

Wetland and Stream Definitions (for inclusion in 83.80)

1. Buffer – The area immediately adjacent to wetlands and streams that protects these sensitive areas and provides essential habitat elements for fish and/or wildlife.
2. Buffer Setback – A setback distance of 10 feet from a designated or modified wetland or stream buffer within which no buildings or other structures may be constructed, except as provided in KZC 83.90.3(b) and 83.95.3(b). The buffer setback serves to protect the wetland or stream buffer during development activities, use, and routine maintenance occurring adjacent to these resources.
3. Class A Streams – Streams that are used by salmonids. Class A streams generally correlate with Type F streams as defined in WAC 222-16-030.
4. Class B Streams – Perennial streams (during years of normal precipitation) that are not used by salmonids. Class B streams generally correlate with Type F streams (if used by non-salmonids or they contain fish habitat) or Type Np streams (if they are perennial and do not contain fish habitat) as defined in WAC 222-16-030.
5. Class C Streams – Seasonal or ephemeral streams (during years of normal precipitation) not used by salmonids. Class C streams generally correlate with Type F streams (if used by non-salmonid fish or they contain fish habitat) or Type Ns streams (if they are seasonal and do not contain fish habitat) as defined in WAC 222-16-030.
6. Critical Areas – Critical areas include the following areas and ecosystems: (a) wetlands; (b) areas with a critical recharging effect on aquifers used for potable water; (c) fish and wildlife habitat conservation areas (streams); (d) frequently flooded areas; and (e) geologically hazardous areas. Kirkland does not contain any critical aquifer recharge areas. Critical areas may also be referred to as sensitive areas.
7. Drainage Basin – A specific area of land drained by a particular Kirkland watercourse and its tributaries.
8. Frequently Flooded Areas – All areas shown on the Kirkland sensitive areas maps as being within a 100-year floodplain, as well as all areas regulated by Chapter 21.56 KMC.
9. Minor Improvements – Walkways, pedestrian bridges, benches, and similar features, as determined by the Planning Official, pursuant to KZC 83.90.3(e) and 83.95.3(e).
10. Ordinary High Water Mark (OHWM) - The mark that will be found on all lakes and streams 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 fresh water shall be the line of mean high water. Further, in those instances where the OHWM moved farther upland in accordance with permits involving a shoreline habitat and natural systems enhancement project approved by the City, the OHWM shall be measured from the point that existed immediately prior to the enhancement project.
11. Primary Basins – The following basins, as shown on the Sensitive Areas Map: Juanita Creek, Forbes Creek, South Juanita Slope, Yarrow Creek, and Carillon Creek.

12. Qualified Professional – An individual with relevant education and training, as determined by the Planning Official, and with at least three years' experience in biological fields such as botany, fisheries, wildlife, soils, ecology, and similar areas of specialization, and including a professional wetland scientist.
13. Salmonid – A member of the fish family salmonidae, which include chinook, coho, chum, sockeye, and pink salmon; rainbow, steelhead, and cutthroat trout; brown trout; brook and dolly varden char, kokanee, and white fish.
14. Secondary Basins – Moss Bay, Houghton Slope A, Houghton Slope B, and Kirkland Slope, which are depicted on the Sensitive Areas Map.
15. Streams – Areas where surface waters produce a defined channel or bed that demonstrates clear evidence of the passage of water, including but not limited to bedrock channels, gravel beds, sand and silt beds, and defined-channel swales. The channel or bed need not contain water year-round. Streams do not include irrigation ditches, canals, storm or surface water runoff devices, or other entirely artificial watercourses, unless they are used by salmonids or convey a naturally occurring stream that has been diverted into the artificial channel.
16. Watershed – A region or area bounded on the periphery by a parting of water and draining to a particular watercourse or body of water.
17. Wetlands – Those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal conditions do support, a prevalence of vegetation typically adapted for life in saturated soils conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, retention and/or detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. However, wetlands do include those artificial wetlands intentionally created from non-wetland sites as mitigation for the conversion of wetlands.
18. Wetland rating - Wetlands shall be rated according to the *Washington State Wetland Rating System for Western Washington* (Department of Ecology 2004, or as revised). This document contains the definitions, methods and a rating form for determining the categorization of wetlands below:
 - a. Category I wetlands are those that 1) represent a unique or rare wetland type; or 2) are more sensitive to disturbance than most wetlands; or 3) are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime; or 4) provide a high level of functions. Category I wetlands include Natural Heritage wetlands, bogs, mature and old-growth forested wetlands, and wetlands that score at least 70 points on the rating form.
 - b. Category II wetlands are difficult, though not impossible, to replace, and provide high levels of some functions. These wetlands occur more commonly than Category I wetlands, but still need a relatively high level of protection. Category II wetlands score between 51 and 69 points on the rating form.
 - c. Category III wetlands have a moderate level of function, scoring between 30 and 50 points on the rating form.
 - d. Category IV wetlands have the lowest levels of functions (scores less than 30 points on the rating form) and are often heavily disturbed. These are wetlands that can often be replaced, and in some cases improved. However, replacement cannot be guaranteed

in any specific case. These wetlands may provide some important functions, and also need to be protected.



Pesticides in Lakes

Problems with Aquatic Pesticides

The Problem: Aquatic Invasive Plants, Toxic Herbicides, and Bad Permits

Invasive aquatic plants represent a serious problem for some Washington lakes. Unfortunately, many aquatic weed infestations are dealt with through the use of aquatic herbicides -- chemicals that are applied directly to lakes and can seriously harm the ecosystem, endangered species, and threaten human health.

Unfortunately for our lakes and salmon, the Washington State Department of Ecology unveiled a permit in spring 2006 that will give most lakes the ability have aquatic herbicides applied for five straight years, without any evaluation of non-toxic alternatives or monitoring of the impacts of the herbicides on the invasive plants, native plants, lake ecosystem, or human community.

This page has information about the many problems within this issue:

- Invasive Aquatic Plants
- Threats from Aquatic Herbicides
- Problems with the State Permit

Common Invasive Aquatic Plants in Washington Lakes

One invasive aquatic plant that has become widespread in Washington's water bodies is Eurasian watermilfoil (*Myriophyllum spicatum*), a fast-growing, feathery aquatic weed. Once sold as a popular aquarium plant, milfoil originated in Europe and Asia but has since become widespread across North America, arriving in lakes and streams as a stowaway on boat trailers. Milfoil can be identified by the many small divisions (generally around 12-20) on each leaflet and by the dense mats of vegetation that it can form on the surface, which may destroy salmon habitat and choke out native vegetation below.

Another problem plant for Washington is Brazilian elodea (*Egeria densa*), a bright green, robust plant with dense whorls of bushy leaves around the stem. Leaves are 1-3 cm in length, and there are usually 4 or 8 leaves in each whorl. Like milfoil, Brazilian elodea can also form thick stands of vegetation in the water, covering hundreds of acres and choking out native plants in an area where it has become well established. Originally from South America, Brazilian elodea was also introduced to the United States as an aquarium plant.

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Some other noxious aquatic weeds in Washington include: fanwort, fragrant water lily, hydrilla, parrotfeather, swollen bladderwort, water hyacinth, water primrose, and yellow floating heart. Also problematic (but not addressed here) are some wetland and emergent plants like garden loosestrife, purple loosestrife, and spartina. For more information on any of these plants, visit the Washington State Department of Ecology website at www.ecy.wa.gov.

Aquatic Pesticides

Unfortunately, many aquatic weed infestations are dealt with through the use of aquatic herbicides, which are applied directly into the water to kill the invasive species. Although these chemicals are approved for use in the United States, many of them pose potential risks to human health and the environment. More significantly, direct application into the water means that these chemicals may drift away from the original treatment site, attacking a much larger area of the lake or pond and possibly affecting swimmers or wildlife in areas which may not have posted pesticide warnings. Additionally, it is not yet known just how long some of these chemicals may persist in the environment, or what the long-term effects of exposure may be. Here are some of the most common aquatic herbicides in use today, and some risks to consider:

2,4-D (brand names include Navigate®, Aqua-Kleen®, and others):

2,4-D is a relatively fast-acting, systemic herbicide (meaning that it kills the entire plant and root structure) which has been shown to be selective towards Eurasian watermilfoil. Although widely used in America and across the world, 2,4-D is considered to be “highly toxic” since it is a severe eye irritant known to cause irreversible damage. And because 2,4-D has high mobility in soil, it is able to travel through soil pathways and into groundwater, contaminating wells located near an aquifer or waterbody treated with 2,4-D.

In nature, 2,4-D has an adverse effect on a number of species. 2,4-D has been shown to reduce the rate of survival in ducks and waterfowl. 2,4-D is acutely toxic to fish, including salmon and especially juvenile salmon. Concentrations of less than 1 part per million of 2,4-D in water have been shown to be highly lethal to endangered Chinook salmon smolts and fry, and to juvenile pink salmon and chum salmon as well. It has also been shown to impair the ability of some salmon to capture food and develop normally. 2,4-D has exhibited detrimental effects on a number of other fish and wildlife species.

Diquat (brand names include Reward®, Aquakill®, Reglone®, and others):

Diquat is a fast-acting, non-selective herbicide that kills both invasive and native plants, destroying fish habitat and making it difficult for native species to re-establish themselves once an invasive plant has been removed. While an effective killer, Diquat is at best generally a temporary solution, since invasives will always return if there is no competition from native species.

Glyphosate (brand names include Rodeo®, Roundup®, and others):

Recent studies have shown a strong correlation between exposure to Glyphosate and increased incidence of non-Hodgkin's lymphoma (a type of cancer). In women, Glyphosate exposure has been linked to a higher risk of miscarriage during pregnancy, and to an increased risk of attention deficit disorder (ADD/ADHD) in children.

Fluridone (brand names include Sonar®, Avast®, and others):

Fluridone is a slow-acting systemic herbicide used to control underwater plants, a 7-12 week process during which time a constant level of concentration must be maintained in the waterbody. And like many other herbicides, Fluridone is non-selective, killing native plants along with target species and making it difficult for native species to re-establish themselves.

You can read more about potential hazards of these and other pesticides at:

- www.pesticideinfo.org
- www.pesticide.org

Problems with the State Permit

In Washington state, the ability to use aquatic herbicides in lakes is regulated by the Department of Ecology under a National Pollutant Discharge Elimination System Permit (NPDES). In spring 2006, Ecology released the current NPDES permit. Unfortunately, the permit allows almost anyone to be approved to put herbicides into their lake. Here are some of the major problems with the permit:

1. The permit allows each lake to treat annually for up to five years, the entire length of the NPDES permit, without needing any review by Ecology. This means that no one is required to check what impact the herbicides have had on the lake ecosystem or if aquatic weeds are even a continuing problem.
2. There is no requirement for lakes to consider or use non-toxic alternatives before being allowed to use herbicides. Many effective non-toxic vegetation control methods are available in Washington. Read our non-toxic alternatives page for more information.
3. Notification of neighbors is late and sorely inadequate. Anyone who is applying for coverage under the state permit (which allows them to use aquatic herbicides) is not required to notify their neighbors that the permit application has been submitted. Only if someone sees one of the small notices in a local paper would they know that they could comment on the permit application. No notices of the plans are posted locally until the permit coverage is granted and herbicide applications are already planned in 10 to 21 days.
4. The permit is inappropriate for large lakes, like Lake Washington. The permit assumes that a broad section of a community would be engaged in the decision to use herbicides in the lake. However, for large lakes like Lake Washington, any property owner along the lake can apply for a permit to use herbicides in the lake without ever coordinating with or talking to their neighbors. There are no entities that coordinate vegetation management in Lake Washington, which led to upwards of 70 separate herbicide applications to the lake in 2004. See our pages about Lake Washington and Portage Bay for more information on this problem and possible solutions.

Teresa Swan

From: Daved [Daved@waterfrontconstruction.com]
Sent: Wednesday, September 03, 2008 1:48 PM
To: Cathy Beam; MPaine@bellevuewa.gov; Peter Rosen; jding@ci.kenmore.wa.us; Robert Grumbach; EConkling@ci.renton.wa.us; mvannostrand@ci.sammamish.wa.us; Margaret.glowacki@seattle.gov; mhgreen@comcast.net; Harry.reinert@kingcounty.gov; SBennett@ci.lake-forest-park.wa.us; Paul Stewart; travis.saunders@mercergov.org; White, Jean; george.steier@mercergov.org; Burcar, Joe (ECY); Matt.torpey@mercergov.org; Teresa Swan
Cc: eride@msn.com; donovan@donovantracy.com; raa@vnf.com; Dennis Reynolds
Subject: SMP UPDATE MEETINGS INVOLVING ANY DISCUSSION ON DEVELOPMENT STANDARDS FOR PIERS AND BULKHEADS ON LAKE WAHSINGTON

Dear Local Government SMP Update Point of Contact,

Hope all of you are well.

As we approach the point where the actual development standards for piers and bulkheads are discussed and put in writing to become your local law, it is also the time when local governments will need to decide if they are going to consider adopting the Corps RGP-3 guidelines being pushed by DOE or what best serves local property owners for projects that have an insignificant impact on ecological functions, listed species and critical habitat according to recent project approvals and reviews.

I hope everyone had the opportunity to review the last couple e-mails I forwarded since they pointed out a possible system to use in evaluating future projects without sending everything to DOE for a variance to be denied and other valuable information. I am also waiting to hear back from DOE on the e-mail sent on 4/7/2008 regarding 'no net loss of ecological' functions.

Last week I met with a local planner and biological consultant and had the opportunity to present a slide show of recently constructed projects on Lakes Washington and Sammamish, bulkheads and natural shoreline projects, and also presented drawings on projects approved by local, state and federal agencies, each of which exceeded or far exceeded the guidelines listed in the RGP-3. All of the projects went through the local SMP and SEPA process (which is forwarded to DOE for comment or appeal), WDFW Hydraulic Project Approval Process, the Corps Section 10 Process and the local Building Permit process. Each one, and many others stacked too high to bring to the meeting, received approval based on current regulatory standards and without any question represented an improvement over previously existing conditions for each of these properties along the shorelines for which you are responsible. Each project at one point or another went before every local, state and federal agency for review and comment prior to being approved.

The e-mail sent to you on 8/22/2008 contained a list of environmental improvements that have resulted through the responsible application of existing local Shoreline Master Programs combined with strict but flexible state and federal guidelines for nearshore and overwater development. We will not see nor hear of such a list from state regulators nor will there be any studies done to support this easily verifiable information. We will hear the number of piers and bulkheads on the lakes compared to 10, 20 or 50 years ago but we will not be told how regulations currently in place combined with modern design standards have made a measurable improvement over the gargantuan solid-decked piers of old. We will be told how much of the shoreline has bulkheads but will not be told how much has been restored to natural shoreline or that the simple installation of nearshore fill without removal of a bulkhead can provide excellent shallow nearshore habitat for migrating and spawning. Simply placed, there is no balanced perspective to be found.

Can each of you please let me know when future meetings of councils, boards or commissions where the SMP development standards for piers and bulkheads will be discussed will be held? It is very time consuming trying to go through each local website to hunt down the information. Thank you for your help.

We want to be a part of the process and provide "first hand" information on what has recently been approved along the shorelines of Lake Washington and Sammamish. I am available to meet with anyone

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who would like to review a slide show of projects approved over the past few years (since the RGP-3 was implemented) and review drawings on projects that do not align with the RGP-3 but were approved because they reflected an improvement over existing conditions.

We welcome the opportunity to assist local governments in making informed decisions based on factual information that will protect property rights, win the respect of your citizens and exercise responsible stewardship of the environment. We believe each of these can be accomplished through the SMP update process.

Thank you for your time. If you would like to discuss anything or schedule a meeting please contact me via e-mail or at 425-357-0312.

Have a great week.

Dave Douglas
Permit Coordinator
Waterfront Construction, Inc.