

**FACT SHEET FOR THE
AQUATIC PLANT AND ALGAE MANAGEMENT NPDES GENERAL
PERMIT**

**DRAFT
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DEPARTMENT OF ECOLOGY

SUMMARY

This fact sheet is a companion document to the National Pollutant Discharge Elimination System (NPDES) *General Permit*¹ for management of aquatic plants and algae. It explains the nature of the proposed *discharge*, the Washington State Department of Ecology's (Ecology) decisions on limiting *pollutants* in the receiving water, and the regulatory and technical basis for these decisions.

The Aquatic Plant and Algae Management General Permit (permit) regulates the use of *pesticides* and other products applied to manage *aquatic nuisance plants*, *aquatic noxious weeds*, *aquatic quarantine-listed weeds*, *algae*, and nutrients in freshwaters. The permit covers activities that result in a discharge of *herbicides*, *algaecides*, *adjuvants*, *marker dyes*, *shading products*, *biological water clarifiers*, or *nutrient inactivation products* (collectively "chemicals") into fresh water bodies of the state of Washington. The permit also covers lake *shoreline* and roadside/ditch bank *emergent vegetation* management activities where these chemicals may enter the water. The permit covers only the chemical management of plants and algae. Project proponents may need other permits if they conduct plant and algae management activities using manual, mechanical, or biological methods.

Since the *Headwaters, Inc. v. Talent Irrigation District* Ninth Circuit Court decision, Ecology has maintained that to discharge chemicals to waters of the state, coverage under an NPDES permit is required. Ecology has issued general and *individual* NPDES permits for discharges of aquatic pesticides and other chemicals since 2002. The Sixth Circuit Court recently ruled in *National Cotton Council et al. v. The Environmental Protection Agency (EPA)* that the discharge of *pesticides* and their residues to waters of the state requires NPDES coverage. This decision means that NPDES permitting is now required for all aquatic pesticide applications throughout the United States. EPA has developed a draft general NPDES permit for this purpose and the EPA permit will become effective April 2011. In Washington, the EPA permit will cover aquatic pesticide applications on federal and Tribal Lands.

The Aquatic Plant and Algae Management permit addresses three aquatic plant and algae management scenarios. The *eradication* category establishes conditions for eradication or 100 percent removal of aquatic noxious weeds or aquatic quarantine listed weeds within a water body. The *control* category establishes conditions for the partial removal of aquatic nuisance plants, algae, aquatic noxious weeds, and aquatic quarantine-list weeds within a water body. The nutrient inactivation category establishes conditions for nutrient inactivation projects such as the addition of alum to water bodies to prevent phosphorus release from sediments.

Ecology may change the proposed terms, limits, and conditions contained in the draft permit, subsequent to written public comments it receives and testimony provided at public hearings. The draft permit does not authorize a violation of surface water quality standards or the violation

¹ The text of the fact sheet contains italicized words or phrases. These words or phrases are the first usage in this document and are defined in the Glossary, Appendix A.

any other applicable local, state, or federal laws or regulations. Ecology may require any person seeking coverage under this permit to obtain coverage under an *individual permit* instead.

Ecology will consider any person who applies chemicals to surface fresh water without coverage under this general permit, another applicable general permit, an applicable individual permit, or a *state experimental use permit* to be operating without a discharge permit and subject to potential enforcement action.

Ecology proposes to issue this general permit so that dischargers operating under coverage of this permit will comply with the *Federal Clean Water Act* and with the Washington Water Pollution Act chapter 90.48.080 Revised Code of Washington (RCW). The *Permittee* must monitor (depending on the type of chemical application), notify the public, post signs at treatment sites, follow Washington State Fish and Wildlife timing windows, and provide annual treatment and monitoring reports to Ecology.

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INTRODUCTION

This fact sheet is a companion document to the draft revised Aquatic Plant and Algae Management General Permit (permit) and provides the legal and technical basis for permit reissuance (required in Washington Administrative Code (WAC 173-226-110)). Since 2001, and based on *Headwaters v. Talent Irrigation District*, the Washington State Department of Ecology (Ecology) has maintained that the discharge of pesticides to waters of the state requires coverage under a National Pollutant Discharge Elimination System (NPDES) permit.

The current permit, which expires April 2011, has covered discharges of herbicides, algaecides, nutrient inactivation products, marker dyes, shading products, adjuvants, and water clarification products to *surface waters of the state* of Washington since 2006. Ecology proposes to issue an updated permit to continue to allow the use of these products for the purpose of controlling aquatic plants and algae, eradicating aquatic noxious and quarantine listed weeds, and controlling excess nutrients.

Ecology determined it was appropriate to issue a general permit for aquatic plant and algae management because:

- Aquatic plant and algae management activities have a statewide scope.
- These activities are similar at different sites.

Ecology may still require individual permits where a proposed activity requires additional guidance, or when an individual Permittee requests an individual permit and Ecology agrees to develop and issue one.

This permit helps Ecology:

- Mitigate and condition the use of chemicals in water.
- Track pesticide rates and use locations.
- Ensure that public notifications and postings occur when waters are treated.

This fact sheet explains the nature of the proposed discharges, Ecology's decisions on limiting the pollutants in the receiving water, and the regulatory and technical basis for these decisions. WAC 173-226-130 specifies public notice of the draft permit, public hearings, comment periods, and public notice of issuance before Ecology can issue the general permit. This fact sheet, application for coverage, and draft permit are available for review (see Appendix A - Public Involvement - for more detail on public notice procedures).

After the public comment period closes, Ecology will summarize and respond to substantive comments. These comments may cause Ecology to revise some of the permit language and requirements. The summary and response to comments will become part of the file for this permit and parties submitting comments will receive a copy of Ecology's response.

Ecology will **not** revise the original fact sheet after it publishes the public notice. Appendix C (Response to Comments) will summarize comments and the resultant changes to the permit.

AQUATIC PESTICIDE LEGAL HISTORY

The Federal Clean Water Act (CWA)

The Federal Clean Water Act [CWA, 1972, and later modifications (1977, 1981, and 1987)], established water quality goals for navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the NPDES system of permits, which the United States Environmental Protection Agency (EPA) administers. The EPA has delegated responsibility for administering the NPDES permit program to the State of Washington. The delegation of authority is based on chapter 90.48 RCW that defines Ecology's authority and obligations in administering the NPDES permit program. Ecology does not have the authority to issue NPDES permits to federal facilities or on federal and Tribal Lands.

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

The following excerpt is from the EPA 2010 NPDES Pesticides General Permit Fact Sheet:

EPA regulates the sale, distribution and use of pesticides in the U.S. under the statutory framework of the *Federal Insecticide, Fungicide, and Rodenticide Act* of 1979, to ensure that when used in conformance with the label, pesticides will not pose unreasonable risks to human health and the environment. All new pesticides must undergo a registration procedure under FIFRA during which EPA assesses a variety of potential human health and environmental effects associated with use of the product. Under FIFRA, EPA is required to consider the effects of pesticides on the environment by determining, among other things, whether a pesticide “will perform its intended function without unreasonable adverse effects on the environment,” and whether “when used in accordance with widespread and commonly recognized practice [the pesticide] will not generally cause unreasonable adverse effects on the environment.” 7 U.S.C. 136a(c)(5).

In performing this analysis, EPA examines the ingredients of a pesticide, the intended type of application site and directions for use, and supporting scientific studies for human health and environmental effects and exposures. The applicant for registration of the pesticide must provide specific data from tests done according to EPA guidelines. When EPA approves a pesticide for a particular use, the Agency imposes restrictions through labeling requirements governing such use. The restrictions are intended to ensure that the pesticide serves an intended purpose and avoids unreasonable adverse effects. It is illegal under Section 12(a)(2)(G) of FIFRA to use a registered pesticide in a manner inconsistent with its labeling. States have primary authority under FIFRA to enforce “use” violations, but both the States and EPA have ample authority to prosecute pesticide misuse when it occurs.

After a pesticide has been registered, changes in science, public policy, and pesticide use practices will occur over time. FIFRA, as amended by the Food Quality Protection Act of

1996, mandates a registration review program, under which [EPA] periodically reevaluates pesticides to make sure that as the ability to assess risk evolves and as policies and practices change, all registered pesticides continue to meet the statutory standard of no unreasonable adverse effects to human health or the environment. [EPA] is implementing the registration review program pursuant to Section 3(g) of FIFRA and will review each registered pesticide every 15 years to determine whether it continues to meet the FIFRA standard for registration. Information on this program is provided at: http://www.epa.gov/oppsrrd1/registration_review/.

FIFRA, as administered by the EPA and the Washington State Department of Agriculture (WSDA), requires that all persons that apply pesticides classified as restricted use be certified according to the provisions of the act, or that they work under the direct supervision of a certified *applicator*. Commercial and public applicators must demonstrate a practical knowledge of the principles and practices of pest control and safe use of pesticides, which they accomplish by means of a “core” examination. In addition, applicators using or supervising the use of any restricted use pesticides purposefully applied to standing or running water (excluding applicators engaged in public health related activities) must pass an additional exam to demonstrate competency as described in the code of federal regulations as follows:

Aquatic applicators shall demonstrate practical knowledge of the secondary effects which can be caused by improper application rates, incorrect formulations, and faulty application of restricted pesticides used in this category. They shall demonstrate practical knowledge of various water use situations and the potential of downstream effects. Further, they must have practical knowledge concerning potential pesticide effects on plants, fish, birds, beneficial insects, and other organisms which may be present in aquatic environments. Applicants in this category must demonstrate practical knowledge of the principals of limited area application (40 CFR 171.4).

Any person wishing to apply pesticides to waters of the state must obtain an aquatic pesticide applicator license from the Washington State Department of Agriculture, or operate under the supervision of a licensed applicator. See <http://www.agr.wa.gov/PestFert/LicensingEd/Licensing.htm> for information on Washington State licensing requirements and testing.

Headwaters, Inc. v. Talent Irrigation District

In May 1996, as part of routine vegetation management, the Talent Irrigation District (TID) in southern Oregon applied the pesticide acrolein to a system of irrigation canals. Acrolein-treated water discharged into a fish-bearing creek causing a fish kill. Subsequently, Headwaters, Inc. and Oregon Natural Resources Council filed a Clean Water Act citizen suit against the TID for applying a pesticide into a system of irrigation canals without an NPDES permit.

The Ninth Circuit Court in *Headwaters, Inc. v. Talent Irrigation District* found that the applicator should have obtained coverage under an NPDES permit prior to application of aquatic

pesticides to an irrigation canal. The decision addressed residues and other products of aquatic pesticides.

Reversing a district court's opinion, the Ninth Circuit Court held that application of the pesticide in compliance with the FIFRA labeling requirements did not exempt TID from having to obtain an NPDES permit and that the irrigation ditches were "waters of the United States" under the CWA (March 12, 2001).

Based on the TID court decision, Ecology determined that all pesticide applications to state surface waters required coverage under NPDES permits. Ecology issued its first NPDES general permits for pesticide applications to Washington's surface waters in 2002. Prior to 2001, Ecology regulated the application of aquatic pesticides to most surface waters by issuing administrative orders (called Short-Term Modifications of Water Quality Standards) to Washington-state licensed applicators. Since the Talent decision, there have been further court challenges about the applicability of NPDES permits to aquatic pesticide application as discussed below in this section of the Fact Sheet.

League of Wilderness Defenders et al. v. Forsgren

In the 1970's the Douglas fir tussock moth defoliated approximately 700,000 acres of Douglas fir in Idaho, Oregon, and Washington. In response to this outbreak, the United States Forest Service (USFS) developed a system to predict tussock moth outbreaks and control them via aerial spraying of insecticides. Based on its warning system, the USFS predicted an outbreak in 2000-2002 and designed a spraying program.

In 2002, the League of Wilderness Defenders et al. filed suit against the USFS for failing to obtain a NPDES permit under the Clean Water Act for the application of insecticides directly above surface waters. The USFS argued that any discharge of insecticides was nonpoint pollution and that the discharges fell under federal exemptions (40 CFR 122.3) for silviculture activities.

The Ninth Circuit Court reversed a district court's opinion upon appeal. It held that aerial spraying (from an aircraft fitted with tanks) directly to, and over, surface water is a point source of pollution and requires an NPDES permit.

Fairhust v. Hagener

The Montana Department of Fish, Wildlife, and Parks (Department) began a ten-year program to reintroduce threatened native westslope cutthroat trout into Cherry Creek. The Department used antimycin-A, a piscicide, to remove nonnative trout from Cherry Creek over several years, after which they planned to reintroduce native trout.

The Department was sued under the citizen suit provision of the CWA for failing to obtain an NPDES permit before applying antimycin-A to surface waters. During summary judgment, the district court decided in favor of the Department. On appeal, the Ninth Circuit court affirmed the district court's opinion. The Ninth Circuit opined that:

A chemical pesticide applied intentionally, in accordance with a FIFRA label, and with no residue or unintended effect is not “waste”, and thus not a “pollutant” for the purposes of the Clean Water Act. Because the Department’s application of antimycin-A to Cherry Creek was intentional, FIFRA compliant, and without residue or unintended effect, the discharged chemical was not a pollutant and the Department was not required to obtain a NPDES permit.

Neither the Court nor the EPA offered any guidance regarding which pesticide applications would result in no residue or unintended effect.

Northwest Aquatic Ecosystems v. Ecology, Washington Toxics Coalition

In February 2006, the Pollution Control Hearings Board (PCHB) issued a final order in Case #05-101, *Northwest Aquatic Ecosystems v. Ecology, Washington Toxics Coalition*. This case focused on a number of issues, one of which was whether an NPDES permit is required for the use of federally registered pesticides since the Ninth Circuit Court ruled in *Fairhurst v. Hager*.

The PCHB ruled on summary judgment that the *Fairhurst* decision does not provide a blanket exemption for the application of aquatic pesticides. Pesticides must meet identified conditions before Ecology can consider it outside the category of a pollutant under the CWA. The pesticide must:

- (1) Be applied for a beneficial purpose.
- (2) Be applied in compliance with FIFRA.
- (3) Produce no pesticide residue.
- (4) Produce no unintended effects (*Fairhurst*, 422 F.3d at 1150).

Northwest Aquatic Ecosystems failed to provide any evidence specifically addressing how the use of the aquatic herbicides diquat and endothall on the proposed sites would meet the four conditions identified in *Fairhurst*. In the absence of such evidence, *Fairhurst* provided no basis for the PCHB to conclude that an NPDES permit is not required for the proposed pesticide applications.

EPA Final Rule

In November 2006, EPA issued a final rule under the CWA entitled *Application of Pesticides to Waters of the United States in Accordance with FIFRA*. This rule replaced a draft interpretive statement EPA issued in 2003 concerning the use of pesticides in or around waters of the United States. The rule states that any pesticide meant for use in or near water, applied in accordance with the FIFRA label, is not a pollutant under the CWA. Therefore, such applications are not subject to NPDES permitting.

After EPA issued the rule, Ecology met with stakeholders to seek input on how it should regulate the use of aquatic pesticides. Ecology also provided the public with a three-week comment period. Stakeholders affiliated with each of the seven affected permits (Mosquito, Noxious Weeds, Aquatic Plant and Algae, Irrigation, Oyster Growers, Fish Management, and Invasive

Moth) commented. The consensus of these stakeholders was that Ecology should continue to issue joint NPDES/state waste permits to regulate aquatic pesticide applications.

To apply a pesticide to the water, state law requires the applicator to obtain a short-term modification of the water quality standards from Ecology. Until 2001, when this process was challenged, Ecology issued modifications using an administrative order. Currently, the only legal vehicle for implementing a short-term modification is a permit. State law defines only two types of permits for surface water discharges: NPDES (federal) and State Waste Discharge (state).

Because of stakeholder consensus and the need for a permit to implement short-term modifications, Ecology decided that Washington would continue to use NPDES permits as the legal vehicle to regulate the use of aquatic pesticides in and around Washington state waters. Ecology believes that these permits provide the best protection of water quality, human health, and the environment.

National Cotton Council et al. v. EPA

In November 2006, EPA issued a final rule under the CWA that determined that pesticides applied in accordance with the FIFRA label are exempt from NPDES permitting requirements. Petitioners filed for review of EPA's final rule in 11 of the 12 federal circuit courts that are able to hear regulatory arguments. The federal courts combined the petitions into one case within the Sixth Circuit Court.

The Sixth Circuit Court made several findings. First, it agreed with the Ninth Circuit (*Fairhurst v. Hager*) that if a chemical pesticide is intentionally applied to water for a beneficial purpose, and leaves no waste or residue after performing its intended purpose, the discharge would not require an NPDES permit.

Second, the Court found excess pesticides and residues that make their way into waters during and after any pesticide application constitute wastes under the CWA and must have NPDES permit coverage before discharge occurs

Finally, the Sixth Court determined that because EPA's final rule exempted discharges that the plain reading of the CWA includes as requiring an NPDES permit, the rule could not stand.

After a later motion, the Sixth Circuit granted EPA a stay on the effective date of this ruling for 24 months to allow the agency to develop an NPDES permit for aquatic pesticide discharges. EPA is currently developing a general permit for the discharge of pesticides to manage aquatic plants, *invasive* species, larval and aerial mosquito control, and other aquatic pesticide uses. EPA intends to issue the general permit by December 2010. In Washington, EPA's general permit will cover aquatic pesticide activities conducted on federal lands and Tribal Lands. The state regulates aquatic pesticide application to all other lands/waters.

LEGAL BASIS FOR MANAGING AQUATIC PLANTS AND ALGAE IN WASHINGTON

RCW 90.48.445 Aquatic Noxious Weed Control - Water quality Permits

In 1991, the Washington State Legislature directed Ecology to issue or approve water quality permits for use by federal, state, or local government agencies and licensed applicators for the purpose of using, for aquatic noxious weed control, herbicides and surfactants registered under state or federal pesticide control laws. The legislature also specified that the issuance of these permits were subject only to compliance with federal and state pesticide label requirements, FIFRA requirements, the *Washington Pesticide Control Act*, the Washington Pesticide Application Act, and the State Environmental Policy Act (SEPA) (with some exceptions for spartina projects).

The Legislature further stated that Ecology may not use this permit authority to otherwise condition or burden weed control efforts and that permits are effective for five years, unless the applicant requests a shorter duration.

RCW 90.48.447 Aquatic Plant Management Program

Excerpts from the notes, findings, and purpose of this 1999 statute state:

The legislature finds that the environmental, recreational, and aesthetic values of many of the state's lakes are threatened by the invasion of nuisance and noxious aquatic weeds. Once established, these nuisance and noxious aquatic weeds can colonize the shallow shorelines and other areas of lakes with dense surface vegetation mats that degrade water quality, pose a threat to swimmers, and restrict use of lakes. Algae can generate health and safety conditions dangerous to fish, wildlife, and humans. The current environmental impact statement is causing difficulty in responding to environmentally damaging weed and algae problems. Many commercially available herbicides have been demonstrated to be effective in controlling nuisance and noxious aquatic weeds and algae and do not pose a risk to the environment or public health. The purpose of this act is to allow the use of commercially available herbicides that have been approved by the environmental protection agency and the department of agriculture and subject to rigorous evaluation by the department of ecology through an environmental impact statement for the aquatic plant management program." [1999 c 255 § 1.]

RCW 17.10 Noxious Weeds – Control Boards

RCW 17.10 is Washington's primary noxious weed law and it holds landowners responsible for controlling noxious weeds on their property. Its purpose is to "limit economic loss and adverse effects to Washington's agricultural, natural, and human resources due to the presence and spread of noxious weeds on all terrestrial and aquatic areas of the state."

Chapter 16.750 WAC State Noxious Weed List and Schedule of Monetary Penalties

This rule sets out Washington's Noxious Weed List, which the State Noxious Weed Control Board updates each year. It organizes noxious weeds by classification. Class A noxious weeds are *non-native* species that are limited in distribution in Washington. State law requires that landowners eradicate these weeds. Class B noxious weeds are non-native species that are either absent from or limited in distribution in some portions of the state, but very abundant in other areas. The goal is to contain the plants where they are already widespread and prevent their spread into new areas. Class C noxious weeds are non-native plants that are already widespread in Washington. Counties can choose to enforce control or they can educate residents about controlling Class C noxious weeds.

There are many species of aquatic and *wetland* plants on the state noxious weed list (e.g., hydrilla, variable-leaf milfoil, Eurasian watermilfoil, Brazilian elodea, purple loosestrife, yellow flag iris, etc.). All species listed as noxious weeds on the state list are or were present in Washington. Some, like hydrilla, have been recently eradicated.

Chapter 16.752 WAC Noxious Weed Control

This rule establishes a wetland and aquatic weed quarantine. It prohibits the transport, sale, or distribution of specific plants within the state of Washington. Many plants on the quarantine list are present in Washington, while others pose a threat to Washington, but are not currently in the state (e.g., water chestnut - *Trapa natans*).

BIOLOGICAL BACKGROUND, AQUATIC NATIVE PLANTS, AQUATIC NOXIOUS WEEDS, AND ALGAE

Native Aquatic Plants

Benefits: Native aquatic plants and algae are essential components of healthy aquatic ecosystems. Algae form the base of the food chain and provide food to zooplankton. Zooplankton are in turn, eaten by small fish, which are eaten by larger fish that are consumed by waterfowl, eagles, and other top predators. Aquatic plants provide oxygen, food, habitat, and shelter for fish, zooplankton, waterfowl, and aquatic mammals. Young fish and amphibians use aquatic plants as cover from predatory fish and birds, making aquatic plants important nurseries for immature fish, frogs, and salamanders. Moderately productive systems will support healthy fish populations that in turn, lead to good fishing opportunities for humans. Some aquatic plants produce seeds, tubers, and vegetation that are important in the diets of waterfowl. Aquatic vegetation also supports small animals such as insects, snails, and crustaceans that provide food for other animals. Some animals use aquatic plants as nesting material or construct nests in vegetated areas. Rooted aquatic plants protect shorelines from erosion due to wave action or currents. They also help stabilize the sediment, which can increase water clarity. Aquatic plants can help remove nutrients from the water that algae may otherwise use. This can help keep the water clear. A diverse native plant community will resist or slow down the invasion of noxious weeds. Many people enjoy the serenity and beauty of a well-balanced system with diverse shoreline and in-water vegetation that attracts wildlife.

Detriments: Native aquatic plants can become nuisance plants when they become dense and so numerous that they impede recreational activities such as swimming, wading, water skiing, boating, and fishing. Some lake residents fear for their or their children's safety when swimming in dense plant growth. Should a swimmer get into trouble, he or she can be difficult to locate in plant beds. When growth is dense, too many plants can harm some fisheries, causing stunted fish. Although aquatic plants are a source of oxygen, they may also contribute to low oxygen conditions when they die and decompose. Dying plants and algae blooms and the subsequent depletion of oxygen in the water may lead to fish kills, particularly in the summer and early fall. Decomposing vegetation may also produce strong unpleasant odors. Excessive growth of aquatic vegetation may impede water access, water flow, and increase localized flooding. It may lead to more rapid sedimentation and filling in of a lake as vegetation traps soil and builds up sediments, decreasing water depth. When lake vegetation creates stagnant water, it increases breeding habitat for mosquitoes, other nuisance insects, and provides habitat for snails that can harbor the parasite that causes swimmer's itch. A vegetation-choked lake may decrease property values and many lake residents find masses of vegetation unsightly, particularly when covered by a layer of *filamentous algae*.

Aquatic Noxious Weeds

Noxious weeds are not native to Washington and are not desirable plants for Washington ecosystems. Many noxious weeds originate from other continents although some aquatic noxious weeds in Washington are native to the east coast of North America (e.g., fragrant water lily or variable-leaf milfoil). Introduction pathways include the aquarium and nursery industry, internet trading, boats, and boat trailers. Because noxious weeds are often introduced without the diseases and insects that keep them in control in their new habitat, they can spread rapidly, destroying native plant and animal habitat, reducing species diversity, damaging recreational opportunities, lowering property values, and clogging waterways. In recognition of the economic and ecological threats caused by noxious weeds, Washington State has enacted laws to control their introduction and spread (chapter 17.10 RCW – Noxious Weeds – Control Boards, chapter 16-750 WAC – State Noxious Weed List and Schedule of Monetary Penalties, chapter 16-752 WAC – Noxious Weed Control (Quarantine). Landowners may be legally obligated to eradicate or control noxious weeds, depending on their classification and distribution within the state. See <http://www.ecy.wa.gov/programs/wq/plants/weeds/exotic.html> for more information about Washington's noxious weeds.

Aquatic herbicide application is often needed to remove freshwater noxious weeds from Washington's lakes. The impacts of these species are significant and pervasive and they have profound impacts on species diversity, habitat, water quality, recreation, water supply, drinking water, flood control, safety, and health. When noxious weeds become widespread within a water body, aquatic herbicides are often the most effective tools to remove these plants and restore the ecosystem.

Freshwater noxious weeds in Washington may form dense single species stands that exclude and outcompete native aquatic plants. Some species, such as Eurasian watermilfoil, are somewhat

unpalatable and provide less food for waterfowl and aquatic animals than do native species. Researchers have shown that milfoil stands support fewer invertebrates than does a healthy native plant community. A study in a New York lake documented the loss of species within a diverse plant community when milfoil invaded the lake.

Research by the University of Washington and others has demonstrated that dense stands of mat-forming weeds such as milfoil and the fragrant waterlily can alter water quality in lakes. The dense vegetation blocks wind from mixing surface oxygenated waters throughout the water column. Often extremely low oxygen conditions develop under these mats. Juvenile steelhead suspended in cages within milfoil mats in Lake Washington did not survive in the deeper, less oxygenated waters. The high photosynthesis rate on the surface may increase the pH to over 10. The mats slow water movement and the surface temperatures become much warmer than the underlying water. The low oxygen conditions may also lead to increased phosphorus release from the sediments as the sediments become anaerobic. The increased phosphorus loading may lead to algal blooms. The vegetation mats slow water movement and organic material tends to build up underneath them, thus enhancing the rate of sediment accumulation and accelerating the life cycle of the lake. Generally, native aquatic plants form a more open community allowing more wind mixing to occur.

Noxious submersed aquatic weeds affect the fishery by altering water quality and provide so many hiding places for prey fish that predator fish, like bass, form stunted populations. They also hinder anglers by tangling fishing gear and making boating difficult. Impacts to recreation from noxious aquatic weeds are significant. Boaters are unable to move through dense beds without stopping every minute or so to remove plants from their propellers. Sailboat owners reported that they were physically unable to leave their boat moorage because of the dense milfoil and Brazilian elodea beds in Lake Washington marinas in mid-summer. Swimmers have panicked and drowned in dense plant stands. Lifeguards consider any aquatic plant within swimming areas to be a safety hazard because they are unable to see the swimmers underwater and rescue is difficult. The sheer mass of noxious weeds displaces water and can cause flooding to occur. Stagnant water produced in the mats is an excellent breeding ground for mosquitoes. Eradicating noxious weeds or keeping their populations at low levels can restore native plant communities to pre-invasion conditions.

Algae

Cyanobacteria (also known as *blue-green algae*) and algae species can form dense populations in the water called blooms. Cyanobacteria blooms may turn the water pea soup green, brownish, or even red and often look like somebody has spilled paint in the water. When cyanobacteria start decomposing, they can turn bright blue, turquoise, or white. Some cyanobacteria species produce potent liver and nerve toxins, and exposure to toxic algae has resulted in the deaths of pets and livestock in Washington as well as contributed to human illness. Cyanobacterial blooms and their decomposition also produce extremely unhealthy conditions for fish and wildlife. To protect human health, some local health districts may close lakes to contact recreation when blooms test toxic. Cyanobacteria may also produce strong noxious odors when decomposing.

Filamentous algae are freshwater green algae that frequently form cloud-like mats in the water. These algae often grow in shallow water in association with aquatic plants. Some lake residents find these filamentous mats unsightly. Algal mats may interfere with boating and swimming, but they do not produce harmful toxins. They are a nuisance rather than a public health risk.

Ecology does not allow chemical *treatment* of other types of algae, with the exception of *harmful algae species* (algae known to harm humans or wildlife generally through the production of toxins). Most algae are beneficial and form the basis of the food web. Blooms of these beneficial algal species are short-lived, are not harmful to humans, pets, or wildlife, and generally not seen as nuisance blooms.

Additional Information Sources about Aquatic Plants and Algae

- *Why Does Ecology Allow Treatment of Native Aquatic Plants?*
http://www.ecy.wa.gov/programs/wq/pesticides/final_pesticide_permits/lakes/FAQNativePlantControl.pdf
- *Native Freshwater Plants:* <http://www.ecy.wa.gov/programs/wq/plants/native/lakes.html>
- *The Uses and Benefits of Aquatic Plants:*
<http://www.ecy.wa.gov/programs/wq/plants/native/uses.html>
- *Lakes and Aquatic Plants:* <http://gardening.wsu.edu/text/nvaquatc.htm>
- *An Aquatic Plant Identification Manual for Washington's Aquatic Plants:*
<http://www.ecy.wa.gov/programs/wq/plants/plantid2/index.html>
- *Advantages and Disadvantages of Aquatic Plant Management Techniques:*
<http://www.aquatics.org/pubs/madsen2.htm>
- *Freshwater Algae Program:* <http://www.ecy.wa.gov/programs/wq/plants/algae/index.html>
- *Cyanobacteria (Blue-Green Algae):* <http://www.doh.wa.gov/ehp/algae/default.htm>
- *North America Lake Management Society – Blue Green Algae Pages:*
<http://www.nalms.org/nalmsnew/nalms.aspx?id=92&Sid=3>
- *California Department of Public Health – Blue-Green Algae (Cyanobacteria) Blooms:*
<http://www.cdph.ca.gov/healthinfo/environhealth/water/Pages/Bluegreenalgae.aspx>
- *Nonnative, Invasive Freshwater Plants:*
<http://www.ecy.wa.gov/programs/wq/plants/weeds/index.html>
- *Washington State Noxious Weed Control Board:* <http://www.nwcb.wa.gov/>
- *Washington Invasive Species Council:* http://www.rco.wa.gov/invasive_species/default.htm.
- *United States Department of Agriculture's National Invasive Species Information Center:*
<http://www.invasivespeciesinfo.gov/aquatics/controlplans.shtml#aqan>.
- *USGS – NAS – Nonindigenous Aquatic Species Information Resource:* <http://nas.er.usgs.gov/>.

REGULATORY INFORMATION

Regulatory Pollution Reduction Requirements

Federal and state regulations require that effluent limits in an NPDES permit must be either technology-or-water-quality-based.

- Technology-based limitations are based upon the methods available to treat specific pollutants. Technology-based limits are set by EPA and published as a regulation or Ecology develops the limit on a case-by-case basis (40 CFR 125.3, and chapter 173-220 WAC).
- Water quality-based limits are calculated so that the effluent will comply with the Surface Water Quality Standards (chapter 173-201A WAC), Ground Water Standards (chapter 173-200 WAC), Sediment Quality Standards (chapter 173-204 WAC) or the National Toxics Rule (40 CFR 131.36).
- Ecology must apply the more stringent of these limits to each parameter of concern. These limits are described below.

Technology-Based Water Quality Protection Requirements

Sections 301, 302, 306, and 307 of the CWA establish discharge standards, prohibitions, and limits based on pollution control technologies. These technology-based limits are "best practical control technology" (BPT), "best available technology economically achievable" (BAT), and "best conventional pollutant control technology economically achievable" (BCT). Permit writers may also determine compliance with BPT/BAT/BCT using their "best professional judgment" (BPJ). EPA has stated that for pesticide application to water (in its draft aquatic pesticide NPDES general permit) that technology-based requirements are Best Management Practices (BMPs); not numeric limits.

Washington has similar technology-based limits that are described as "*all known, available, and reasonable methods of control, prevention, and treatment*" (AKART) methods. State law refers to AKART under RCW 90.48.010, 90.48.520, 90.52.040, and 90.54.020. The federal technology-based limits and AKART are similar but not equivalent. Ecology may establish AKART:

- For an industrial category or for an individual permit on a case-by-case basis.
- That is more stringent than federal regulations.
- That includes BMP's such as prevention and control methods (e.g., waste minimization, waste/source reduction, or reduction in total contaminant releases to the environment).

Ecology and EPA concur that AKART may be equivalent to BPJ determinations.

Historically, EPA has regulated the pesticide application industry under FIFRA. EPA developed label use requirements to regulate the use of pesticides. EPA also requires the pesticide manufacturer to register each pesticide, provide evidence that the pesticide will work as promised, and minimize unacceptable environmental harm.

The Pesticide Management Division of the Washington State Department of Agriculture (WSDA) ensures that applicators use pesticides legally and safely in Washington. WSDA

registers pesticides for use in Washington (in addition to EPA registration); licenses pesticide applicators, dealers and consultants; investigates complaints; maintains a registry of pesticide sensitive individuals; and administers a waste pesticide collection program. These duties are performed under the authority of the Washington Pesticide Control Act (chapter 15.58 RCW), the Washington Pesticide Application Act (chapter 17.21 RCW), the General Pesticide Rules (chapter 16-228 WAC), the Worker Protection Standard (chapter 16-233 WAC) and a number of pesticide and/or county specific regulations (<http://agr.wa.gov/PestFert/Pesticides/default.htm>).

The standards for environmental protection are different between the CWA and FIFRA. Because of the *National Cotton Council, et al. v. EPA* court decision, in 2011, EPA will regulate the application of aquatic pesticides under a general NPDES permit. EPA is currently developing a general NPDES permit for non-delegated states, federal lands, and Tribal Lands. EPA expects all delegated states to develop their own NPDES permits for aquatic pesticide application to comply with the federal court decision. To comply with the *National Cotton Council, et al. v. EPA* court decision, by April 2011, all aquatic pesticide applications in the United States must occur under NPDES permits.

Because of the *Headwaters Inc. v. Talent Irrigation District* decision, Ecology has regulated aquatic pesticide application under NPDES permits since 2002. It is Ecology's intent that reissuing the permit will authorize aquatic plant and algae management in a manner that complies with all federal and state requirements.

All wastewater discharge permits issued by Ecology must incorporate requirements to implement reasonable prevention, treatment, and control of pollutants. Ecology acknowledges that applicators could treat the pollutants addressed in this permit only with great difficulty due to the diffuse nature and low concentrations that exist after the pesticides have become waste. The *Headwater, Inc. v. Talent* ruling established that aquatic pesticides become waste in the water after the pesticide has performed its intended action and the target organisms are controlled or if excess pesticide is present during treatment.

Integrated Pest Management (IPM)

After the *National Cotton Council et al. v. EPA* decision, the Sixth Circuit Court allowed EPA 24 months to develop a general NPDES permit for aquatic pesticide use. In its draft permit, EPA regards IPM as meeting technology-based-effluent-limits for aquatic pesticide application. EPA anticipates having all Permittees applying for coverage under its general permit implement basic IPM practices. EPA's draft permit requires a subset of Permittees to implement "Pesticide Discharge Management Plans that include comprehensive IPM practices.

EPA expects dischargers to keep these written plans on site and make them available to state or federal inspectors on request. EPA requires that any state-issued aquatic pesticide NPDES permits be at least as stringent as the EPA-administered aquatic pesticide general permit.

The draft reissuance of Ecology's permit requires that the Permittee develop or *adopt* a *Discharge Management Plan (DMP)*. Ecology will provide a template for this plan along with

the *Notice of Intent (NOI)*. Existing Permittees must submit their DMP for each of their permit coverages to Ecology within one year of the date of permit reissuance. *New applicants* must submit their DMP as part of the NOI.

Experimental Use Permits

Entities operating under WSDA-issued experimental use permits (WSEUP) do not need coverage under this permit. WSDA requires WSEUP for all research experiments involving pesticides that are not federally registered or for uses not allowed on the federally registered pesticide label. WSDA experimental use permits limit the amount of an experimental use pesticide that a Permittee can use for testing purposes. WSDA grants experimental use permits for gathering data in support of registration under FIFRA Section (3) or Section 24(c). In many situations, only a state WSEUP is required for the use of an experimental pesticide.

When a proponent conducts a small-scale test on more than one surface acre of water per pest, it must obtain a federal experimental use permit in addition to a state experimental use permit. Any person may apply to the EPA for a federal experimental use permit for pesticides and these permits are usually valid for only one year. Applicants holding a federal experimental use permit must also apply for and obtain a state experimental use permit before initiating any shipment of the pesticide to Washington. Ecology requires coverage under the Aquatic Plant and Algae Management Permit for applicants operating under a federal experimental use permit.

Water Quality-Based Requirements

Surface Water Quality-Based Effluent Limits

The Washington State Surface Water Quality Standards (chapter 173-201A WAC) were designed to protect existing water quality and preserve the *beneficial uses* of Washington's surface waters. Waste discharge permits must include conditions that ensure the discharge will meet established surface water quality standards (WAC 173-201A-510). Water quality-based effluent limits may be based on an individual waste load allocation or on a waste load allocation developed during a basin-wide total maximum daily loading study (TMDL).

Ecology conditions NPDES and waste discharge permits in such a manner that authorized discharges meet water quality standards. The characteristic beneficial uses of surface waters include, but are not limited to, the following: domestic, industrial and agricultural water supply; stock watering; the spawning, rearing, migration and harvesting of fish; the spawning, rearing and harvesting of shellfish; wildlife habitat; recreation (primary contact, sport fishing, boating, and aesthetic enjoyment of nature); commerce; aesthetics and navigation.

Numeric Criteria for the Protection of Aquatic Life and Recreation

Numeric water quality criteria are published in the Water Quality Standards for Surface Waters (chapter 173-201A WAC). They specify the levels of pollutants allowed in receiving water to protect aquatic life and recreation in and on the water. Ecology uses numeric criteria along with chemical and physical data for the wastewater and receiving water to derive effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limits, the discharge must meet the water quality-based limits.

The EPA has published 91 numeric water quality criteria for the protection of human health that are applicable to dischargers in Washington State (40 CFR 131.36). EPA designed these criteria to protect humans from exposure to pollutants linked to cancer and other diseases, based on consuming fish and shellfish and drinking contaminated surface waters. The Water Quality Standards also include radionuclide criteria to protect humans from the effects of radioactive substances.

Narrative Criteria

Narrative water quality criteria (e.g. WAC 173-201A-240(1); 2006) limit the toxic, radioactive, or other deleterious material concentrations that may be discharged to levels below those which have the potential to:

- Adversely affect designated water uses.
- Cause acute or chronic toxicity to biota.
- Impair aesthetic values
- Adversely affect human health

Narrative criteria are statements that describe the desired water quality goal, such as waters being “free from” pollutants such as oil and scum, color and odor, and other substances that can harm people and fish. These criteria are used for pollutants for which numeric criteria are difficult to specify, such as those that offend the senses (e.g., color and odor). Narrative criteria protect the specific designated uses of all freshwaters (WAC 173-201-A-200, 2006) and of all marine waters (WAC 173-201A-210; 2006) in the State of Washington.

Antidegradation Analysis and Antidegradation Plan

The following narrative represents Ecology’s antidegradation analysis and antidegradation plan for the Aquatic Plant and Algae Management General Permit. The purpose of Washington’s Antidegradation Policy (WAC 173-201A-300-330; 2006) is to:

- Restore and maintain the highest possible quality of the surface waters of Washington.
- Describe situations under which water quality may be lowered from its current condition.
- Apply to human activities that are likely to have an impact on the water quality of surface water.
- Ensure that all human activities likely to contribute to a lowering of water quality, at a minimum, apply all known, available, and reasonable methods of prevention, control, and treatment (AKART).
- Apply three Tiers of protection (described below) for surface waters of the state.

Tier I ensures existing and designated uses are maintained and protected and applies to all waters and all sources of pollution. Tier II ensures that dischargers do not degrade waters of a higher quality than the criteria assigned unless such lowering of water quality is necessary and in the overriding public interest. Tier II applies only to a specific list of polluting activities. Tier III prevents the degradation of waters formally listed as “outstanding resource waters” and applies to all sources of pollution.

WAC 173-201A-320(6) describes how Ecology implements Tier I and II antidegradation in general permits. All Permittees covered under the general permit must comply with the provisions of Tier 1. Ecology determined that the permit does not cover discharges to Tier III waters.

Under state law, the use of herbicides is in the public interest. "Many commercially available herbicides have been demonstrated to be effective in controlling nuisance and noxious aquatic weeds and algae and do not pose a risk to the environment or public health. The purpose of this act is to allow the use of commercially available herbicides that have been approved by the environmental protection agency and the department of agriculture and subject to rigorous evaluation by the department of ecology through an environmental impact statement for the aquatic plant management program (RCW 90.48.447)." See also the Biological Background Section for information about how noxious weeds, algae, and nuisance plants impact beneficial uses of water bodies.

The water quality standards at WAC 173-201A-320(6) describe how Ecology should conduct an antidegradation Tier II analysis when it issues NPDES general permits. This section of the rule requires Ecology to:

- **Use the information collected, from implementation of the permit, to revise the permit or program requirements.**
 - Ecology revised the proposed permit based on written and verbal feedback from Permittees, parties affected by the permit, lake residents, internal staff, and government agencies about what was working well and what was not. Ecology also maintained and referred to a "tickler" file of comments and complaints received over the life of the permit when developing the proposed permit. Ecology solicited input from Permittees including government agencies at a meeting held April 2010 and from the public (targeting lake residents) at an open house held in June 2010. Government agencies also had an opportunity to make comments to a preliminary draft permit. Ecology will further revise the draft permit based on a formal public comment period (45 days) and testimony received at two planned public hearings. Revisions to the permit, many of these based on comments and complaints, have increased the permit's environmental protections.
 - Ecology used herbicide residue monitoring information from aquatic pesticide permits and from its grant program to revise permit requirements. Permittees collected (and continue to collect) information about herbicide persistence, mobility, efficacy, and impacts to non-target plants after treatment conducted in Washington waters under Ecology's NPDES permits. This permit cycle Ecology used this information to impose additional drinking water restrictions in the proposed permit. Ecology has made monitoring information available at http://www.ecy.wa.gov/programs/wq/pesticides/final_pesticide_permits/noxious_monitoring_data/monitoring_index.html.

- Ecology may modify the permit if monitoring data show significant adverse impacts to water quality through the continued use of a specific pesticide or application method or if EPA fails to reregister a pesticide for aquatic use. In addition, the permit requires immediate reporting of any adverse impacts from treatment to fauna or humans. Ecology investigates these reports and determines if the treatment caused or contributed to the problem.
 - Based on permitting needs to protect salmon and amphibians from direct and indirect (sub-lethal) effects of aquatic herbicides, Ecology funded several research projects at the University of Washington to study sub-lethal impacts on these organisms from the use of 2,4-D, diquat, fluridone, and triclopyr under Ecology's permit program. Sub-lethal impacts include interference with smoltification, olfaction changes, and avoidance behaviors that could for example lead to increased predation. Because of data from these studies and other information, Ecology will continue to require timing for the application of diquat to protect juvenile salmon and not require timing for fluridone, triclopyr, glyphosate, and imazapyr. The amphibian research is just starting, but Ecology anticipates results by 2012.
 - To meet permitting needs and to determine herbicide efficacies on the eradication of state-listed noxious weeds, Ecology has funded and published several research studies that include evaluating the impacts of aquatic herbicides on non-target native plant species. See <http://www.ecy.wa.gov/programs/eap/lakes/aquaticplants/index.html#annualsurvey> for an overview of the Ecology's special research projects.
- **Review and refine management and control programs in cycles not to exceed five years or the period of permit reissuance.**
 - Ecology is following a five-year reissuance cycle for the Aquatic Plant and Algae Management Permit. The current permit issued in 2006 expires in 2011. Ecology plans to reissue the Aquatic Plant and Algae Management Permit in 2011. The 2011 permit will expire in 2016. Permit reissuance includes a public involvement process as described below.
 - Ecology spends about a year prior to permit expiration soliciting input from users and affected parties, rewriting and revising permit conditions, and reviewing relevant data before going out for public comment on the permit and accompanying documents and finalizing the proposed new version of the permit.
 - **Include a plan that describes how Ecology will obtain and use information to ensure full compliance with water quality standards. Ecology must develop and document the plan in advance of permit or program approval.**
 - The information in the Fact Sheet and in the antidegradation section of this Fact Sheet constitute Ecology's antidegradation plan for the Aquatic Plant and Algae Management General Permit. This is despite language in Ecology's guidance document implementing Tier II antidegradation requirements that indicates such a plan may not be required. Ecology *Supplementary Guidance Implementing the*

Tier II Antidegradation Rules dated July 18, 2005

(<http://www.ecy.wa.gov/programs/wq/swqs/antideg-tier2-guidance.pdf>) states: “A Tier II analysis is not required in association with activities regulated under a short-term modification (WAC 173-201A-410) such as what would occur with construction and maintenance activities or the periodic use of herbicides to control noxious aquatic plants.”

- None of the chemicals allowed for use in the permit are chemicals of concern or listed on the 303(d) list of impaired water bodies as a cause of impairment. Although copper sulfate and chelated coppers are registered algaeicides and herbicides (and there are water bodies on the 303(d) list for copper impairment), Ecology discontinued the use of copper compounds for these uses in Washington lakes in 2002. Never the less, Ecology understand that the use of chemicals in 303(d)-listed water bodies for dissolved oxygen and phosphorus has the potential to cause further impairment to these water bodies. Ecology addresses this in the proposed permit by prohibiting further impairment of any 303(d)-listed water body. Ecology does allow treatment in these waters, but only if the Permittee chooses an appropriate chemical and implements one or more mitigation measures. In addition, when treating waters impaired for oxygen, the Permittee must monitor dissolved oxygen and report these results to Ecology within 30 days of the post-treatment monitoring date.
- Because the addition of alum or calcium for nutrient inactivation may alter pH concentrations in the water, Ecology requires monitoring. If the pH exceeds the limits set in the permit, the applicator must stop the treatment and take immediate steps to correct the situation.
- Ecology has added a new planning requirement to the proposed permit. All applicants and Permittees must complete a DMP using a template provided by Ecology. The DMP is based on the principles of integrated pest management and requires that the Permittee (and *sponsor* when applicable) set *action thresholds* that must be met before treatment can occur. The DMP also requires that the applicant/Permittee/sponsor evaluate all other applicable aquatic plant and algae management methods before selecting the method or methods best suited to their situation. The DMP requires that the applicant/Permittee provide detailed information about the water body including plant and animals species using the water body, sensitive, threatened, or endangered species, critical habitats associated with the water body, rare plants, and beneficial water uses including legal water rights information.

Although the antidegradation requirements for general permits state that individual actions covered under a general permit do not need to go through independent Tier II reviews, Ecology considers it important that the public have the opportunity to weigh in on whether individual actions are in the overriding public interest. The antidegradation rule establishes a refutable presumption that they do, but only through a public notice of intent to provide coverage and expected compliance with antidegradation does the general public have an opportunity to question individual actions. Thus, applicants for new coverages must publish requests for

coverage in a local paper. Further, the draft proposed permit requires that entities seeking coverage under the permit must also send the public notice for coverage to waterfront residences and businesses within one-quarter mile along the shoreline from any proposed treatment sites.

Public notices must include:

- A statement that the applicant is seeking coverage under the Aquatic Plant and Algae Management General Permit.
- The name, address, and phone number of the applicant.
- The name of the water body proposed for treatment.
- A list of products planned for use.
- The statement: “Any person desiring to present their views to the Department of Ecology regarding this application shall do so in writing within 30 days of the last date of publication of this notice. Comments must be submitted to the Department of Ecology. Any person interested in the Department’s action on the application may notify the Department of their interest within 30 days of the last date of publication of this notice.”

DMP’s submitted as part of the Notice of Intent will undergo public review. DMP’s submitted by existing Permittees when the Permittee proposes to use a chemical that persists in the water for longer than days must satisfy the requirements of WAC 173-201A-410. The Permittee must follow the Administrative Procedures Act (chapter 34.05 RCW) for public involvement and complete a SEPA evaluation of the plan (chapter 43.21C RCW).

Evaluation of Surface Water Quality-Based Effluent Limits for Numerical Criteria

Ecology made its determination on the ecological and human health effects of the chemicals or products approved for use in the reissued permit based upon its Aquatic Plant Management Program Environmental Impact Statements and risk assessments (1980, 1992, 2001, and 2004), knowledge of aquatic plant and algae management control methods, other available risk assessment documents, and BPJ. Ecology developed conditions in this permit to assure compliance with the water quality standards. The conditions, which vary with the chemical, implement AKART through BMPs such as requiring a state-licensed applicator with an aquatic endorsement, requiring equipment calibration and operator training, compliance with FIFRA, mitigation for 303(d)-listed waters, development of a DMP that sets action thresholds, protections for rare plants and critical habitats/species, and special conditions in the permit. Ecology has determined that if dischargers properly apply and handle chemicals in accordance with the terms and conditions of the general permit and FIFRA, the aquatic plant and algae management activities will:

- Comply with state water quality standards.
- Maintain and protect the existing and designated use of the surface waters of the State.
- Protect human health.

New information regarding previously unknown environmental and human health risks about any of the chemicals may cause Ecology modify to the general permit.

Short-Term Water Quality Modification Provisions

The short-term water quality modification provision of the draft permit allows the authorized discharges to cause a temporary diminishment of some designated beneficial uses while it alters the water body to remove aquatic plants and algae. The conditions of this permit constitute the requirements of a short-term water quality modification.

A short-term exceedance only applies to short lived (hours or days) impairments, but short-term exceedances may occur periodically throughout the five-year permit term. Short-term exceedances may also extend over the five-year life span of the permit (long-term exceedance) provided the Permittee satisfies the requirements of WAC 173-201A-410. The Permittee must develop and implement an IPM plan that follows the Administrative Procedures Act (chapter 34.05 RCW) for public involvement and complete a SEPA evaluation of the activity (chapter 43.21C RCW).

Washington's Water Quality Standards include 91 numeric health-based criteria that Ecology must consider when writing NPDES permits. The EPA established these criteria in 1992 in its National Toxics Rule (40 CFR 121.36). Ecology has determined that the Permittee's discharge does not contain chemicals of concern based on existing data or knowledge.

Sediment Quality Standards

The aquatic sediment standards (chapter 173-204 WAC) protect aquatic biota and human health. Under these standards, Ecology may require a Permittee to evaluate the potential for the discharge to cause a violation of sediment standards (WAC 173-204-400). Obtain additional information about sediments at the Aquatic Lands Cleanup Unit website <http://www.ecy.wa.gov/programs/tcp/smu/sediment.html>

Ecology has determined through a review of the discharger characteristics and effluent characteristics that this discharge has no reasonable potential to violate the Sediment Management Standards.

Ground Water Quality Standards

The Ground Water Quality Standards, (chapter 173-200 WAC), protect beneficial uses of ground water. Permits issued by Ecology must not allow violations of those standards. This permit does not allow the use of any other pesticides expected to contaminate groundwater. In the event there are additional concerns, Ecology can issue orders requiring groundwater monitoring for different pesticides under this permit.

SEPA Compliance

In 1980, Ecology completed an Environmental Impact Statement (EIS) for statewide program guidance in the issuance of administrative orders called "short-term modifications of water quality standards" for herbicides and algaecides used in aquatic plant and algae control. In 1992, Ecology updated and supplemented the EIS with the *Final Supplemental Environmental Impact Statement (SEIS) for the Aquatic Plant Management Program*. In 2001, Ecology updated the SEIS to evaluate new aquatic herbicides. In 2002, Ecology added a Final SEIS for Diquat

Dibromide as an additional supplement to the 1980 EIS. Because of the Talent Irrigation District decision in the Ninth Circuit Court, Ecology issued its first NPDES permits for aquatic pesticides in 2002. These permits replaced the administrative orders that Ecology used to regulate aquatic pesticide application.

Using the programmatic SEIS, associated supplements, risk assessments, and staff BPJ as guidance, Ecology conditioned the use of pesticides in the permit to mitigate potential environmental impacts of concern noted in the environmental and human health evaluations required under the State Environmental Policy Act (SEPA). Under SEPA rules, it is not mandatory to include all mitigations or conditions identified in the SEIS or risk assessment documents in its permit. Ecology may also use BPJ or new information to determine appropriate permit conditions or mitigations. Mitigations in the permit include timing windows to protect *sensitive, threatened, and endangered* fish, amphibians, and sensitive habitats and protections for rare plants.

Every coverage issued under the permit undergoes further SEPA review. Before issuing coverage, Ecology reviews the information in the permit coverage application and the DMP. The DMP identifies specific information about project and site conditions including information about threatened and endangered plants and animals, water usage, and sensitive habitats. The DMP also functions as a SEPA addendum. In a change from the 2006 Permit, applicants no longer fill out a separate SEPA checklist. Instead, the DMP and the NOI provide site-specific project information to Ecology that is supplemental to Ecology's programmatic SEIS. Ecology is the lead agency for the SEPA determination when the applicant is an applicator. When the applicant is a government, generally the other government agency is the lead agency. However, at their request, Ecology may choose to assume the SEPA lead agency for other government applicants. When Ecology is the lead agency, it issues a Determination of Significance (DS) and adopts Ecology's FEIS using the site-specific project information in the DMP as supplemental information to its programmatic FEIS.

Endangered and Sensitive Species

EPA has implemented an Endangered Species Protection Program (ESPP) to identify all pesticides that may cause adverse impacts on threatened/endangered species and to implement measures that will mitigate these impacts. When the ESPP identifies an adverse impact, it requires use restrictions to protect these species at the county level. EPA will specify these use restrictions on the product label or by distributing a county-specific Endangered Species Protection Bulletin. Bulletins are enforceable under FIFRA. General Condition G9 of the Aquatic Plant and Algae Management Permit requires the Permittee to comply with all applicable federal regulations. See <http://www.epa.gov/espp/frequent-ques.htm> for more information.

The Fish and Wildlife Service and National Marine Fisheries Service are involved in EPA's processes to protect listed species and designated critical habitat in several ways: by consulting with EPA on specific endangered species concerns; by issuing Biological Opinions on certain species; or other ways, as necessary. For details on how EPA evaluates the potential risks from

pesticides to listed species and consults with the Services, see their risk assessment process web page at <http://www.epa.gov/espp/litstatus/riskasses.htm>.

Under the Aquatic Plant and Algae Control Permit, Ecology has imposed timing restrictions on chemicals expected to have sub-lethal or habitat alteration impacts to salmon species. Timing information provides windows of opportunity when applicators may add chemicals to the water without undue impact on sensitive species. Ecology defers to WDFW's expertise about the presence of fish or other sensitive species to minimize impacts to life stages of fish and other sensitive animals. WDFW develops the timing table for Ecology. Ecology determines which chemicals may impact sensitive species. Ecology bases its determinations on research that it funded through the University of Washington as well as other existing publications.

In 2010, at Ecology's request, WDFW biologists revised and broadened the species and habitats covered under timing windows for aquatic pesticide permits to include all salmon species, steelhead, bull trout, and any other sensitive species associated with aquatic habitats (e.g., waterfowl, amphibians, critical habitats). In some cases, timing windows limit optimal treatment times for aquatic plants. Sometimes the best times to avoid treatment to protect sensitive species may be the best times to treat for aquatic plants (i.e., herbicide treatment may not take place during the optimal treatment times for plant control).

Based upon annual reporting of pesticide use and other available information, Ecology with advice from WDFW, may further restrict pesticide use to protect endangered, threatened, candidate and sensitive species such as pacific salmonids. WDFW may modify fish timing windows during the life of the permit as new scientific information about species and critical habitats becomes available. Some lake groups have worked with WDFW to refine and revise the timing windows for their lake treatments. For example, the Lake Steilacoom Improvement District was able to move their salmon timing window from a July 15 treatment start date to a June 15 start date after they met with WDFW and reviewed fish use information from the lake and nearby water bodies with salmon runs.

An aquatic plant management firm, Aquatechnex LLC, challenged the fish timing windows referenced in the 2006 permit. The PCHB heard the case (PCHB NOS. 06-011, 06-020, 06-023). Aquatechnex LLC was concerned that WDFW could modify the fish timing windows any time without the full procedural protections normally applicable to NPDES and waste discharge permit modifications (i.e., public input and comment). WDFW bases fish timing windows on the anticipated presence or absence of fish or sensitive organisms during a particular period. The possibility exists that WDFW could modify certain provisions of the document during the life of the permit because of the dynamic nature of fish migration and scientific data collection. For example, WDFW modified the fish-timing window in Lake Steilacoom. This resulted in an earlier treatment start date (which was beneficial to the lake residents in this instance).

The PCHB ruled, "Such changes do not implicate the substantive regulations imposed on permittees. It is permissible under these circumstances for Ecology to incorporate this type of document from another source into an NPDES or waste discharge permit, and particularly where

the applicable restrictions are readily available for all Permit holders on the Ecology website². This arrangement is similar to how fishing and hunting season updates are made available to holders of fishing and hunting licenses". The PCHB concluded, "It is reasonable and does not unduly prejudice Permit holders or their ability to comply with the Permit's terms."

For regulatory information concerning rare plants see *Additional Requirements for Discharges to Water Bodies Where Sensitive, Threatened, or Endangered Plants are Present* in the Special Conditions Section of the Fact Sheet.

Responsibility to Comply with Other Requirements

Ecology has established, and will enforce, limits and conditions in the permit for the discharge of aquatic herbicides and algaecides registered for use by the EPA and the WSDA. Ecology has also established, and will enforce, limits and conditions in the general permit for product types named in this permit not governed by these agencies (e.g., nutrient inactivation products, aquatic dyes, biological water clarifiers). EPA and WSDA will enforce the use, storage, and disposal requirements expressed on pesticide labels. The Permittee must comply with the pesticide label requirements (FIFRA) and all of the conditions of this general permit. The permit does not supersede or preempt federal or state label requirements or any other applicable laws and regulations.

SPECIAL CONDITIONS

S1. PERMIT COVERAGE

This permit is a reissuance of the Aquatic Plant and Algae Management Permit - WAG-994000 that expires April 1, 2011. The proposed permit will replace the current permit.

Activities Covered under This Permit

All entities that participate in aquatic plant or algae management activities that result in a discharge of pollutants to waters of the state must obtain coverage under a permit as required by Washington laws and regulations (chapters 90.48.080, 90.48.160, 90.48.260 RCW and chapter 173-201A WAC). Herbicides, algaecides, nutrient inactivation products, adjuvants, marker dyes, shading products, and water clarification products are potential pollutants, and therefore require a discharge permit before application to Washington State surface waters.

This permit regulates the use of the above products for the management of aquatic plants and algae and nutrient inactivation. Applicants with projects targeting *submersed* and *floating-leaved* freshwater state-listed noxious weeds or quarantine-listed weeds in lakes must obtain coverage under the Aquatic Plant and Algae Management Permit and **may not** obtain coverage under the Aquatic Noxious Weed Permit for *in-lake treatments*. Permittees for these types of in-lake projects may also include the treatment of noxious and quarantine-listed weeds along any lake shoreline in their permit coverage if they wish. This eliminates the need to have coverage under two permits for chemical treatment in and along the shorelines of a single water body for noxious

² The WDFW timing table is available on Ecology's Aquatic Plant and Algae Management Permit website.

weeds. Proponents of in-lake noxious weed projects must obtain coverage under the Aquatic Plant and Algae Management Permit rather than the Aquatic Noxious Weed Permit because of a lawsuit settlement agreement between the Washington Toxics Coalition and the WSDA. All other types of noxious weed treatments can occur under the Noxious Weed Permit (lake shoreline treatments, wetland treatments, treatments in wet areas, and treatment of submersed or floating-leaved noxious weeds in rivers).

The permit has three categories: eradication, control, and *nutrient management*. There are different permit requirements for each category.

1. The eradication category allows for the eradication of all species listed as noxious weeds (as identified in chapter 16.750 WAC). This includes all classes of noxious weeds (Class A, Class B and B-designate, and Class C), all species listed on WSDA's quarantine list (as identified in chapter 16.752 WAC), or any non-native and potentially invasive aquatic plant species not listed on the above lists as determined by the State Noxious Weed Control Board, WSDA, or Ecology. Eradication means the complete and permanent removal of these species from the entire water body or shoreline. As such, *littoral zone* limitations do not apply when the goal is eradication. The Permittee may treat 100 percent of noxious weeds or quarantine-listed weeds using any effective herbicide allowed in the permit. Ecology understands that eradication projects may take many years to accomplish depending on the plant species. Project proponents may also opt for a phased approach to an eradication project (e.g., managers often phase fragrant water lily eradications projects over several years to allow recolonization of the area by native plant species). However, one should not use the goal of eradication as a pretext for unlimited treatment of a water body, especially where native plants are removed too.
2. The control category is divided into an *aquatic plant control* section and an *algae control* section. Each section has different requirements. Ecology further divided the aquatic plant control section into a section for aquatic noxious weed control and a section for aquatic nuisance plant control.
 - a. *Aquatic plant control* means the partial removal of aquatic plants within a water body or along a shoreline to allow for the protection of beneficial uses of the water body. The goal of the permit is to allow the removal of some vegetation for recreation and other beneficial uses, while allowing some native vegetation to remain for habitat.

Aquatic noxious weed control takes place on lakes where there is no coordinated effort to eradicate a noxious species and the species is only being partially managed in the water body. That may happen because the species is too widespread and eradication is not feasible, or no entity has stepped forward to coordinate eradication efforts. Even when the goal is not eradication, the Permittee may treat 100 percent of Class A or Class B noxious weeds (in areas where the State Noxious Weed Control Board has designated the Class B weeds for control) using any effective herbicide allowed in the permit. The Permittee may treat 100 percent of any submersed Class B noxious weed, 100 percent of

any submersed Class C noxious weeds, or 100 percent of any quarantine-listed submersed weeds **so long as the Permittee uses a *selective herbicide* allowed in the permit**. The Permittee may treat 100 percent of any emergent or floating leaved noxious weed or quarantine listed weed in any given area using any effective herbicide allowed in the permit. Littoral zone limitations do not apply when treating noxious weeds or quarantine-listed weeds. These species are non-native and invasive and even partial removal via a control project is desirable, even if not all noxious weeds are removed from the water body.

For aquatic nuisance plant control, Ecology restricts direct herbicide application to a percentage of the littoral zone depending on the water body size. Nuisance plants are native species and while they may interfere with the beneficial uses of recreation and aesthetics and impact safety, they also provide food and habitat for fish and wildlife and help stabilize sediments and shorelines. By limiting the area treated, the permit strives to balance these sometimes-competing beneficial uses of a water body.

The littoral zone is the **vegetated** area from the edge of the water at the shore to the end of the area where plants stop growing in deeper water. Water clarity and light penetration are factors that most influence the depth of plant growth. In some lakes the littoral zone may be deep (plants noted at 45 feet in Lake Chelan) or shallow (plants may not grow deeper than 10-12 feet in Puget Sound lowland lakes). The actual area affected by the herbicide may vary depending on many factors that influence herbicide *dispersion* in water, but by limiting the area where the applicator can directly apply herbicides, some areas of native vegetation will remain untreated.

Dispersion is the reason why Ecology uses the term "*intentionally applied*" in the permit. Ecology can *regulate* the exact areas where a Permittee discharges (or intentionally applies) a chemical. Ecology cannot regulate or control the extent of dispersion because it varies depending on environmental conditions. Dispersion means that sometimes the treatment affects more area or less area than anticipated. In principle, some adjuvants can limit dispersal, in practice; Ecology has found these adjuvants to be impractical and ineffective for submersed treatments. Requiring installation of barriers around treated (or untreated areas) is extremely expensive and time consuming.

Dischargers may apply herbicides up to the maximum amount of the littoral zone area allowed for treatment in the permit **and** as identified in the individual permit coverage application. Action thresholds, identified in the DMP for each coverage, govern when it is appropriate to treat a littoral zone. For some water bodies such as Lake Washington, Ecology may issue multiple site-specific coverages (e.g., city of Bellevue, Seattle Yacht Club, Boat Street Marina, etc.) to different dischargers. In these situations, Ecology's permit manager will ensure that the cumulative amount of *treated area* allowed under multiple coverages does not exceed the maximum amount of littoral zone allowed for treatment in that water body.

In order to maintain areas of native vegetation within a water body, dischargers may not change the treatment areas for native nuisance plants from year to year over the life of the permit. For example, if the permit and the coverage allows treatment of 50 percent of the littoral zone each year and the applicator treats 50 percent the first year of the permit, the applicator must treat the same area of the littoral zone in subsequent years (if treatment was needed as triggered by the action thresholds set in the DMP). If the applicator treated only 30 percent of the littoral zone, in subsequent years the applicator could treat that same 30 percent and an additional 20 percent of the littoral zone. However, having treated 50 percent of the littoral zone, the applicator is then limited to treating only that area for the life of the permit.

Typically, the sponsor selects the treatment areas in consultation with the Permittee and the Permittee submits a map to Ecology that delineates these areas. Ecology requires that the littoral zone selected for the no treatment area must extend from the shoreline to the water depth where plants stop growing (i.e., Ecology does not want littoral areas designated for no-treatment to be in the middle of the lake). Ecology acknowledges that this may create problems in very urbanized lakes where some residents may not experience the same level of control of plants in front of their homes as others may do. However, treatment areas are for the sponsor and the Permittee to determine. Chemical treatment does not preclude the use of other aquatic plant management methods such as installation of bottom barriers, manual removal, harvesting, and other non-chemical options. A discharge management plan for a lake may include several plant management options that can meet the needs of all water body residents.

Ecology adopted a tiered approach to treatment in which the portion of littoral zone allowed to be treated in a lake decreases as the size of the lake increases. In smaller water bodies, the ratio of shoreline to open water is greater and the littoral zone provides potentially less critical habitat than in larger water bodies where aquatic vegetation helps provide important structure to the water. Ecology also considered that many of the smaller lakes that traditionally rely on herbicide application to maintain beneficial uses are 100 percent developed and many are private lakes rather than *public access* lakes. Designating areas to leave untreated may pose a greater hardship in these situations. Larger lakes often have wetlands, undeveloped areas, parks, or islands that form natural refuge areas that can be “set aside” from the residential treated areas. Smaller lakes are often artificial water bodies created in residential neighborhoods, and may not have these sorts of natural areas.

Ecology used BPJ in establishing the amount of littoral zone allowed for treatment in these tiered categories. Ecology originally established these percentages after discussion with wetland, wildlife, and fisheries biologists. Estimates in the scientific literature about how much littoral vegetation should remain for habitat range from zero to 100 percent. It varies depending for which species the water body is managed (e.g., warm water fish, waterfowl, trout, etc.). By adopting a tiered approach, Ecology tried to balance the need for aquatic vegetation as food and refuge for fish, waterfowl, aquatic mammals,

amphibians, and invertebrates with the needs of the water body residents for safety, navigation, recreation, and aesthetics. Ecology understands that some dispersion of herbicides will occur; particularly herbicides placed directly into the water to control submersed vegetation. Because of dispersion, in some instances, the actual area affected by the herbicide will be greater than the area of direct herbicide application. In other instances, the actual area affected may be less than the area of direct herbicide application (because of dilution). Note that this permit does not authorize trespass onto *private property*.

Ecology allows individual residents (that are not part of a lake-wide effort) to treat an area in front of their lake-front property 20 feet in width along the shoreline or ten feet either side of their dock for nuisance plant control. The treated area may extend from the shore to the edge of the littoral zone where plants stop growing in deeper water. However, if an existing coverage exists for that water body and that coverage includes the entire percentage of littoral zone allowed for treatment, then Ecology will not issue additional coverage for that water body. If the holder of the original coverage has not treated the entire littoral zone allowed for in the permit and agrees to relinquish some of their permit coverage, then Ecology may be able to accommodate other requests for coverage for that water body.

Ecology has different requirements for roadside and ditch bank plant control. Ecology allows state and local agencies to treat 100 percent of plants within the right of way of roads to allow for driver safety, fire control, and to protect road surfaces from root damage. Ecology allows state and local agencies to treat 100 percent within the right of way of ditch banks to allow access and to protect infrastructure. On privately owned lots, the discharger may apply herbicide to no more than 40 percent of the native vegetation.

- b. Algae control means applying algaecides to remove or suppress the growth of algae. Many types of algae exist in freshwater systems. Most *phytoplankton* plays an important role in the food web and has negligible impact on the *recreational use* of a water body. Ecology does not allow algaecide application to manage these kinds of algae. Their blooms are typically short-lived, harmless to humans, and beneficial to the ecosystem. However, filamentous algae and cyanobacteria have the potential to interfere with beneficial uses in a water body and the permit allows treatment of these types of algae. Filamentous algae can form unsightly mats within the water column that interfere with swimming, boating, fishing, and aesthetics. Cyanobacterial blooms can result in lake closures if they produce toxins. This can have severe impacts to beneficial uses, particularly recreation. Cyanobacterial toxins can be a health risk to humans, pets, livestock, fish, and wildlife. Human illness has been associated with cyanobacterial blooms in Washington waters and pets have died from contact with these toxins. A few other species of algae that are not cyanobacteria or filamentous green algae may also harm humans or fish and wildlife (e.g., *Prymnesium parvum* - golden algae). Ecology allows chemical treatment of these species under the permit.

The permit allows for whole or partial lake treatments when managers identify potentially toxic or environmentally harmful algae species in the water column. Ecology limits treatment of filamentous algae to the maximum amount of littoral area allowed for treatment as specified in the permit and according to the amount of littoral area treatment requested in the individual permit coverage application.

3. Nutrient management: The plant nutrient phosphorus generally limits the growth of algae in Washington lakes. The more phosphorus in a water body, typically the more algae is present. Phosphorus comes from external sources to the water body such as stormwater, septic systems, fertilizers, agricultural practices, etc. (external loading), but phosphorus may also be found in the lake sediments. Sediments can release phosphorus into the water under certain environmental conditions (process called internal loading). When lake managers determine that sediments are a source of phosphorus, they may decide to apply chemicals to inhibit phosphorus release from sediments (nutrient inactivation).

Because nutrient inactivation products are not registered pesticides, EPA and WSDA do not regulate their use and dischargers of nutrient inactivation chemicals do not need to be licensed applicators. Traditional nutrient inactivation chemicals include aluminate sulfate or sodium aluminate (alum), calcium hydroxide/oxide, or iron compounds. These chemicals form a precipitate in the water called a floc. As the floc settles through the water column, it removes phosphorus and particulate matter, including algae, from the water. The floc forms a layer on the sediment that changes the oxidation state of the sediment thereby limiting phosphorus release. Algae blooms typically decline in the water body after nutrient inactivation treatment because the treatment reduces the phosphorus levels that fuel algae growth. Because water clarity improves, plant growth often increases in the water body. Nutrient inactivation treatments may provide relief from algal blooms for many years or may be short-lived depending on the amount and the chemical used and environmental conditions of the water body. The permit allows whole lake or partial treatments for nutrient management projects. It also allows continuous injections. Injection precipitates phosphorus in the water column by applying low doses of nutrient inactivation chemicals on a continuous or intermittent basis.

Geographic Area Covered

The permit applies to the application of chemicals for aquatic plants and algae management to surface freshwaters anywhere in the state of Washington where Ecology has authority. Surface waters include lakes, rivers, ponds, streams, inland waters, wetlands, brackish waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington (RCW 90.48.020, WAC 173-201A-020 and WAC 173-226-030). Ecology does not have jurisdiction over federal or tribal lands. Aquatic plants and algae have the potential to occur in or near virtually any freshwater or semi-aquatic site in Washington State. These sites include but are not limited to riparian areas, wetlands, marshes, rivers, year-round and seasonal streams, lakes, ponds, and wet pastures.

Activities That May Not Need Coverage Under This Permit

Ecology considers some limited pesticide treatments to have very low potential for impact (such as herbicide treatments to small constructed water bodies that do not drain for two weeks following treatment). Requiring permit coverage from these dischargers would be a burden of little environmental value for both Ecology and the dischargers.

Ecology has determined not to issue coverage for *detention and retention ponds* if:

- Ecology regulates the discharge under another permit (such as industrial or municipal stormwater permits) and the permit allows chemical treatment.
- There is no discharge to surface waters within two weeks of treatment.

Ecology has determined not to issue coverage for *constructed water bodies* or *upland farm ponds* if:

- The water bodies are five acres or less in surface area, and
- There is no discharge to surface waters within two weeks of treatment.

Ecology has determined not to issue coverage for seasonally dry *wetlands* if:

- The wetland is dry at the time of treatment and for two weeks following treatment, and
- The chemical will not be biologically available when water inundates the area.

Ecology believes that a two-week no discharge time provides sufficient time to prevent possible discharge to surface waters when outflow begins after treatment. Ecology believes that if dischargers met these conditions, the treatment poses no potential to violate the Water Quality Standards for Surface Waters of the State of Washington (chapter 173-201A WAC).

S2. APPLICATION FOR COVERAGE

Who May Obtain Permit Coverage

A definition of “Permittee” is not provided in chapter 90.48 RCW, chapters 173-216, 173-220, or 173-226 WAC, nor is one provided in 40 CFR 122 (EPA NPDES Permit Program) or State NPDES Permit Programs. Based upon the usage of Permittee in federal and Washington State law, Ecology takes the term “Permittee” to mean “the person or entity that discharges or controls the discharge of pollutants to waters of the state (surface or ground) and holds permit coverage allowing that specific discharge.”

For the Aquatic Plant and Algae Management Permit, Ecology has established that the Permittee is the discharger (the *licensed pesticide applicator* in most instances) or any state or local government entity that contracts with or has licensed applicators on staff.

Ecology requires applicators to obtain separate coverages for each waterbody; except for instances where a single sponsor has *legal oversight* over water bodies with a surface hydraulic connection or a community where a single sponsor has legal oversight over several water bodies, (an example may be a community with several, small constructed lakes). Generally, each coverage will have a single sponsor. In water bodies with multiple sponsors or individual coverages, the applicator must obtain separate coverages for each location within the larger water

body (e.g., Lake Washington and associated waterways). For example, an applicator may hold a coverage to treat a marina in the ship canal, another coverage for a second marina in the ship canal, a third coverage for a marina in Portage Bay, and another coverage for a yacht club (four separate coverages with four separate sponsors but all on the same water body).

For application of certain aquatic products (those with no FIFRA registration because they are not registered pesticides), the discharger does not have to be a licensed applicator, but must be the person that most closely meets the definition of an applicator. In those instances, the Permittee may be a discharger, but not a licensed applicator, but must also have a sponsor for the project.

Any state or local government may obtain coverage and become a Permittee for water bodies under its legal jurisdiction. Government entities do not need sponsors to sign their permit application for coverage. Government Permittees must ensure that Ecology's permit manager has an up-to-date list of its licensed applicators. The applicators may be on-staff or working under contract. Ecology allows government entities to obtain a single coverage that includes multiple water bodies so long as the water bodies are under its legal jurisdiction.

How to Apply for Coverage

Permittees that plan to continue coverage under the revised permit must apply to Ecology to extend their coverage at least 180 days before the current permit expires. Ecology will consider any Permittee that does not reapply as a new applicant.

A new applicant is an entity that proposes to discharge chemicals into waters of the State for purposes of aquatic plant and algae control, but does not have permit coverage at the time Ecology issues the updated permit. New applicants must submit a complete application for permit coverage a minimum of 60 days before applying pesticides that result in discharge to waters of the state.

The new permit applicant must submit a complete application including a Notice of Intent (NOI) and a DMP that also functions as a SEPA addendum. An official who has signature authority (WAC 173-226-200) for the entity applying for permit coverage must sign all documents. Ecology must receive the complete application for permit coverage on or before the publication date of the public notice the permit applicant posted in a newspaper of general circulation (WAC 173-226-130). Ecology considers a newspaper of general circulation as the major newspaper publication for a region.

To ensure that potentially affected lake residents receive notification when an applicant submits a new application for coverage, Ecology added an additional step to the public notification process in the reissued permit. New applicants must also send the public notice to all potentially affected waterfront residents within a quarter mile of any proposed treatment area. Ecology posts all new applications for coverage on its website at <https://fortress.wa.gov/ecy/wqapnoidisplay/>. It also maintains a list of current coverages at that web address.

When the applicator is the Permittee, the sponsor's signatory (an individual homeowner if it is an individual treatment), or a person with the authority to administer the treatment (i.e., representative of the entity that hired the applicator for the treatment such as a president of an association) must also sign and date the application for coverage. The sponsor's signatory must certify to Ecology that he or she represents an entity that has the legal authority to administer common areas of the water body or locations within the water body for the purpose of aquatic plant and algae management. Legal entities with that authority may include Lake Management Districts formed under chapter 36.61 RCW, Special Purpose Districts formed under Title 57 RCW, Homeowners Associations formed under chapter 64.38 RCW, and groups operating under the provisions of chapter 90.24 RCW. There may also be other entities with the legal authority to manage common areas in public or private water bodies. New sponsors that do not represent a legal entity may apply for and get coverage, but they must form a legal entity for the purpose of managing aquatic plant and algae in common areas of the water body within three years from the date of the coverage letter. After that time, Ecology may terminate permit coverage. Sponsors continuing coverage that do not represent a legal entity that has the authority to administer common areas of the water body or locations within the water body for the purposes of aquatic plant and algae management have three years from the date of permit reissuance to form a legal entity for these purposes. After that time, Ecology may terminate permit coverage.

Requiring the sponsor to be a legal entity with the authority to oversee aquatic plant and algae management helps ensure that affected property owners can participate in any lake management decision. It may also mean that each property owner may be assessed a portion of the costs of any management decision, spreading the financial burden of aquatic plant and algae management to all waterfront owners and in some cases possibly watershed residents. This is a change from the way that Ecology has been administering this general permit. Because forming a legal entity can be time-consuming and since Ecology does not want to burden noxious weed eradication efforts; each applicant is allowed a period of three years in which to form a legal entity for the purposes of managing aquatic plants and algae. After this time, Ecology may terminate permit coverage.

Before issuing coverage, Ecology requires the consent of any municipality or community if the treatment affects potable water use on water bodies with *municipal or community drinking water intakes*. Ecology defines municipality or community drinking water intakes as serving large groups of individuals (e.g. cities). This requirement ensures that the community or municipality concurs with chemical treatment of their potable water supply.

When Ecology receives the new applicant's complete application before public notice it can review the application and communicate necessary changes on application documents. Communication (prior to publishing public notice) about document changes can save the applicant (and sponsor) money by identifying any necessary changes before the applicant publishes and sends out the public notice.

The public has the opportunity to comment on the permit application and the proposed coverage during the 30 days after publication of the second public notice (public comment period).

Ecology will consider comments about the applicability of the permit to the proposed activity received during this period. If Ecology receives no substantive comments, it will issue permit coverage on the 61st day following receipt of a complete application. The public has the right to appeal any coverage decision.

How to Terminate Permit Coverage

Ecology plans to issue the permit for a period of five years, starting on the effective date of the permit (WAC 173-226-330). Coverage will last from the date of coverage to the date of permit expiration, which will be up to five years, unless the Permittee terminates coverage by submitting a notice of termination. If the Permittee does not terminate coverage, the Permittee will continue to incur an annual permit fee.

S3. DISCHARGE LIMITS

Compliance with Standards

See also the section "Technology-Based Water Quality Protection Requirements" for a discussion about AKART. Ecology also believes that a Discharge Management Plan (DMP) will help meet AKART. Ecology based this new requirement for a DMP that incorporates *integrated pest management principles* (IPM) on:

- A similar planning requirement in EPA's draft NPDES permit for aquatic pesticide application. In their draft permit, EPA considers IPM to meet technology-based standards.
- Integrated Pest Management Law (chapter 17.15 RCW).
- Washington's Water Quality Standards (WAC 173-201A-110).
- Similar planning requirements in the Aquatic Noxious Weed NPDES permit.

Temporary Exceedance of Water Quality Standards

In 2006, Ecology updated the Water Quality Standards for Surface Waters of the State of Washington (chapter 173-201A WAC). Ecology proposes to change the limits in the 2011 permit to reflect these changes. The standards allow a temporary exceedance of water quality standards for up to five years (the term of a general permit) provided the Permittee has followed certain guidelines. WAC 173-201A-410(2) requires that for Ecology to extend the exceedance for up to five years, and not limit it to hours or days, the Permittee must develop and implement an IPM plan. The Permittee must develop the plan following the Administrative Procedures Act for public involvement (chapter 34.05 RCW) and must complete a State Environmental Policy Act (chapter 43.21C RCW and chapter 197-11 WAC) review of the proposed activity. Permittees who do not meet these requirements must ensure that the short-term exceedance of water quality standards is limited to only hours or days. Because this is a requirement of the permit and state law, the public, through Ecology, may request the DMP developed by the Permittee and its sponsor during a public disclosure request. Ecology may also request updated plans.

Pesticide Application Requirements

Only Washington-licensed applicators with an aquatic endorsement or applicators under direct supervision of a licensed applicator may apply pesticides to water. FIFRA does not regulate all chemicals (e.g., nutrient inactivation chemicals) covered in the permit. The person that most closely meets the definition of an applicator can legally apply these non-FIFRA-labeled

chemicals. However, regardless of who discharges the chemical, the permit requires that all applicators use appropriate application methods, have training in application techniques, and that trained personnel calibrate the application equipment.

Discharge Management Plan

See also the "Compliance with Standards" section. The DMP template is included with the NOI materials. New applicants must complete and submit the DMP along with their NOI. Existing Permittees have a year from the date of permit reissuance to develop and submit a DMP to Ecology for each coverage. The Permittee must develop the DMP jointly with their sponsor. Where an equivalent management plan exists, the Permittee may submit this plan to Ecology in lieu of developing a DMP so long as the Permittee certifies to Ecology that the equivalent plan includes all the elements in the DMP template. The Permittee may also submit the equivalent plan with an addendum containing any elements of the DMP that were missing in the equivalent plan. Ecology will keep the DMP with the permit coverage file. It will make the DMP available to the public through the public disclosure process.

The Permittee must also keep the DMP updated and keep the updated DMP at their business office. Ecology may obtain a copy of the updated DMP on request.

Impaired Water bodies

Ecology periodically reviews water quality data to determine if water bodies meet criteria. *Section 303(d)* of the CWA requires that waters not meeting criteria undergo an evaluation of the cause and amount of the contaminant. Ecology publishes Total Maximum Daily Load (TMDL) reports, which may establish limits on the amounts of pollutants contributors may discharge. Chemical applications to water bodies listed on the 303(d) list have additional limits and conditions imposed upon them. Parameters of concern identified in this permit include phosphorus and dissolved oxygen.

Dissolved Oxygen: Water bodies listed on the 303(d) list as impaired for dissolved oxygen have either year-round problems, or seasonally low dissolved oxygen levels. Low dissolved oxygen in a water body can adversely affect fish and other animal populations. Use of fast-acting *contact herbicides*, which primarily cause quick breakdown and subsequent decomposition of aquatic vegetation (chemical mowing) have the greatest potential to lower dissolved oxygen concentrations within a water body. The goal of contact herbicide treatment is to rapidly, but temporarily remove plants from specific areas for recreation purposes. Massive dieback of vegetation can occur in treated areas. Bacterial decomposition of the treated vegetation may deplete available oxygen in the water, creating low oxygen conditions. To help prevent low dissolved oxygen conditions, contact herbicide labels restrict the amount of area treated at any one time and specify retreatment intervals.

Phosphorus: The 303(d) water bodies listed for phosphorus are of concern after chemical treatment because decomposing plants can release phosphorus sequestered in tissue into the water in a form available for algae and plant growth. Available phosphorus, especially in warm,

sunny summer months can trigger algae or cyanobacteria blooms. Algae blooms may also lead to low oxygen conditions in the water body as blooms die and decay.

Mitigation Measures: The permit identifies and requires mitigation measures that can help prevent further impairment of 303(d)-listed waters for dissolved oxygen and phosphorus after chemical treatment. Mitigations include treating in the spring or fall if appropriate for the plant species, selecting a *systemic herbicide* instead of a contact herbicide, limiting amount of the area treated at any time, removing plants after treatment before they start decomposing, maintaining some healthy populations of aquatic plants in the water body, and aeration. Below is a discussion about mitigation measures.

Treatment Timing: By treating early in the season, water temperatures are cooler and retain more oxygen, lessening chances of low oxygen conditions developing after treatment. Plants are just breaking dormancy or germinating. There is less biomass available to decompose to deplete available oxygen or to release phosphorus into the water. Sometimes fall treatments can be effective because plants translocate the chemicals to their root systems. Fall treatment also means cooler water temperatures and less chance of low oxygen conditions developing. Water temperature helps determine the maximum amount of oxygen that water can hold. Cooler water holds more oxygen (the solubility of oxygen at 0 degrees Centigrade is about twice its solubility at 30 degrees Centigrade). Many plants die back in fall (senesce) for the winter, so they were already releasing nutrients into the water through senescence.

Chemical Choice: Contact herbicides can cause rapid die back of plants, quickly releasing nutrients into the water. This nutrient pulse may trigger algae blooms. Systemic herbicides are slower acting. The plants gradually die back over weeks rather than days and this slower die back gradually releases nutrients to the water at lower concentrations. This prolongs the decomposition process so you do not get oxygen sags. Data collected after Washington State herbicide treatments show that dissolved oxygen levels typically remain acceptably high after treatment with systemic herbicides.

Limiting the Area Treated: Restricting the area treated at any one time reduces the amount of affected biomass and this limits the amount of nutrients released and the oxygen demand through the decomposition process. A lake treatment may consist of different areas treated over several weeks or months. Because Ecology requires dissolved oxygen monitoring after treatment in impaired water bodies, monitoring can provide immediate feedback about the adequacy of mitigation measures in maintaining acceptable oxygen concentrations in the treated areas and water body. This feedback can help Ecology assist Permittees in selecting the most effective mitigation measures to ensure that no further water quality impairment occurs in 303(d) listed water bodies.

Removal of Plants Following Chemical Treatment: Permittees may choose to use a mechanical harvester or manual methods to remove biomass of decaying or affected plants from the water column after treatment. Removing plants may help reduce nutrient release and help prevent low oxygen conditions from developing.

Maintaining Aquatic Plants: Healthy aquatic plant populations can help ameliorate algae blooms by removing nutrients from the water column that may otherwise be used by algae.

Aeration: In water bodies with aeration systems, aerating the water can help increase oxygen conditions in the water column after chemical treatments.

Identified Wetlands

The Ecology Wetland Program uses WAC 173-22.030(19) to define wetlands and WAC197-11-768 to define mitigation as guidance for any projects that affect wetlands (RCW 90.58). Lacustrine or lake-associated wetlands extend from the shoreward boundary of the water body to a depth of 6.6 feet below low water or to the maximum extent of non-persistent emergents, if these grow deeper than 6.6 feet. The Water Quality Standards allow for the protection of the beneficial uses of swimming, boating, navigation, fishing, and aesthetics as well as habitat. The permit allows the partial removal of native aquatic vegetation in lake littoral areas using chemicals. Allowing treatment of native vegetation to protect the recreational uses of a water body as well as retaining native vegetation to protect the habitat uses of a water body is a balancing act between sometimes-conflicting needs. Through its permitting program, Ecology strives to achieve a balance between these needs.

Sometimes recreational activities and navigation occur in identified high quality emergent wetlands. Ecology allows limited treatment within these wetlands to allow for safe navigation or recreation (e.g., swimming corridors or boat channels). However, Permittees must make every effort to minimize their treatment footprint in these wetlands. For noxious weed eradication projects, Ecology requires that the Permittee use application techniques and select herbicides that minimize impacts to native species, although understanding that noxious weed treatments may need to be more extensive than treatments for nuisance plants.

Additional Requirements for Discharges to Water Bodies Where Sensitive, Threatened, or Endangered Plants are Present

Currently, no state law protects *sensitive, threatened, or endangered plant* species (rare plants) in Washington. However, many federal and state land management agencies have policies that provide protection for rare plants. In 1982, the state legislature recognized the need for a systematic and objective approach to protect those features of natural ecosystems most at risk and created the Natural Heritage Program within the Department of Natural Resources to assume this task (RCW 79.70.060). In addition, local jurisdictions may provide protection for rare species and high quality ecosystems through ordinances, regulations, and permitting requirements.

In the case of *Trotland et al. v. Ecology and Tahuyeh Lake Community Club* (1997), the Pollution Control Hearings Board (PCHB) found in favor of Ecology's issuance of an administrative order to protect rare peat bogs. The order provided a 100-foot buffer between treated areas and the peat bogs as recommended by an Ecology wetland biologist. The PCHB decision stated, "within this additional condition, the proposed treatment is designed to achieve

and maintain the water quality of the lake with respect to recreational opportunities without posing any significant adverse impact on the environment.”

In the case of *Allied Aquatics v. Ecology* PCHB NO. 01-102 (2001), the PCHB found that Ecology had the right to require a survey by a *professional botanist* to survey for rare plant species prior to herbicide use on Elbow Lake to protect a rare plant. The PCHB concluded that Ecology appropriately included conditions in the administrative order requiring an approved botanist survey of the treatment area.

Ecology’s permit manager has access to the Natural Heritage Program’s database of the locations of rare plants. Before issuing permit coverage, the permit manager checks this database to determine if botanists have reported any rare plants in the water body or along its shorelines. The DMP also requests this information from the applicant/Permittee/sponsor. If a rare plant occurs where the applicant proposes an eradication project, the permit manager or other Ecology staff consult with Natural Heritage Program staff to determine the best strategy to protect the rare plants, while allowing treatment of the noxious species. Allowing treatment may require the permit manager to condition the permit coverage (with an administrative order) to protect the rare plant.

If a rare plant occurs in a water body where the applicant proposes a control project, Ecology requires a plant survey by a professional botanist or *wetland specialist* that has no financial or other interest in the outcome of the survey. It is the responsibility of the applicant/Permittee to see that this survey is accomplished. The applicant/Permittee must submit the survey results to the Ecology permit manager. If the rare plant and the treatment areas coincide, the Permittee must implement one or more mitigation measures, as outlined in the permit, to protect the rare plant population. Ecology may require additional measures to ensure the viability of rare plant populations.

S4. THE APPLICATION OF PRODUCTS

Prohibited Discharges

RCW 90.48.080 states that “it shall be unlawful for any person to throw, drain, run, or otherwise discharge into any of the waters of this state, or to cause, permit or suffer to be thrown, run, drained, allowed to seep, or otherwise discharged into such waters any organic or inorganic matter that shall cause or tend to cause pollution of such waters according to the determination of the department.” Ecology prohibits treatment that causes oxygen depletion to the point of stress or lethality to aquatic biota from plant die-off, unintended impacts to water quality or biota, or the mortality of aquatic vertebrates.

Authorized Discharges

This permit allows the use of the chemicals identified in the permit. Ecology authorizes these discharges in accordance with WAC 173-201A-410 and chapter 90.48 RCW. EPA regulates most of these chemicals under FIFRA, but some products covered in the permit are not pesticides (e.g., alum). FIFRA only regulates pesticides.

The Permittee must comply with pesticide label requirements (when using a FIFRA-labeled product) and all applicable permit conditions. **Coverage under this general permit does not supersede or preempt federal or state label requirements or any other applicable laws and regulations.** It is the responsibility of the Permittee to determine if there are other applicable requirements pertaining to this activity and to comply with these requirements. General permit condition G9 reminds the Permittee of this fact. The permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights.

The Permittee must comply with any specific restrictions or limitations on the use of each chemical allowed in the permit (see Tables 3-5).

Active Ingredients: The permit allows for and conditions the use of nine federally registered *active ingredients*. Ecology permitted the use of eight of these active ingredients under the previous Aquatic Plant and Algae Management Permit. Ecology added one new active ingredient – imazamox- an EPA reduced risk pesticide to the reissued permit. Most of the permit conditions for the eight chemicals remain the same. However, the proposed permit requires testing the water around drinking water intakes for some of the herbicides.

The active ingredients have undergone review by Ecology prior to approval (see http://www.ecy.wa.gov/programs/wq/pesticides/seis/risk_assess.html). Ecology has mitigated possible risks by conditioning the use of the active ingredients under the general permit. Ecology determined that, if used according to the EPA label and in compliance with the conditions of this general permit, these active ingredients would not violate water quality standards. By approving active ingredients rather than trademarked products, Ecology will not need to conduct additional review for each new brand released onto the market.

The Fact Sheet sets out a process for the approval of new active ingredients for use under the permit. The process is as follows:

1. EPA and WSDA have approved the herbicide for the specific use.
2. The petitioner must conduct a risk assessment for each chemical not specifically allowed for use under this permit. They must submit the risk assessment to Ecology for review and approval. This risk assessment must address Washington State concerns as it evaluates the active ingredient; independent of the risk assessment performed by EPA during the registration process. The risk assessment must:
 - a. Be prepared by a *qualified toxicologist*.
 - b. Include, at a minimum:
 - i. Qualifications of the toxicologist(s) who prepared the risk assessment.

- ii. Verification that the product will meet the specified general conditions and prohibitions of this permit.
 - iii. Information about human health effects from the product, acquired since the issuance of EPA's most recent risk assessment on the active ingredient.
 - iv. A summary and assessment of the peer-reviewed literature concerning the product since the issuance of EPA's most recent risk assessment.
 - v. All available environmental and ecological information about the product and its environmental fate and effects.
 - vi. Mitigation measures for the use of the product.
3. After Ecology's approval of the risk assessment, Ecology will conduct public notification in the state register and make the notification available for posting on Ecology's website.
 4. Based on any additional valid scientific information provided during the public comment period, Ecology may either grant, condition, or deny approval for the use of the new product. At the conclusion of the comment period, Ecology may choose to modify the permit to allow the use of the new product.

Adjuvants: The permit provides for the use of specific adjuvants listed in Table 2. Applicators use adjuvants to increase the effectiveness of a pesticide (e.g., extenders, penetrants, spreaders, stickers, surfactants) or to modify the characteristics of a tank mix (e.g., acidifiers, defoaming agents, drift control agents).

WSDA registers all adjuvants prior to distribution in Washington State. WSDA only registers adjuvants for aquatic use if the registrant can demonstrate that the proposed use will not adversely affect desirable aquatic species. WSDA requires data on aquatic acute toxicity of the adjuvant to fish and aquatic invertebrates (WAC 16-228-1400(3)(e)).

An adjuvant must meet the following criteria before WSDA will register it for aquatic use in Washington; the adjuvant or adjuvant formulation must:

- Meet all requirements for the registration of a food/feed use spray adjuvant in Washington.
- Be either slightly toxic or practically non-toxic to freshwater fish.
- Be moderately toxic, slightly toxic, or practically non-toxic to aquatic invertebrates.
- Contain less than 10 percent alkylphenol ethoxylates (including alkylphenol ethoxylate phosphate esters).
- Not contain any alkyl amine ethoxylates (including tallow amine ethoxylates).

WSDA may register spray adjuvants for aquatic use that do not meet one or more of the above criteria if the registrant provides data which demonstrates that the proposed use will not adversely affect desirable aquatic species, or limits aquatic use to non-fish-bearing waters only. These criteria do not apply to adjuvants permitted for use under an experimental use permit issued by WSDA.

In the future, Ecology may add adjuvants to the permit after both Ecology and WSDA approval and after completing SEPA review. To allow the use of a newly approved adjuvant, Ecology must modify the permit.

Barley Straw: Ecology removed provisions for the application of barley straw for water clarification purposes from the reissued permit. The state legislature does not require a state waste discharge permit for these activities so long as the applicator follows the provisions below (RCW 90.48.310); the applicator must:

- Apply barley straw at a rate of up to 225 pounds per acre of surface water.
- Loosely pack the straw in nylon or mesh bags and must not use whole bales or tightly packed bales.
- Place the straw bags where control is desired, such as around docks and swim areas and around inlets to aid in aeration or mixing.
- Stake or anchor the bags in place.
- Place the straw in early spring, prior to the growth of algae, and must remove the bags four to six months after placement (not leave them in the water over the winter).

Other Products: The permit allows for and conditions the use of nutrient inactivation products aluminum sulfate, sodium aluminate (alum) and calcium hydroxide/oxide. The permit also makes provision for experimental treatments using nutrient inactivation products not included in the permit if the applicant receives Ecology approval for a plan that must also undergo public review.

The permit allows the use of marker dyes, shading products, and biological water clarification products. Applicators use marker dyes to distinguish treated areas from untreated areas when applying herbicide to manage emergent vegetation or floating leaved vegetation (e.g., water lilies). Marker dyes help keep applicators from over applying herbicides. Marker dyes do not have any herbicidal activity by themselves and EPA does not label them as pesticides.

Shading products contain dyes that reduce plant and algae growth by limiting the amount of light that can penetrate the water. Biological water clarification products include microbial products which manufacturers' claim may reduce bottom muck and enhance water quality. EPA does not register most shading products or biological water clarification products. Applicators typically use the products in small ponds that do not drain to natural waters.

Experimental Use

EPA regulates federal EUP's under section 5(f) of FIFRA and WSDA regulates both state and federal EUP's under RCW 15.58.405(3). Entities operating under a state EUP do not need coverage under the Aquatic Plant and Algae Management Permit because state EUP's are limited in acreage. However, entities operating under a federal EUP must obtain permit coverage. Federal EUP's typically allow treatment of up to several hundred acres. The permit allows entities operating under a federal EUP to use chemicals/products not listed in the permit so long as their use is solely for research and monitoring. Ecology does not require applicants operating under a federal EUP to develop a DMP.

Ecology will allow the use of nutrient inactivation products not listed in the permit on a limited basis in the context of a research and development effort if the Permittee develops a plan approved by Ecology for that activity. The plan must undergo a public review process. Allowing this activity will permit scientists and others to test out new nutrient inactivation technologies to determine impacts and short- and long-term effectiveness of the nutrient inactivation chemical in helping prevent toxic algae blooms.

General Application Restrictions

Ecology requires the Permittee to avoid treatments that restrict public water use during high use holidays (e.g. Memorial Day, Independence Day, and Labor Day). Permittees must minimize treatments that restrict public water use on weekends (WAC 174-201A-410). Water use restrictions occurring during those times will disproportionately affect public use of the waters.

Due to possible health concerns, the Washington Department of Health does not recommend that lake residents drink lake water, although some residents may do so. Some of the herbicides allowed for use in the permit have potable water use restrictions. Ecology requires the Permittee to notify any persons drinking the lake water about pending herbicide treatments that would affect their potable water supply (see the Business and Residential Notification Template). The affected party may request an alternative water supply from the Permittee and the Permittee must supply water to people drinking the water when it is their sole source of water or when they hold a *legal water right* or *legal water right claim* for that purpose. Persons with legal water rights or claims for irrigation or livestock watering may also request an alternate water supply from the Permittee. On some lakes, water users have been provided with bottled water, use of a neighbor's well, or even had a water truck stationed on their property for several days after treatment. Although the Permittee is legally obligated to provide an alternate water supply when requested, sometimes the Permittee's sponsor assumes the responsibility of supplying water to the affected parties, if that is acceptable to the affected party or parties. Persons with affected water use can request that the Permittee give them more notice of pending treatments than the Business and Residential Notice so they can better prepare for an alternative water supply during that time.

Tables 3, 4, and 5 identify restrictions, advisories, and treatment limitations on chemicals. Ecology imposed recreational and/or *swimming restrictions/advisories* on some chemicals to protect human health. Any restrictions required by Ecology are in addition to any FIFRA label conditions. A restriction is more stringent than an *advisory*. An advisory recommends that people not recreate in the treated area, but it is their choice to comply. A restriction means no swimming or contact recreation for a specific time after chemical application. A restriction or advisory requires public notification via sign posting (see S.6. Posting and Notification Requirements).

Some of these restrictions/limitations carried over from the 2006 permit, while others such as additional drinking water restrictions are new to the proposed permit. Ecology based the drinking water restrictions on herbicide residue data collected after actual treatments. Treatment limitations help mitigate adverse impacts from chemical treatments and Ecology based these limits on the best scientific information available and its BPJ.

At Ecology's request, WDFW developed timing windows to protect salmon, steelhead, bull trout, and other sensitive species and habitats (including amphibians and nesting waterfowl) from the effects of aquatic pesticide application. Aquatic application impacts may include disturbance of nesting areas, loss of food and habitat through removal of aquatic plants, or sub-lethal impacts to sensitive species from the chemicals. There are times when chemical applications have little to no impact on sensitive species or when no sensitive species are present in a water body. WDFW timing windows identify these periods for specific water bodies. In some water bodies with critical habitat or nesting areas, WDFW provided very limited treatment windows. WDFW may allow treatment outside of these times if the Permittee coordinates their treatment times and sites with the area habitat biologist as noted in the WDFW timing table for specific sites.

S5. NOTIFICATION, INSPECTION, AND POSTING REQUIREMENTS

The posting and notification requirements in the proposed permit are similar to the requirements for posting and notification in the previous Aquatic Plant and Algae Management Permit, the Noxious Weed Control NPDES Permit, and (prior to the NPDES permitting program), notification requirements in aquatic pesticide administrative orders. Other aquatic pesticide NPDES permits issued by Ecology require various levels of public notification. Ecology considered input from interested parties and Permittees when developing posting and notification requirements. In some cases, Ecology based the public notification requirements on FIFRA label requirements. In all other cases, Ecology based the requirements on its BPJ and the public's right-to-know.

The intent of notification is to make people aware of those activities taking place that have the possibility of affecting them. Community members have the right to know about possible chemical exposure so they can make informed decisions about limiting their exposure. Notification allows them to make those choices. The following discussion provides the rationale for the various types of notification and posting requirements in the permit:

Ecology Notification Requirements

Ecology requires Permittees to notify the permit administrator and the appropriate regional inspector of pending treatments by 8:00 a.m. on Monday morning of each treatment week. The purpose of this notification is to provide Ecology with advance notice about what lakes may be treated, what chemicals may be used, the targeted plants or algae, and a location where the Permittee expects to start treatment. Notification gives Ecology staff up-to-date information so they can more knowledgeably answer inquiries or concerns about treatments or so they can make unscheduled site inspections. On the same notification form, Permittees must also submit information about which treatments took place during the prior week, including the amount (pounds or gallons) of product used for each permit coverage area. This information is helpful to Ecology staff that may need to answer questions from the public about specific lake treatments.

Ecology recognizes that Permittee schedules are subject to change depending on conditions such as rain, wind, stage of plant growth, product delivery schedules, and even traffic. Sometimes unforeseen events occur that necessitate rescheduling treatment at the last minute. The proposed

permit allows Permittees to provide less pre-treatment notice *occasionally* to Ecology so long as Ecology staff receives at least two days notice before any treatment.

Permittees must immediately notify Ecology if a spill occurs or if they observe or learn about any adverse environmental or human health reaction that potentially happened because of treatment.

Inspection Coordination Requirements: Ecology may schedule inspections with any Permittee to ensure that the Permittee is correctly following all permit provisions. If Ecology arranges for an inspection, the Permittee cannot treat until Ecology's inspector is on site unless the inspector does not arrive within 30 minutes of the scheduled inspection time. Ecology may also conduct unscheduled inspections at any time. Having a weekly advance schedule facilitates Ecology's ability to perform unscheduled inspections.

Business and Residential Notification

Permittees must deliver a notice (by mail, newsletters, or handbills) to all waterfront residences and businesses within one-quarter mile in each direction along the shoreline or across the water from proposed treatment areas. Businesses and residents must receive the notice at least 10 days in advance and at most 42 days before the first treatment of the season. Permittees do not have to notify residences and businesses that are not on the waterfront (upland of the water body). If the notice explains the *application schedule* for the entire treatment season and there is no deviation from that schedule, Ecology requires no further notice for the rest of the treatment season (unless a resident or business specifically requests further notification about project treatment dates). The notice must specifically identify the application schedule for the season (i.e., cannot just reference "any period between June 15 and October 1"). The schedule must provide definite two-week windows that provide residents and businesses a time interval of when treatment may actually occur during the season.

The purpose of business and residential notification is to alert lake residents and businesses that treatment will occur on the water body for that season. This gives people time to contact the Permittee, the sponsor, or Ecology for further information. They may choose to schedule social or business events on dates that do not coincide with possible treatment dates. The notice also advises water users to contact the Permittee if they need an alternative water supply during and after treatment.

The previous permit allowed an 11-day window for initial notification each treatment season (10-21-day notice). The reissued permit allows a 32-day notification window (10- 42-day notice). Permittees report that it can be difficult to meet an 11-day notification schedule with weather and other issues potentially outside of their control affecting treatment schedules. If they need to reschedule outside of the notification window, they have to re-notice or they will be in violation of permit conditions. Re-noticing can cause delays, increases the sponsors' expense, and may result in treating outside of an optimum time that requires more chemical use. Providing a wider notification window in the reissued permit ensures adequate notification for affected parties, but provides more latitude for Permittees to schedule treatments.

Permittees must send (email) a copy of the Business and Residential Notice to the appropriate Ecology regional inspector no later than one business day of sending/delivering the notice to businesses and residences. Receiving the Business and Residential Notice informs Ecology that the Permittee has distributed the notice, that treatment is imminent, and notifies Ecology staff that they may receive inquiries about the proposed treatment. The reissued permit also requires the Permittee to email the notice to the Department of Natural Resources (DNR) (except for treatment of privately owned lakes with no public access). DNR requested advance notice of treatment on Washington lakes and the two agencies mutually agreed that receiving the Business and Residential Notice fulfills this request. Although lake ownership issues are complex, in many cases DNR owns the lakebed.

Ecology requires the Permittee to use a template for the Business and Residential Notice. The reissued permit allows the Permittee to add additional information about the project to this template should they so desire. Additional project information does not include advertising for other company services.

On water bodies with a history of cyanobacteria blooms, the Permittee may explain in the Business and Residential Notice that cyanobacteria treatment may occasionally occur outside of the scheduled times with no additional notice depending on water body bloom conditions. Ecology advises treating cyanobacteria blooms when cell numbers are low, but starting to increase. Ecology does not favor treating when cell numbers are high and the bloom is producing toxin. Treating a toxic bloom can break open the cells, releasing toxins into the water. This may increase the risk of human and animal illness. Cyanobacteria populations can increase rapidly and not having to delay treatment for ten days while notification occurs may mean being able to treat a bloom before it becomes toxic and widespread and not being able to treat it at all. Sometimes local health districts may close lakes to all contact recreation when blooms become toxic. Lake closures can be far more disruptive to lake users than an unscheduled treatment for algae control. Toxic algae blooms can result in lake closures for weeks or even months.

Children's Camp Notification Requirements

The Washington Department of Health requested that Ecology include a condition in its permits that requires managers of *children's camps* to send advance notice of herbicide application to the parents and guardians of potentially affected children. Ecology requires the Permittee to coordinate with the camp manager to send notification about treatment when the treatment will occur in or within 400 feet of a camp swimming area or a camp recreational area during or up to one week before a child attends the camp. This notification gives the parents/guardians the option of rescheduling their child's visit or requesting that the child not participate in water contact activities for a specified time after treatment. The PCHB upheld the requirement for camp notification as a permit condition. (PCHB No. 01-102 - Order on Summary Judgment).

Shoreline Posting Requirements

The Business and Residential notice provides a heads-up to residents and businesses about seasonal water body treatments. Shoreline posting lets people know that treatment has occurred

or is imminent. Posting treatment information allows people to choose to avoid the treatment area or water body for a time. The signs list the active ingredient and information about water use restrictions or advisories. Signs also have contact information for the Permittee and Ecology so that water users may request further information about the chemical or treatment.

Permittees must post shorelines adjacent to or within 400 feet of a treatment area no more than 48 hours before treatment. Signs must be placed near the shore and be clearly visible. Signs should remain in place until the end of the time for water use restrictions. Permittees must make efforts to secure signs so that they remain place, but they report that occasionally residents or the public may prematurely remove the signs. Ecology requires Business and Residential notification one-quarter mile from any proposed treatment site, but only requires posting within 400 feet of a treated area. Residents can become confused if they received initial notification, but do not see their property posted before treatment. This can lead to misunderstandings about notification and posting procedures and complaints to Ecology.

Ecology requires Permittees to post signs in a way that minimizes any damage to private property. Some people have complained about staples in their docks. If a resident objects, Permittees should avoid stapling the signs to their docks and find some other way to post on that property.

Ecology has translated some sign templates into Spanish and can offer translation services for some other languages. Alternatively, Permittees can use on-line translation programs to produce signs for communities where English is not widely spoken.

The proposed permit specifies posting requirements along public pathways and gated communities that the 2006 permit did not cover.

The proposed permit allows the Permittee to consolidate chemical information onto one sign even if they treat with more than one chemical in an area (rather than posting with separate signs for each chemical). The Permittee must list all the chemicals on each sign, but they must use the template and restrictions for the chemical with the most stringent use restrictions. For example, if a Permittee treats with diquat for aquatic plant control and in the same area also treats with a biological product for water clarification, the Permittee would use the template for diquat because it has the most stringent use restrictions. However, the sign would list products (diquat and the biological product) that the Permittee applied or plans to apply to the water. Using one sign saves the Permittee and the sponsor time and money. It is also less confusing for residents.

The proposed permit does not require the Permittee to change sign colors for each sequential treatment on the same water body. Permittees have the option to change sign colors or use any color they find effective so long as the writing remains legible.

The proposed permit removes the requirement for posting buoys on the water. The purpose of on-water posting was to alert people not to consume fish caught in that area. There was only one

chemical allowed in the permit with fish consumption restrictions and EPA removed those restrictions from the label after the registrant submitted new fish tissue data.

S6. MONITORING REQUIREMENTS

RCW 90.48.260 gives Ecology the authority to establish inspection, monitoring, entry, and reporting requirements. WAC 173-220-210 gives Ecology the authority to require monitoring of the treated waters to determine the effects of discharges on surface waters of the state. Permittees with coverage under the permit must record the amount of pesticides they use at each site and report the pounds or gallons used of each product applied and the acreage treated to Ecology in an annual report.

Eradication Projects

Ecology's Aquatic Weeds Grant Program funds noxious weed eradication projects that sometimes use aquatic herbicides. The grant manager requires aquatic herbicide residue monitoring after treatment as part of the required scope of work. The grant recipient submits these reports to Ecology during the annual grant reporting process and as part of the grant final report. Many of the results from these reports are on Ecology's website at: http://www.ecy.wa.gov/programs/wq/pesticides/final_pesticide_permits/noxious/monitoring_data/monitoring_index.html. These grant-funded reports have provided Ecology with information about herbicide residues found during treatment occurring in Washington waters. They have also provided information about treatment efficacy and impacts to non-target plants and organisms. Ecology uses these data to support or remove restrictions or conditions or monitoring requirements in its permits.

Control Projects

Permittees must monitor dissolved oxygen concentrations before and after treatments occurring in water bodies on the 303(d) list for low dissolved oxygen when using contact herbicides. The Permittee must select a location within the center of a treated area and at the edge of a treated area and monitor at the approximate *same time of day*. Typically, contact herbicides rapidly remove plants from the water column. Decomposing vegetation removes oxygen from the water and this may cause lowered dissolved oxygen levels. Monitoring provides Ecology with information about the impacts of using contact herbicides in water bodies that are impaired for oxygen. It also makes the Permittee more aware of the effects of its treatment on water quality. The permit does not allow further impairment of a 303(d)-listed water body and monitoring demonstrates either that the treatment has little effect on oxygen or that it affects oxygen levels. If treatment impairs oxygen levels, the Permittee will need to alter its treatment regime in that water body. Data from this monitoring will also further inform Ecology about the impacts of treatment in impaired water bodies.

Application of Phosphorus Inactivation Products

The proposed permit requires Permittees to monitor when they apply phosphorus inactivation products (aluminum sulfate or sodium aluminate (alum) or calcium hydroxide/carbon dioxide). The addition of alum lowers the pH of the receiving waters. The addition of calcium hydroxide

raises the pH of receiving waters. Therefore, it is Ecology's BPJ that Permittees must monitor pH prior to and during treatment.

Permittees may request reduced or no monitoring for specific chemicals from Ecology if prior monitoring demonstrates that the chemical causes minimal to no adverse environmental impacts.

S7. ANALYTICAL PROCEDURES

With the exception of certain parameters (pH, temperature, alkalinity), Ecology requires that all monitoring data be analyzed and prepared by a laboratory registered or accredited under the provisions of chapter 173-50 WAC, *Accreditation of Environmental Laboratories*. Some laboratories can analyze for some herbicides using enzyme linked immunosorbent assay (ELISA) methods. Ecology will allow ELISA methods to substitute for an EPA method.

S8. REPORTING AND RECORDKEEPING

Section S8 of the permit contains specific conditions based on Ecology's authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-226-090).

Annual Treatment/Monitoring Reports

Permittees meet part of their reporting requirements through annual treatment reporting. Permittees must submit their annual treatment report by December 31 of each year. The annual report summarizes the amount of each chemical (gallons or pounds of each product) used during the course of each treatment season per coverage. Reporting allows Ecology to track how much pesticide Permittees use in Washington for a specific use. Annual reporting also allows Ecology to determine if aquatic pesticide use in Washington lakes is increasing or decreasing and summarizes the results of herbicides residue monitoring, and efficacy monitoring.

Records Retention

Ecology based this permit condition on its authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-226-090). Applicators must keep all records and documents required by this permit for five years. If there is any unresolved litigation regarding the discharge of pollutants by the Permittee, they must extend the period of record retention through the course of the litigation (WAC 173-226-090).

S9. SPILL PREVENTION AND CONTROL

Reporting Permit Violations

WAC 173-226-080 (1)(d) states that a discharge of any pollutant more frequently or at a level in excess of that authorized is a permit violation. Ecology requires that if a Permittee violates permit conditions, it must take steps to stop the activity, minimize any violations, and report those violations to Ecology. For pesticide applications authorized in the Permit, applicators must report violations to the Aquatic Pesticide Permit Manager and the Regional Spills Hotline (ERTS Hotline) within 24 hours. This allows Ecology to determine if more action is necessary to mitigate the permit violation.

WAC 173-226-070 allows Ecology to place permit conditions to prevent or control pollutant discharges from plant site run off, spillage or leaks, sludge or waste disposal, or materials handling or storage. It also allows Ecology to require the use of BMPs that includes schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of the waters of the state. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. The Permittee must be prepared to mitigate for any potential spills and, in the event of a spill, perform the necessary cleanup, and notify the appropriate Ecology regional office (see RCW 90.48.080, and WAC 173-226-070).

S10. MITIGATION FOR PROTECTION OF SENSATIVE, THREATENED, OR ENDANGERED PLANTS: AQUATIC PLANT CONTROL PROJECTS

Due to potential impacts on rare plant species when herbicides are used in a water body, Ecology requires specific mitigation measures when it determines that a rare plant is present in a water body or grows along the shoreline of a lake due to be treated for nuisance plants. Ecology requires the Permittee to conduct a detailed plant survey of the waterbody and shoreline. The Permittee must hire a *professional aquatic botanist* or wetland specialist that has no financial or other stake in the outcome of the survey. This ensures no bias on the part of the surveyor and that they have aquatic plant identification skills. Ecology requires the survey no earlier than three months before treatment so long as the surveyor can identify the rare plant species during this time. Ecology requires an annual survey for submersed rare species, but a survey once every five years suffices for rare emergent shoreline species.

The permit requires that the Permittee apply buffers (when applicable) and select one or more of the mitigation measures outlined in the permit to protect the rare plant. The mitigation measures differ depending on the growth form of the rare plant and the growth form of the targeted nuisance plants. Ecology may require the Permittee to monitor the vitality of the rare plant population to ensure that treatment does not affect their viability. The Permittee must keep records for the life of the permit detailing which mitigation(s) measures they chose.

S11. APPENDICIES

GENERAL CONDITIONS

Ecology bases the General Conditions on state and federal law and regulations.

Duty to Reapply

All NPDES permits require the Permittee to reapply for coverage 180 days prior to the expiration date of the general permit in accordance with 40 CFR 122.21 (d), 40 CFR 122.41(b), and WAC 183-226-220(2).

PERMIT ISSUANCE PROCEDURES

Permit Modifications

Ecology may modify this permit to impose new or modified numerical limitations, if necessary to meet Water Quality Standards for Surface Waters, Sediment Quality Standards, or Water Quality Standards for Ground Waters. Ecology would base any modifications on new information obtained from sources such as inspections, effluent monitoring, or Ecology-approved engineering reports. Ecology may also modify this permit because of new or amended state or federal regulations.

Recommendation for Permit Issuance

The general permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, protect human health, aquatic life, and the beneficial uses of waters of the State of Washington. Ecology proposes to issue this general permit for five (5) years.

APPENDIX A: GLOSSARY

All definitions listed below are for use in the context of this permit only.

303(d): Section 303(d) of the federal Clean Water Act requires states to develop a list of polluted water bodies every two years. For each of those water bodies, the law requires states to develop Total Maximum Daily Loads (TMDLs). A TMDL is the amount of pollutant loading that can occur in a given water body (river, marine water, wetland, stream, or lake) and still meet water quality standards.

Action threshold: Densities or numbers of pest populations that trigger control actions or other measurable criteria (e.g., number and species of algae cells, densities of aquatic plants). Action thresholds help determine the need for control actions and the proper timing of such actions.

Adjuvant: An additive, such as a surfactant, that enhances the effectiveness of the primary chemical (active ingredient).

Advisory: Information required to be posted on all public signs advising people not to recreate in the treated area for a number of hours after treatment. An advisory is a recommendation rather than a restriction.

Algae: Primitive, chiefly aquatic, one-celled, or multicellular plant-like organisms that lack true stems, roots, and leaves but usually contain chlorophyll.

Algaecide: A chemical compound that kills or reduces the growth of algae or cyanobacteria.

Algae control: Applying algaecides to kill or suppress the growth of cyanobacteria, filamentous algae, or any algal species that have the potential to affect human or environmental health.

All known, available, and reasonable methods of pollution control, prevention, and treatment (AKART): A technology-based approach to limiting pollutants from discharges. Described in chapters 90.48 and 90.54 RCW and chapters 173-201A, 173-204, 173-216 and 173-220 WAC.

Application schedule: The proposed treatment date(s) for a specific water body or specific area within a water body during one treatment season.

Applicator: The person that discharges the chemical to a water body. Applicators are required to be licensed to apply registered pesticides. Some chemicals such as alum are not registered or used as pesticides and therefore the applicator does not, by state law, have to be licensed.

Aquatic nuisance plants: Any non-noxious aquatic plants that are at a density and location to substantially interfere with or eliminate some beneficial uses of the water body. Typically, these beneficial uses include activities such as boating, swimming, fishing, or waterskiing.

Aquatic plant control: The partial removal of aquatic plants within a water body or along a shoreline to allow for the protection of beneficial uses of the water body.

Beneficial uses: See WAC 173-201A-200.

Biological water clarifiers: Microbial or bacterial products sold for the purpose of water clarification, removal of organic materials from sediment, and reduction of nutrients (as claimed by manufacturers).

Children's camps: A site located along a water body that provides water contact recreation and other activities for children particularly during the summer months and includes day camps as well as residential camps.

Constructed water body: A man-made water body created in an area that was not part of a previously existing watercourse, such as a pond, stream, wetland, etc.

Contact herbicide: An herbicide that typically affects only the part of the plant that the herbicide is applied to. Contact herbicides often act as chemical mowers, leaving roots available for re-growth. Contact herbicides are fast-acting, but tend to result in only temporary removal of the targeted plants.

Control: The partial removal of native plants, non-native non-noxious plants, algae, and noxious or quarantine-list weeds (that are not being eradicated lake-wide) from a water body. The purpose of control activities is to protect some of the beneficial uses of a water body such as swimming, boating, water skiing, fishing access, etc. The goal is to maintain some native aquatic vegetation for habitat while allowing some removal for beneficial use protection.

Cyanobacteria: A group of usually unicellular photosynthetic organisms without a well-defined nucleus; sometimes called "blue-green algae" although they are not actually algae. Some genera of cyanobacteria produce potent liver or nerve toxins.

Detention or retention ponds: Man-made water bodies specifically constructed to manage stormwater. Detention ponds are generally dry until a significant storm event. Retention (wet) ponds are designed to have a permanent pool of water and gradually release stormwater through an outlet.

Discharge: The addition of any pollutant to a water of the state.

Dispersion: The movement of a chemical in the water.

Emergent vegetation: Aquatic plants that generally have their roots in the water, but the rest of the plant is above water (e.g., cattails, bulrush).

Eradication: Eradication is the permanent removal of all non-native, invasive aquatic plants of one or more species within a water body or along a shoreline. The goal of eradication projects is to allow a diverse native plant community to flourish once the invasive species is eliminated. It may take years to achieve eradication of a target species.

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA): A set of EPA regulations that establishes uniform pesticide product labeling, use restrictions, and review of new pesticides.

Filamentous algae: Typically green algae species that grow in long strings or form cloud-like mats in water. Filamentous algae do not produce toxins.

General Permit: A permit that covers multiple discharges of a point source category within a designated geographical area, in lieu of individual permits being issued to each discharger.

Harmful algae species: Algae known to harm humans or wildlife generally through the production of toxins.

Herbicide: Any substance or mixture of substances intended to prevent, destroy, repel, or mitigate any weed or other higher plant (see chapter 17.21.020 RCW).

Individual permit: A discharge permit specific to a single point source or facility.

Integrated Pest Management Plan: An ecologically based strategy for pest control that incorporates monitoring, biological, physical, and chemical controls in order to manage pests with the least possible hazard to humans, environment, and property. IPM considers all available control actions, including no action. Pesticide use is only one control action.

Invasive: Tending to spread and then dominate the area by out competing other plants. Some non-native species can become invasive when introduced outside of their native range. Some native plants can be invasive too (e.g., cattails).

Legal oversight: Having authority under the law to manage aquatic plants or algae in a water body. Some lake front properties may own lake bed property. See also sponsor definition for a list of entities that may have legal rights to manage common areas of a water body for aquatic plants and algae.

Legal water right: A water right is a legal authorization to use a predefined quantity of public water for a designated use. The purpose must qualify as a beneficial use such as irrigation, domestic water supply, etc. Any use of surface water which began after the state water code was enacted in 1917 requires a water-right permit or certificate.

Legal water right claim: A water right claim is statement of beneficial use of water that began prior to 1917 for surface water. Claims remain valid until such time that adjudication occurs,

whereby the validity of the claim must be proven before a court of law. During adjudication, claimants are required to prove that water has been in constant beneficial use prior to 1917 for surface water. Five or more consecutive years of non-use may invalidate a claim.

Licensed pesticide applicator: Any individual who is licensed as a commercial pesticide applicator, commercial pesticide operator, public operator, private-commercial applicator, demonstration and research applicator, or certified private applicator, or any other individual who is certified by the director of WSDA to use or supervise the use of any pesticide which is classified by the EPA as a restricted use pesticide or by the state as restricted to use by certified applicators only.

Littoral zone: The vegetated area from the water body's edge to the maximum water depth where plant growth occurs. The littoral zone varies between water bodies depending on bathymetry, water clarity, and water quality.

Marker dyes: Colorants that are sprayed onto the targeted weed along with the herbicide. Marker dyes allow better targeting of herbicide sprays since treated and untreated areas are more clearly seen by the applicator.

Municipal or community drinking water intake: A drinking water intake that supplies water to a city or town.

New applicants: An applicator or government entity that proposes to discharge pesticide into waters of the state, but does not already have coverage under the Aquatic Plant and Algae Management Permit for the proposed treatment site.

Non-native: A plant living outside of its natural or historical range of distribution. Plants considered to be non-native were not present in Washington prior to European settlement. Most non-native plants are not considered to be noxious weeds.

Notice of Intent (NOI): An application to obtain coverage under an NPDES permit.

Noxious weed: A legal term defined in chapter 17.10 RCW that means a non-native plant that when established is highly destructive, competitive, or difficult to control by cultural or chemical practices. The Washington State Noxious Weed Control Board maintains a legal list of noxious weeds (see chapter 16.750 WAC for the current list of noxious weeds).

Nuisance aquatic plants: Non-noxious aquatic plants which are at a density and location so as to substantially interfere with or eliminate activities such as boating, swimming, fishing, waterskiing, or other beneficial uses of the water including impairment of aesthetics.

Nutrient management: The use of chemical precipitants to bind soluble reactive phosphorus into an insoluble form that is unavailable to aquatic organisms, to clarify the water column, and to

reduce the release of phosphorus from sediments. Nutrient inactivation is typically used to prevent algae blooms by inhibiting phosphorus release from sediments.

Occasionally: No more than a few times per treatment season and only for unforeseen events (e.g., disruption with product deliveries or severe adverse weather conditions).

Permittee: The licensed applicator or government entities that have obtained coverage under the permit. For nutrient inactivation projects, the Permittee may be the discharger that most closely resembles a licensed applicator.

Pesticide: WAC 15.58.030 (31) "Pesticide" means, but is not limited to:

- a) Any substance or mixture of substances intended to prevent, destroy, control, repel, or mitigate any insect, rodent, snail, slug, fungus, weed, and any other form of plant or animal life or virus, except virus on or in a living person or other animal which is normally considered to be a pest or which the director may declare to be a pest;
- b) Any substance or mixture of substances intended to be used as a plant regulator, defoliant or desiccant; and
- c) Any spray adjuvant.

Phytoplankton: Photosynthetic plant-like plankton, mainly unicellular algae.

Pollutant: Means any substance discharged that would alter the chemical, physical, thermal, biological, or radiological integrity of the waters of the state or would be likely to create and nuisance or renders such waters harmful, detrimental, or injurious to the public health, safety, or welfare, or to any legitimate beneficial use, or to any animal life, either terrestrial or aquatic. Pollutants include, but are not limited to the following: dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, pH, temperature, total suspended solids, turbidity, color, biological oxygen demand, total dissolved solids, toxicity, odor, and industrial, municipal, and agricultural waste.

Private property: Any property owned by a single person or multiple persons or business that provides no public access to a water body.

Professional botanist: A biologist who specializes in the study and identification of aquatic plants.

Public access: Identified legal passage to any of the public waters of the State, assuring that members of the public have access to and use of public waters for recreational purposes. Public access areas include public- or community-provided swimming beaches, picnic areas, docks, marinas, and boat launches at state or local parks and private resorts.

Quarantine-listed weeds: Plants listed on the WSDA Quarantine list as identified in chapter 16.750 WAC.

Recreational use: Water skiing, boating, boat access, swimming, fishing, and other such water-related activities.

Regulate: To bring under the control of law or constituted authority.

Same time of day: The same two-hour time window for pre- and post-treatment monitoring on any given day (applies to pH and dissolved oxygen monitoring).

Selective herbicide: An herbicide that kills or affects specific plant species, sparing other less-susceptible species. Selectivity occurs through different types of toxic action or by the manner in which the material is used (its formulation, dosage, timing, placement, etc.).

Sensitive, threatened, or endangered plants:

Sensitive: Any species that is vulnerable or declining and could become endangered or threatened in the state without active management or removal of threats.

Threatened: Any species likely to become endangered in Washington within the foreseeable future if factors contributing to its population decline or habitat degradation or loss continue.

Endangered: Any species in danger of becoming extinct or extirpated from Washington within the foreseeable future if factors contributing to its decline continue. Populations of these species are at critically low levels or their habitats have been degraded or depleted to a significant degree.

Sensitive, threatened and endangered aquatic species:

Threatened: An animal species likely to become endangered within the foreseeable future throughout all or a significant portion of its range. <http://www.fws.gov/endangered/>, <http://www.noaa.gov/fisheries.html>

Endangered: An animal species in danger of extinction throughout all or a significant portion of its range. <http://www.fws.gov/endangered/>, <http://www.noaa.gov/fisheries.html>

Shading products: These compounds are usually non-toxic dyes and are designed to reduce the amount of light penetrating the surface of a water body, thereby reducing plant and algae growth.

Shoreline: The area where water and land meet.

Sponsor: A private or public entity or a private individual with a vested or financial interest in the treatment. A sponsor is an individual or an entity that has the legal authority to administer common areas of the water body or locations within the water body for the purposes of aquatic plant and algae management. Typically the sponsor contracts with a licensed applicator to apply pesticides for aquatic plant or algae management. Legal entities with this authority include Lake Management Districts formed under chapter 36.61 RCW, Special Purpose Districts formed under

Title 57 RCW, Homeowners Associations formed under chapter 64.38 RCW, and groups operating under the provisions of chapter 90.24 RCW. There may be other entities with the legal authority to manage common areas in public or private water bodies. For treatment on individual lots, the sponsor must have the legal authority to contract for aquatic plant and algae management within the lot boundaries.

State experimental use permit: A permit issued by WSDA allowing use of pesticides that are not registered, or for experiments involving uses not allowed by the pesticide label. Aquatic applications are limited to one acre or less in size.

Surface waters of the state: All waters defined as “waters of the United States” in 40 CFR 122.2 within the geographic boundaries of the state of Washington. All waters defined in RCW 90.48.020. This includes lakes, rivers, ponds, streams, inland waters, and all other fresh or brackish surface waters and water courses within the jurisdiction of the state of Washington. Also includes drainages to surface waters.

Swimming restriction: Information required to be posted on all public signs stating that no swimming must occur in the treatment area for a number of hours after treatment.

Systemic herbicide: A chemical that moves (translocates) throughout the plant and kills both the roots and the top part of the plant. Systemic herbicides are generally slower-acting than contact herbicides, but tend to result in permanent removal of the targeted plants.

Treatment: The application of an aquatic herbicide, algaecide, or control product to the water or directly to vegetation to control vegetation, algae, or remove or inactivate phosphorus.

Treated area: The area where pesticide is applied and the concentration of the pesticide is sufficient to cause the intended effect on aquatic plants or algae.

Upland farm pond: Private farm ponds created from upland sites that did not incorporate natural water bodies (WAC 173-201A-260(3)(f)).

Washington Pesticide Control Act: Chapter 15.58 RCW.

Wetland: Any area inundated with water sometime during the growing season, and identified as a wetland by a local, state, or federal agency.

Wetland Specialist: A biologist who specializes in the study and identification of wetland plant species.

In the absence of other definitions set forth herein, the definitions set forth in 40 CFR Part 403.3 or in chapter 90.48 RCW apply.

APPENDIX B: PUBLIC INVOLVEMENT INFORMATION

All comments about the proposed permit must be received or postmarked by 5 p.m. on October 15, 2010 to be considered

Ecology has tentatively determined to issue the Aquatic Plant and Algae Management General Permit for aquatic plant and algae management activities as identified in Special Condition S1. Permit Coverage.

Ecology will publish a Public Notice of Draft (PNOD) on September 1, 2010 in the Washington State Register. The PNOD informs the public that the draft permit and fact sheet are available for review and comment.

Ecology will also email the notice to those identified as interested parties.

Copies of the draft general permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the Ecology offices listed below, may be obtained from Ecology's website, or by contacting Ecology by mail, phone, fax, or email.

Permit website:

http://www.ecy.wa.gov/programs/wq/pesticides/final_pesticide_permits/aquatic_plants/aquatic_plant_permit_index.html

Ecology Headquarters Building Address:

300 Desmond Drive
Lacey, WA 98503

Contact Ecology

Department of Ecology
Water Quality Program
Attn: Aquatic Plant & Algae Permit Writer
P.O. Box 47600
Olympia, WA 98504-7600

Kathy Hamel
Email: Kathy.Hamel@ecy.wa.gov
Phone: 360-407-6562
Fax: 360-407-6426

Submitting Written and Oral Comments

Ecology will accept written comments on the draft Aquatic Plant and Algae Management General Permit, Fact Sheet, and application. Ecology will also accept oral comments at the public hearings on October 4 at the Lacey Community Center starting at 1:00 p.m. and on October 6 at CenterPlace, Spokane Valley starting at 1:00 p.m. Comments should reference specific text when possible. Comments may address the following:

- Technical issues,

Draft Aquatic Plant and Algae Management General Permit Fact Sheet – September 1, 2010

- Accuracy and completeness of information,
- Adequacy of environmental protection and permit conditions,
- Any other concern that would result from the issuance of this permit.

Ecology prefers comments be submitted by email to: Kathy.Hamel@ecy.wa.gov

Ecology must receive written comments (via email or postmarked October 15) no later than 5:00 p.m. on October 15, 2010.

Submit written, hard copy comments to:

Kathy Hamel
Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

You may also provide oral comments by testifying at the public hearing.

Public Hearing and Workshop

Ecology will hold public hearings and workshops on the draft general permit at the locations below. The hearings provide an opportunity for people to give formal oral testimony and comments on the draft permit. The workshops held immediately prior to the public hearings will explain the special conditions of the Aquatic Plant and Algae Management General Permit.

Hearings and Workshops

October 4, 2010

Lacey Community Center, Lacey
1:00 pm
Banquet Room A&B)
6729 Pacific Avenue SE
Lacey, WA 98503

October 6, 2010

CenterPlace, Spokane Valley
1:00 pm
2426 North Discovery Place
Spokane Valley, WA 99216

Issuing the Final Permit

Ecology will issue the final permit after it receives and considers all public comments. Ecology expects to issue the new general permit by March 2011. It will be effective one month after the issuance date.

For further information, contact Permit Writer, Kathy Hamel, at Ecology, by phone at 360-407-6562, by email at Kathy.Hamel@ecy.wa.gov, or by writing to Ecology at the Olympia address listed above.

APPENDIX C: RESPONSE TO COMMENTS

To add after the public comment period