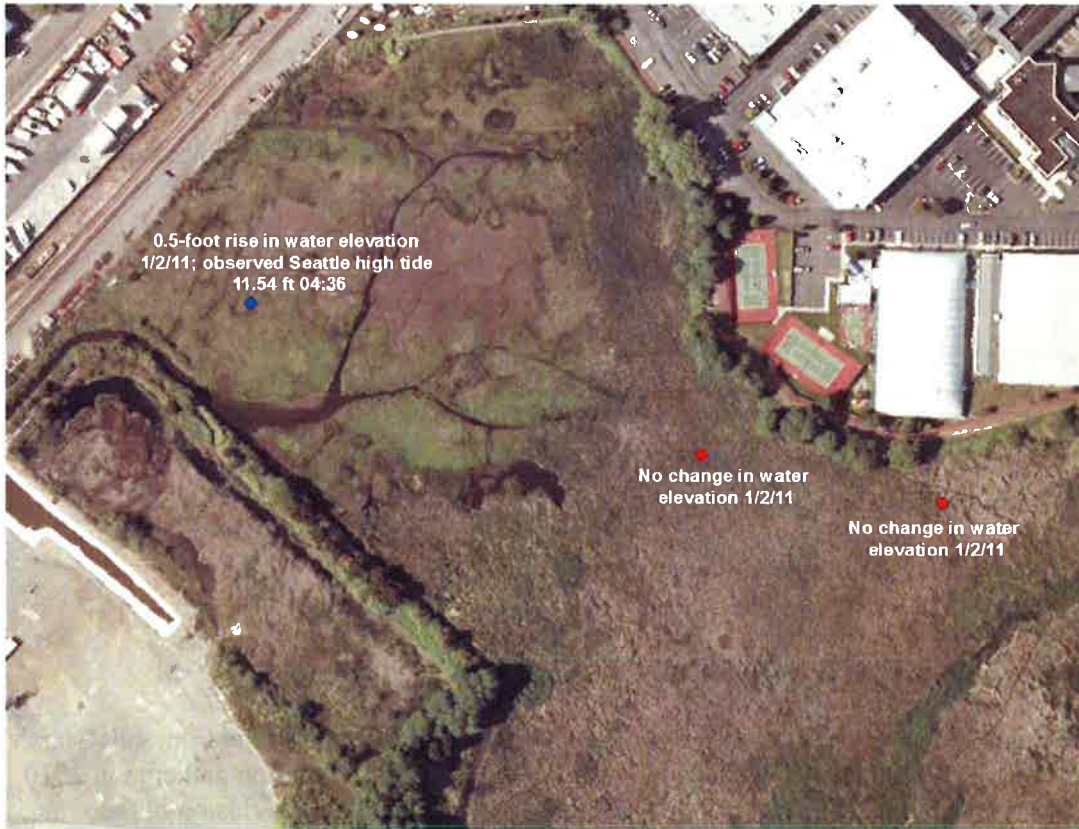


Figure 1. Approximate location of Edmonds Marsh water elevation stations, January 2011 shown on 2002 aerial photograph. Highest observed tidal height at Seattle (11.54 feet) produced a 0.5 foot elevation rise at western monitoring station (blue dot), while no change in water levels was registered at the two eastern stations (red dots). Note tidal channels and mud flats in western portion of marsh and transition to more salt-sensitive vegetation to the east of tidal channels.

A number of studies have been done at the marsh, as well as the former UnoCal site, and these assessments have found no surface water connection (except for flexible pipes) between the former UnoCal detention pond and the marsh proper or Willow Creek. Based on these assessments, Ecology does not recommend this pond be designated as an associated wetland.

The portion of Edmonds Marsh east of SR 104 (East Marsh) should be designated as an associated wetland. The East Marsh is associated due to proximity and influence to the West Marsh. Primarily, the hydraulic continuity to the West Marsh is via the Shellbarger Creek culverts.

### **Edmonds Marsh Buffers**

Edmonds Marsh is a relatively important shoreline wetland that includes estuarine and freshwater wetland communities, as well as Willow Creek, which discharges to Puget Sound immediately downstream from the marsh. A stand of intact forest is found to the southeast of the marsh between State Route 104 and Pine Street. Scattered trees are also found along the eastern and northern edges of the marsh. For terrestrial species, the habitat potential for Edmonds Marsh

and adjoining buffers is significantly constrained by the intense urban development surrounding the marsh. There are virtually no intact habitat corridors linking the marsh to other large blocks of habitat (Figure 2), which limits access for large mammals. This also limits the habitat suitability as breeding habitat for large birds such as raptors.

The ongoing discharge of inadequately treated storm water to Edmonds Marsh, as well as Puget Sound immediately downstream, is currently the greatest ecological threat to the marsh. Harbor Square on the north side of the marsh generates a considerable amount of storm water. Upgrading storm water treatment at Harbor Square and impervious surfaces that drain to the marsh is an important and necessary step in improving water quality in the marsh and Willow Creek.

While restoring the buffer at Harbor Square could contribute to improving water quality, retrofitting the storm water treatment system would provide a much greater ecological lift and require a smaller footprint. Unfortunately, the habitat benefits of a wider buffer are limited by the marsh's relative isolation within a highly developed urban landscape. A densely planted strip of trees and shrubs would provide a visual and physical screen and some additional habitat for birds, although planting trees on the levee between the Marsh and Harbor Square may not be compatible with levee maintenance requirements.



Figure 2. Edmonds Marsh and Willow Creek west of SR 104 with intact buffers outlined in red. Note tidal channels draining the western portion of the marsh.

Figure 3 (next page) depicts the proposed shoreline jurisdiction for the Edmonds Marsh. The extent of tidally-influenced salt marsh (i.e. salt-tolerant vegetation) is shown with the pink line. East of this line the marsh is classified as associated wetland.

Due to the degraded condition and constraints on the Edmonds Marsh, Ecology has classified the marsh as a Category II wetland within the locally adopted Shoreline Master Program (SMP; Section 24.40.020 (2)):

*Category II wetlands are: 1) estuarine wetlands smaller than 1 acre, or disturbed estuarine wetlands larger than 1 acre; 2) inter-dunal wetlands larger than 1 acres; 3) disturbed coastal lagoons or 4) wetlands with a moderately high level of functions (scoring between 51-69 points). Category II wetlands have standard buffer width of 75 feet.*

SMP-required change number three requires a 50-foot buffer with a minimum 15-foot structural buffer setback. A 50-foot buffer is consistent with existing conditions on the intensely developed north side of the marsh and present constraints. As discussed above, the presence of the levee also limits the water quality benefits that a buffer would provide.

The main benefit of restoring a buffer on the marsh would be some increased habitat area for urban-tolerant wildlife species, as well as providing a more natural barrier between the marsh and urban development at its edge.

A minimum 15-foot building setback would help preserve the integrity of a restored buffer. A larger setback may encourage intensive uses such as parking, which is incompatible within a buffer setback.

### **Summary and Conclusions**

Ecology considers the Edmonds Marsh to be classified as a class II wetland under the City of Edmonds Critical Areas Ordinance (CAO; see wetland classification, ECDC 24.40.020). This estuarine wetland has been significantly disturbed by urban development (significant reduction in size due to fill, fragmentation, and isolation from adjacent wetlands, chronic storm water, and hydraulic separation from Puget Sound). The CAO wetland buffer table prescribes a 75-foot buffer for a class II wetland. The City CAO also requires a 15-foot buffer setback. The recommended Ecology buffer setback is consistent with the CAO. The recommended 50-foot buffer is less than the CAO wetland classification. Ecology feels that a 50-foot buffer is more appropriate for Edmonds Marsh given the environmental impact issues outlined above and the current configuration of the Harbor Square Business Park.



Figure 3. Approximate extent of salt marsh (and OHWM) in 2006 in West Marsh.

