

# **FISHERIES RESOURCE MANAGEMENT GENERAL PERMIT**

## **Addendum to the Fact Sheet Appendix F: Response to Comments**

**September 2, 2015**

## **SUMMARY OF MAJOR PERMIT CHANGES**

This is a summary of the changes made to the Fisheries Resource Management General Permit (permit) in response to the public comments received between June 3 and July 17, 2015. In finalizing this permit, the Washington State Department of Ecology (Ecology) considered all of the public comments received during the public comment period including comments received during oral testimony at the public hearing held in:

*Moses Lake, Washington on July 8, 2015*

## **COMMENTS AND RESPONSES**

Ecology published a draft Fisheries Management General Permit on June 3, 2015 for public comment. The public comment period ended July 17, 2015 at 5PM. During the comment period, Ecology conducted one public workshop and hearing in Moses Lake. Ecology also accepted public comments via letter and email.

Ecology considered all comments in preparing the final permit. The response to comments documents Ecology's response to each commenter and any changes to the permit that resulted from the comment. Ecology received fourteen (14) comments during the public comment period. Each comment and response is numbered. This number allows the commenter to find Ecology's response to their comments. In Table 1, the comment number that corresponds to each individual commenter is listed. Full text of all comments received by Ecology can be found at: [http://www.ecy.wa.gov/programs/wq/pesticides/final\\_pesticide\\_permits/fish/fish\\_index.html](http://www.ecy.wa.gov/programs/wq/pesticides/final_pesticide_permits/fish/fish_index.html) or by contacting Nathan Lubliner at: [nathan.lubliner@ecy.wa.gov](mailto:nathan.lubliner@ecy.wa.gov) or at (360) 407-6563.

The response to comments is broken into three sections:

[Section 1](#) Table of Commenters and Comment Numbers

[Section 2](#) Comments on the Permit

[Section 3](#) Comments on the Fact Sheet

## Section 1: Table of Commenters and Comment Numbers

**Table 1: Commenters**

<b>Commenter Name</b>	<b>Affiliation</b>	<b>Comment Number</b>
Teri Jo Christianson	Badger Lake Estates	1
Gerald Watson	Interested Party	2
Andreas Udby	Interested Party	3
Martin Steele	Interested Party	4
Jerry Anderson	Interested Party	5
Carl Strode	Interested Party	6
Roger and Janet Scott	Interested Party	7
Rick Lind	Interested Party	8
Walter "Spike" Arlt	Managing Partner, Arlt Family Limited Partnership	9
Joseph R. Maroney	Kalispel Tribe of Indians	10
No Name Given (hifans@centurytel.net)	Interested Party	11
Maryanne Guichard	State of Washington Department of Health	12
Julie Ashmore	Okanogan Highlands Alliance	13
Michael J. Lidgard	Environmental Protection Agency	14

## Section 2: Comments on the Permit

**Comment #1:** We support issuance of the permit to allow WDFW to treat Badger Lake and maintain it as a trout only lake. (#1, #2, #3, #4, #5, #7, #11)

**Response:** Thank you for your comment. WDFW is the agency responsible for determining fish management priorities, what lakes get treated and when lakes need treatment. Ecology is responsible for issuing the permit coverage, under which, WDFW may discharge rotenone and potassium permanganate for fisheries management activities.

**Comment #2:** The permit should be revised to require WDFW to obtain consent from all water rights holders indicating that they agree not to withdraw surface water from the waterbody until the water is safe for use. If a holder of surface water rights does not agree to cease withdrawals of treated water, treatment with rotenone products will not commence. (#6)

**Response:** There are a number of conditions included in the permit to ensure that businesses, residents and the public are informed about the treatment and the associated water use restrictions.

The Permittee must send or deliver business and residential notices to all businesses and residents within a quarter mile along the shoreline or bank of the treatment area 14-45 days prior to treatment (Permit Special Condition S5.B.1.b). This notification also includes WDFW's responsibility to provide an alternative water supply to anyone with impacted potable, irrigation or livestock watering rights (Permit Special Condition S5.B.1.d.vii).

Additionally, newspaper notification of the proposed treatment must be put in the local or regional newspaper 14-45 days ahead of the proposed treatment (Permit Special Condition S5.2).

Shoreline postings are required to notify members of the public about the treatment and associated water use restrictions within 72 hours of treatment (Permit Special Condition S5.B.3).

When surface water withdrawal is impacted there are additional monitoring requirements that must be followed prior to WDFW notifying water rights holders that they may resume withdrawal of surface water (Permit Special Condition S6.E).

**Comment #3:** On page 10 of the Draft Permit, a distance of ¼ mile is specified for notification of property owners. This is in conflict with the ½ mile distance as presented in the Environmental Assessment. The Draft Permit should be revised accordingly. (#6)

**Response:** The ¼ mile distance for the business and residential notice (Permit Special Condition S5.B.1.b) is independent of the potable water intake language on the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) product label cited in the

Environmental Assessment. The permit reminds the Permittee that they must comply with the FIFRA label in Special Condition S4.

The Environmental Protection Agency (EPA) and the Washington State Department of Agriculture (WSDA) are responsible for approving pesticide product labels. Labels may change over time. The Environmental Assessment referenced was written in 2008 and the labels cited may have changed. For example, a current label at the time of this writing, for Prentox® Prenfish™ fish toxicant, has the following language that applies to drinking water affected by a treatment: “Drinking Water: For applications > 40 ppb or 0.04 ppm active rotenone (> 0.8 ppm 5% rotenone formulation) in waters with drinking water intakes or hydrologic connections to wells, 7 to 14 days prior to application, the Certified Applicator or designee under his/her direct supervision must provide notification to the party responsible for the public water supply or individual private water users against the consumption of treated water until: (1) active rotenone < 0.04 ppm as determined by analytical chemistry, or (2) fish of the Salmonidae or Centrarchidae families can survive for 24 hours, or (3) dilution with untreated water yields a calculation that active rotenone is < 0.04 ppm, or (4) distance or travel time from the application sites demonstrates that active rotenone is < 0.04 ppm. See Rotenone SOP Manual (SOP 16) for guidance on notification and bioassay and chemical analysis techniques and dilution, distance, and travel time criteria.”

**Comment #4:** The Draft Permit limits notification to property owners only. All residents, including those renting, leasing, farming, ranching, etc. within the notification boundary should be included in the notification process. The Draft Permit provides no assurances that actual notice of impending pesticide application will be made. (#6)

**Response:** Permit Special Condition S5.B.1.c states: “The Permittee must provide notice to residences or businesses by mail, newsletter, or handbills delivered directly to the residences or businesses.” The business and residential notice also serves to provide notice to water rights holders.

Permit Special Condition S5.B.1.e requires WDFW to maintain a copy of the business and residential notice as well as a list of locations and addresses that the notice was sent or delivered for five years.

**Comment #5:** Page 3 S1 section B. Geographic Area Covered: An item restricting the use on reservoirs, which are used for irrigation, as water quality standards may differ with the recent adopted rules on irrigation water quality and food process. New SEPA may need to be completed for irrigation reservoirs. Any effects to the irrigation water quality from Lake Rehabilitation, Rotenone, inert Ingredients, and Bacteria needs to be addressed. As the current SEPA shows the effects can last a year or more, even treatment in the fall would have an effect on the next years irrigation water.

I also know of at least one additional tribe in the state that I believe has banned the use of Rotenone on their waters. Item 3 needs to be researched and any other tribes added that do not allow rotenone in their waters. (#8, #9)

**Response:** An annual State Environmental Policy Act (SEPA) process is required for each waterbody proposed for treatment (Special Condition S8). This project level SEPA process should identify any special environmental considerations specific to reservoirs used for irrigation. Additionally, Special Condition S3.A requires the Permittee to comply with Water Quality Standards for Surface Waters of the State of Washington (WAC 173-201A), Ground Water Quality Standards (WAC 173-200), Sediment Management Standards (WAC 173-204) and human health-based criteria in the National Toxics Rule (40 CFR 131.36).

This permit is not applicable to Indian Country and trust or restricted lands except portions of the Puyallup Reservation as noted in Permit Special Condition S1.B.

**Comment #6:** Page 3, S1 permit Coverage C. Zooplankton Study.

I would like to thank the DOE for the requirements stated on page 3 S1 permit Coverage C. Zooplankton Study. (#8)

**Response:** Thank you for your comment.

**Comment #7:** Draft Fisheries Resource Management General Permit page 10 S6 Monitoring Macrophyte composition and abundance should be added to the monitoring required. Nutrient release resulting from decaying fish may cause increased plant growth and algae blooms. Aquatic weeds are a significant public safety concern as well as a problem for fish. The weeds are a danger to recreational users, decrease Rotenone effectiveness; out compete native vegetation and reduce the carrying capacity of the lake. Mitigation such as weed treatment should be added to the permit. (#8)

**Response:** Permit Special Condition S3.D informs the Permittee that they may not cause further impairment to any waterbody as a result of piscicide application. Specifically nitrogen, phosphorous and dissolved oxygen impaired waters require that the Permittee get Ecology's approval prior to treatment.

Certainly decaying fish can contribute to an increase in nutrient levels within a waterbody, which in turn can drive plant and algae growth. Leaving fish in place to decay is considered beneficial to the recovery of zooplankton populations. As discussed in the permit Factsheet; "As zooplankton populations rebound, in the weeks and months after the piscicide treatment, they will often reduce the algae population through grazing (Bradbury 1986)." The 2008 Environmental Assessment further states; "The WDFW generally plans to leave fish carcasses in the water to provide nutrients for growth of phytoplankton and zooplankton subsequent to piscicidal treatment."

**Comment #8:** Monitoring and surveying of snails should be included as part of the permit especially in areas where swimmer's itch has been reported. (#8)

**Response:** Thank you for your comment. Ecology feels that the monitoring required by the permit is adequate to demonstrate compliance with the permit, which protects the beneficial uses of the waterbody. See response to comment #7.

**Comment #9:** The permit should require the monitoring of algae and monitoring should be until the algae returns to pre-treatment conditions and not just until the Rotenone has dissipated. (#8)

**Response:** Thank you for your comment. The release of nutrients, due to decaying fish, as a result of rotenone treatment, is temporary. As discussed in the response to comment #7 the nutrients released by decaying fish serve to aid the recovery of zooplankton after treatment. Monitoring requirements are in place to ensure that permit conditions are being met. The permit has no conditions imposing limits regarding algae.

Treatment of aquatic plants and algae in irrigation canals is covered by the Irrigation System Aquatic Weed Control Permit ([http://www.ecy.wa.gov/programs/wq/pesticides/irrigation/irrigation\\_index.html](http://www.ecy.wa.gov/programs/wq/pesticides/irrigation/irrigation_index.html)).

If you believe that a waterbody is experiencing a toxic algae bloom and would like to have the algae identified you can do so through the following website: <https://www.nwtoxicalgae.org/ReportBloom.aspx>.

**Comment #10:** The NPDES permit should require monitoring of any inert ingredients listed on the MSDS. Especially those ingredients that possibly cause cancer, such as n---Methyl2--Pyrrolidone.

What is meant by the ALS lab's statement in the WDFW monitoring of volatile organic compounds test report of "No abnormalities or nonconformance were observed during the analyses of the project samples"? (#8, #13)

**Response:** Permit Special Condition S6.E states: For treatments using liquid rotenone formulations that contain VOC's: "Permittees must demonstrate that the treated water body has returned to pre-treatment levels or is below 0.5 ppb for any VOC identified by the Material Safety Data Sheet (MSDS) for the product used. Permittees must conduct pre-treatment VOC testing to determine if VOC's are present in the water body prior to treatment (background levels of VOCs). Permittees are responsible for ensuring VOC's discharged to the water body from treatments have dissipated to background levels or dropped below 0.5 ppb before surface water withdrawal can resume. Analytical methods used for VOC monitoring must have a 0.5 ppb lower detection limit."

Furthermore, S6.E provides the following statement on monitoring on waterbodies with irrigation or livestock watering rights. "For irrigation and livestock watering rights: Permittees must demonstrate that the treated water body meets the standards applicable to crop irrigation and livestock watering required by the FIFRA label for the rotenone product used."

Special Condition S3.A requires the Permittee to comply with Water Quality Standards for Surface Waters of the State of Washington (WAC 173-201A), Ground Water Quality Standards (WAC 173-200), Sediment Management Standards (WAC 173-204) and human health-based criteria in the National Toxics Rule (40 CFR 131.36).

The ALS Lab statement “No abnormalities or nonconformance were observed during the analyses of the project samples,” is a quality control statement that is referring to their analytical test rather than a statement regarding water quality.

**Comment #11:** The monitoring required by the NPDES should not only focus on water quality but also take into account ecosystem impacts that affect water quality and public safety. The NPDES permit required monitoring should include collection of baseline data, adequate monitoring for all potentially impacted trophic levels in addition to water quality parameters, and follow up for at least three years to determine what the impacts to these aquatic ecosystems have been. The goal should be for healthy aquatic ecosystems which include water quality and public safety. (#8)

**Response:** Thank you for your comment. Ecology feels that the monitoring required by the permit is adequate to demonstrate compliance with the permit, which protects the beneficial uses of the waterbody. Ecology develops NPDES permits for pesticide discharge with the goal of protecting the beneficial uses of the waterbody. This permit is a discharge permit that regulates the discharge of chemicals, rotenone and potassium permanganate, to waters of the state. Implementing an extensive ecosystem wide monitoring program similar to what might be found in a lake management plan is outside the scope of this permit.

**Comment #12:** We are opposed to the intentional dumping of such toxins into our pristine waters in Eastern Washington. Ban the Fish and Wildlife Rotenone applications in the State of Washington to stop the 10th application to Park and Blue Lakes! (#9)

**Response:** Thank you for your comment.

**Comment #13:** In this new draft version of the "General Permit" (see Appendix F-1 on page 3) there is nothing about meeting any of this WAC, or why this permit is needed. It is completely omitted and void of the RCW Chapter 90.48 • the State Water Pollution Control Act. (#9)

**Response:** The Draft Fisheries Resource Management NPDES and State Waste Discharge General Permit Fact Sheet provides the legal and technical justification for the permit. The factsheet provides a discussion on how RCW 90.48 applies to the permit.

**Comment #14:** This New "General Permit" is also in direct conflict with the Department of Ecology 3 primary goals, see Appendix A-2: Prevent pollution, clean up pollution and support sustainable communities and natural resources. There is no question this old and new permit allows tons of powdered poison and barrels of liquid poisons to be put into streams and lakes which affect state statutes, Ecology goals and F&W conservation negatively.

Other important areas are:

Toxics Cleanup  
Water Quality  
Water Resources  
(#9)

**Response:** Our Water Quality Program has goals to prevent and reduce water pollution and to clean up polluted waters. The linked article, which is an Ecology Blog posting from May 26 (<http://ecologywa.blogspot.com/2015/05/how-and-why-we-regulate-use-of.html>), provides an explanation of why Ecology permits the use of aquatic pesticides.

The federal Clean Water Act and the state's Water Pollution Control Act give us the basic structure of the regulatory programs we use to clean up and protect the health of our waters.

Under our Clean Water Act authorities, a water quality permit is a legal tool that authorizes and limits a pollution discharge. Our Clean Water Act permits allow the discharge of a limited amount of pollution and we recognize that the limited amount of pollution may have impacts. NPDES permits put conditions on the discharge of chemicals to minimize potential impacts.

Clean Water Act and state law allows the use of aquatic pesticides for the purpose of protecting the benefits that our waters provide.

Aquatic pesticides, when used carefully under a water quality permit, can protect water used for domestic, industrial and agricultural purposes, and for livestock, shellfish harvesting, habitat, commerce and navigation, and boating.

**Comment #15:** The Columbia Plateau streams and lakes must be removed from the Fish and Wildlife Lake and Stream Rehabilitation programs that use Rotenone and toxic chemicals to temporarily modify pollution and the environment. (#9)

**Response:** WDFW is tasked by the legislature to set fisheries management goals. Ecology relies upon WDFW expertise to set those fish management goals.

**Comment #16:** The toxic chemical that should be tested for in wells and the surface waters of lakes is: Piperonyl Butoxide. (#9)

**Response:** The permit does not allow the use of piperonyl butoxide (PBO). The use of PBO would be a permit violation.

The permit only allows for the discharge of aquatically labelled rotenone products and potassium permanganate. Since the use of PBO is not authorized, monitoring for PBO under the permit is not necessary.

**Comment #17:** You expect property owners who have surface waters and well water rights to give this up with no replacement or compensation for the loss of water. (#9)

**Response:** The Permittee must send or deliver business and residential notices to all businesses and residents within a quarter mile along the shoreline or bank of the treatment area 14-45 days prior to treatment (Permit Special Condition S5.B.1.b). This notification also includes WDFW's responsibility to provide an alternative water supply

to anyone with impacted potable, irrigation or livestock watering rights (Permit Special Condition S5.B.1.d.vii).

**Comment #18:** On page 3, item, S1.PERMITS COVERAGE, item A. Activities Covered under this Permit. **It is very clear here that rotenone and potassium permanganate is the only allowable piscicide for future use in the State of Washington for fish management activities.** How can this toxic chemical poison select the differences between native and non native fish when there is no definition anywhere that we have found of those specific species in the State of Washington. (#9)

**Response:** Permit Special Condition S1.A states: “This permit allows the use of rotenone and potassium permanganate in *surface waters of the state of Washington* for fish management activities.” The decision to control fish populations is made by WDFW, and primarily targets non-native fish species. Ecology understands that rotenone is non-selective and is lethal to both native and non-native fish species.

**Comment #19:** The National and State Columbia Plateau region is very concerned about endangered species. We have been very concerned about the endangered Bald Eagles identified and living in this region and especially those living in the Park Lake area. (#9)

**Response:** At authorized concentrations rotenone should not pose a threat to birds through acute toxicity. The Risk Assessment for rotenone cites sub-acute dietary toxicity studies with an LC<sub>50</sub> of the most sensitive bird species studied, ringneck pheasant, at 1608 parts per million (ppm). The current FIFRA label for rotenone allows for a maximum discharge rate of 0.2 ppm. Ecology does not expect impacts to birds from rotenone toxicity.

**Comment #20:** No Westside Applications ... Why? Only Eastside Applications ... Why? Is there a political discrimination of toxic pollution between the Westside and Eastside of the state? (#9)

**Response:** Ecology has not conditioned the permit to limit treatments to the Eastside of the state. WDFW is responsible for determining the location and timing of fisheries management treatments under this permit. Permit Special Condition S1.A states that rotenone and potassium permanganate may be used in surface waters of the state of Washington for fish management activities.

**Comment #21:** Will the permit require testing of inert ingredients? Will toxic chemicals be identified before applications are made? (#9)

**Response:** Rotenone products will not be tested for inert ingredients prior to application. Inert ingredients are generally considered by the registrant to be proprietary information. Hazardous chemical in concentrations greater than 1% of the product formulation and carcinogenic chemicals in concentrations greater than 0.1% of the product formulation will be identified on the Material Safety Data Sheet (MSDS). Rotenone products have an associated MSDS which must list hazardous chemicals that

are found in a product in quantities of 1% or greater or 0.1% or greater if the chemical is a carcinogen. ([www.ehso.com/msds\\_regulations.php](http://www.ehso.com/msds_regulations.php)).

When pesticide products are submitted to EPA for registration they often provide toxicity testing results for the product formulation not just the active ingredient. As a result, the risk assessment considers the chemicals in the product formulation when determining risk associated with the proposed registration. Per EPA: “In situations where a pesticide formulation may be more toxic to aquatic animals than the active ingredient, EPA may consider aquatic exposure to the formulation.”

([http://www.epa.gov/oppefed1/ecorisk\\_ders/toera\\_analysis\\_exp.htm](http://www.epa.gov/oppefed1/ecorisk_ders/toera_analysis_exp.htm))

**Comment #22:** Will domestic wells (adjacent to streams and lakes) be tested before and after rotenone applications for toxic chemicals? (#9)

**Response:** Testing of domestic wells is not a monitoring requirement in the permit. The 2007 Risk Assessment for Piscicidal Formulations of Rotenone cites sampling of wells monitored for rotenone after treatments in both California and Oregon (Section 7.5.1). No rotenone was detected in any of the samples from the two projects cited. The 2007 Risk Assessment for Piscicidal Formulations of Rotenone can be found at:

[http://www.ecy.wa.gov/programs/wq/pesticides/enviroReview/riskAssess/csirotenone\\_ra\\_062907.pdf](http://www.ecy.wa.gov/programs/wq/pesticides/enviroReview/riskAssess/csirotenone_ra_062907.pdf).

**Comment #23:** The Kalispel Tribe of Indians is writing in support of the Department of Ecology’s proposal to issue the Fisheries Resource Management General Permit to the Washington Department of Fish and Wildlife (“WDFW”). This permit will enable WDFW to expedite the conservation of native fish through the application of rotenone. This naturally derived chemical is the best available tool in terms of costs and performance to eradicate non-native fish at a relatively large scale. Its ongoing use is critical to the success of native fish recovery in the Pend Oreille Basin and the prevention of future ESA listings. (#10)

**Response:** Thank you for your comment.

**Comment #24:** Our Division has some remaining concerns about the contents of the draft permit and permit Fact Sheet. Our primary concern is the ability of the permittee to use methods other than direct water sampling to determine that the water is safe to drink after treatment with rotenone. We feel that analytical testing is the best method to determine that the water is safe to drink. Direct water sampling aligns with the requirements of the federal Safe Drinking Water Act, which public water systems must comply with to ensure safe drinking water.

We understand that the monitoring options outlined in the permit are based on the Standard Operating Procedures (SOP) 16 in the rotenone SOP Manual; however, we believe that the picture is not as clear as it could be for the ability of rotenone to remain in the environment and for the accuracy of fish bioassays. Although the water concentration of rotenone during treatment of a water body varies depending on the treatment objective, the Environmental Protection Agency (EPA) assumes that the peak estimated water concentrations during treatment is 200 parts per billion (ppb). However, the Drinking Water Level of Concern (DWLOC) established by

EPA is 40 ppb. EPA believes that under certain circumstances residues of rotenone in drinking water could exceed the DWLOC (40 ppb) for up to several weeks. This is the reason EPA requires testing before the water is declared safe to drink (EPA RED, 2007).

The EPA and the permit allow a fish bioassay to serve as this safety test. The logic is that fish are killed by rotenone at concentrations below 40 ppb so this should serve as a sensitive test for human safety. However, according to a 2008 report by EPA, acute toxicity results are variable within the same fish species (Risks for rotenone use to federally threatened California Red-Legged Frog, 2008). For example, of sixteen acute toxicity studies on rainbow trout deemed acceptable to EPA, the lethal concentrations that killed fifty percent of tested fish (LC50) for rotenone ranged from 0.84 to 52 ppb. Nine of these studies had LC50s  $\geq$  35 ppb (near the DWLOC). Unless you have data demonstrating that the fish bioassay is consistently protective under the conditions of Washington State lakes, we think it is prudent public health practice to test drinking water analytically before declaring that the water is safe to drink after a rotenone application. (#12)

**Response:** The trout bioassay is appropriate for complying with potable water requirements in the permit. The trout bio-assay test method provided in the Planning and Standard Operating Procedures for Use of Rotenone in Fish Management (2010) incorporated as part of the FIFRA product label is; approved by the EPA, sufficiently sensitive, reliable, and provides quick results.

Consistency in the reporting of LC<sub>50</sub> values is an issue. Reporting of LC<sub>50</sub> values of rotenone on rainbow trout can be given as mass per volume for the active ingredient or the formulation. Product formulations often contain around 5% rotenone (active ingredient) and could result in an LC<sub>50</sub> value about 20 times greater than if the LC<sub>50</sub> value was calculated based on the active ingredient. This is illustrated by looking at the rainbow trout data presented in Table 9 of the Rotenone Human Health and Ecological Risk Assessment FINAL REPORT 2008. Additionally this report provides the following information on rotenone toxicity: “As noted by Chen and Farrell (2007) the concentration-response relationship for rotenone is very steep: the study indicates that a concentration of 5 ppb resulted in no mortality, while a concentration of 6.6 ppb resulted in 100% mortality. Although this example may be extreme, the steep concentration-response relationship is consistent with the apparently steep dose-severity relationship in mammals (Section 3.3.4) as well as the apparently steep dose-severity relationship in aquatic invertebrates (Section 4.3.3.3).” This result indicates that the range between which rotenone causes 100% mortality and no mortality is very narrow.

The Risk Assessment for Piscicidal Formulations of Rotenone, 2007, provides 96 hour LC<sub>50</sub> values for rainbow trout (Table 6.1) ranging from 0.84-52 parts per billion. The footnote provided with the table states: “The EFED table containing these data states that these endpoint results were all based upon the amount of active ingredient. However, Brian Montague, who manages the EFED one-liner database stated that the instructions for entering data into the one-liner database are for toxicity values to be entered for the test material; they are not corrected for the percent active ingredient. (Brian Montague, EFED/EPA, email communication, May 17, 2007)” This footnote indicates that the EPA

database manager acknowledges that data is stated to be reported as active ingredient when it may actually represent the product formulation.

**Comment #25:** We also recommend that you continue to evaluate emerging information about rotenone and Parkinson's Disease and update the health risk assessment supporting this permit, as necessary. The 2007 rotenone risk assessments done by EPA and contractors for the Washington State Department of Fish and Wildlife (EPA RED, 2007 and Risk Assessment for Piscicidal Formulations of Rotenone, 2007), acknowledged a growing body of research into rotenone's potential to contribute to Parkinson's Disease. Both concluded that there was little risk with modern piscicidal applications of rotenone. Since these assessments, new mouse studies have shown novel pathways for progression of damage from gut neurons to the brain neurons that may alter risk assessment assumptions about oral exposure to rotenone. In addition, a number of new studies have shown elevated risk of Parkinson's Disease in people who applied rotenone historically and suggest that rotenone exposure may interact with dietary and genetic factors in producing Parkinson's Disease (see references). While none of these new studies prove that rotenone contributes to Parkinson's Disease in people, they do support an attitude of caution when it comes to minimizing rotenone exposure. (#12)

**Response:** Ecology has the authority to regulate water quality through NPDES permits. Rotenone exposure, in terms of Parkinson's Disease like symptoms, is primarily a risk to applicators handling concentrated product if they don't employ proper personal protective equipment and is not a water quality issue that Ecology can regulate through the NPDES permit. It is for this reason that Ecology cannot require an update to the rotenone health risk assessment to address Parkinson's Disease in the permit. Applicator exposure and reduction of rotenone exposure is addressed by the FIFRA product label, MSDS and the incorporated SOP manual for use of rotenone.

**Comment #26:** Add a requirement that the sampling plan submitted under section 6 B-Monitoring a Chain of Lakes in the permit must specifically address each known drinking water intake in each body of water. (#12)

**Response:** Ecology does not intend for the chain of lakes monitoring condition to reduce requirements for potable water monitoring. The following change will be made to clarify this condition.

**Change:** Permit Special Condition S6.B will be changed to read:

#### **B. Monitoring a Chain of Lakes**

When monitoring a chain of lakes, each individual water body need not be monitored. The Permittee must submit a sampling plan, for monitoring lake chains, for Ecology approval at least one month prior to treatment. The Permittee must monitor treatments on a chain of lakes according to the Ecology approved sampling plan. Monitoring on a chain of lakes does not reduce the Permittees responsibility to complete required monitoring for water bodies with surface water rights (Special Condition S6.E).

**Comment #27:** OHA supports the inclusion of a zooplankton study in the NPDES permit, and we urge Ecology to require that a baseline study be done each year on all waters scheduled to be treated, instead of providing three years for a single study to be completed at some point during each permit cycle on selected lakes. Follow-up monitoring should be done subsequent to all treatments, to compare the conditions before and after rotenone treatment. In addition, the study should be expanded to include macroinvertebrate populations, with monitoring occurring both before and after treatments. (#13)

**Response:** In the past the Fisheries Resource Management Individual Permit required zooplankton monitoring to examine impacts to zooplankton from rotenone treatment. The data collected was of limited use for describing impacts to zooplankton populations and their recovery after piscicide treatment due to the lack of control sites and the limited number of samples taken. The proposed permit requires WDFW to complete a Zooplankton Study focused on impacts and recovery of zooplankton populations from piscicide treatments in multiple lakes over multiple years. WDFW must complete the Zooplankton Study within three years of permit issuance.

Monitoring requirements are in place to ensure that permit conditions are being met. The permit has no conditions imposing limits regarding zooplankton or macroinvertebrates. The required study is expected to characterize the response of zooplankton to rotenone treatments. For these two reasons the required zooplankton study is an appropriate way to characterize impacts to zooplankton.

**Comment #28:** On page 35, the draft permit states, “We will not assume that zooplankton will recover to a pre-treatment state; rather that zooplankton in treatment lakes will be no different than zooplankton in control lakes following rotenone treatment.” This assumption should be reassessed. Introducing poison into public waters should only be considered if Ecology can ensure, through NPDES permit requirements, that both zooplankton and macroinvertebrate populations will recover to a pre-treatment state. Also, without baseline inventory and follow-up monitoring of the macroinvertebrates found in lakes being treated in WA State, it is impossible to know whether rare species are being adversely impacted. (#13)

**Response:** See responses #14 and #27.

**Comment #29:** A critical component to the zooplankton study is appropriate selection of control lakes. The draft NPDES states, “Control lakes are slightly larger and at higher elevations compared to treatment lakes.” OHA finds these differences to be unacceptable. Additionally, the public should be provided with documentation of the criteria that make each of these lakes suitable (or unsuitable) for supporting a trout-only fishery in a program that targets mainly lowland lakes. (#13)

**Response:** Ecology believes the selection of control lakes is adequate for conducting the study. The zooplankton study provided in Appendix C of the permit was developed by Dr. Angela Strecker at Portland State University with input from WDFW. The study was reviewed and approved by Ecology prior to inclusion in the permit. WDFW is

responsible for fisheries management and is the agency that should be contacted with questions regarding determination of lakes managed as trout only fisheries.

**Comment #30:** Baseline and post-treatment monitoring of macroinvertebrates, amphibians, waterfowl, and terrestrial waterfowl should be conducted on treatment sites. (#13)

**Response:** See response to comment #11.

**Comment #31:** The NPDES permit should require monitoring for n-Methyl 2-Pyrrolidone (NMP), a component of the formula being used for treatments, instead of using general language such as “any other inert ingredients listed on MSDS”. (#13)

**Response:** Special Condition S6.E.1.b states” For treatments using liquid rotenone formulations that contain VOC’s: Permittees must demonstrate that the treated water body has returned to pre-treatment levels or is below 0.5 ppb for any VOC identified by the Material Safety Data Sheet (MSDS) for the product used.”

Not all rotenone product formulations contain n-Methyl-2-Pyrrolidone. The statement to rely on the MSDS to identify chemicals to test allows for differences between rotenone product formulations as well as future changes to rotenone product formulations without reducing the requirement of the Permittee to test for those chemicals.

**Comment #32:** As mitigation for impacts of rotenone use, OHA strongly encourages Ecology to prioritize protection of the above-mentioned species by not allowing treatment of lakes that support these species for breeding and/or foraging, with particular care to avoid loon-nesting lakes. (#13)

**Response:** WDFW is the agency responsible for fish and wildlife management in Washington State as well as state listed sensitive, threatened and endangered species. The only applicant allowed to obtain coverage under this permit, and the agency responsible for identifying lakes for treatment under this permit is WDFW. Permit Special Condition S8 covers the annual SEPA process to be conducted for each waterbody proposed for treatment.

**Comment #33:** OHA urges Ecology to consider the management goals for these bodies of water and whether these goals are realistic and appropriate for the ecosystems involved. (#13)

**Response:** The annual SEPA process required in Special Condition S8 addresses whether fisheries management activities are appropriate for the proposed waterbody. WDFW is the agency responsible for determining fish and wildlife management goals in Washington State. The Fisheries Resource Management NPDES General Permit is in place to protect beneficial uses of the waterbody by conditioning the discharge of rotenone and potassium permanganate use for fisheries management. See response to comment #14.

**Comment #34:** Two invertebrate species have been identified that may potentially be found in eastern Washington treatment areas as State Candidate species (Columbia clubtail, Gomphus lynnae, and California floater Anodonta californiensis). Ecology should require WDFW to conduct baseline data collection immediately, before implementing any further treatment. (#13)

**Response:** See response to comment #32.

**Comment #35:** The NPDES should include a stronger communication component for excluding the public from treatment areas. Adequate signage is essential, in English and Spanish, during the initial period after a rotenone treatment is implemented. (#13)

**Response:** Ecology believes that the permit contains very strong public notification requirements.

Shoreline sign templates are provided in English and Spanish ([http://www.ecy.wa.gov/programs/wq/pesticides/final\\_pesticide\\_permits/fish/docs/SignTemplatesShorelinePosting.pdf](http://www.ecy.wa.gov/programs/wq/pesticides/final_pesticide_permits/fish/docs/SignTemplatesShorelinePosting.pdf)).

Shoreline posting signs must be placed with 72 hours of treatment. Removal of shoreline postings is given in permit special condition S5.B.3.c which states: “The Permittee must remove all old signs after bioassays and/or toxicity testing has determined that the chemical applied and its breakdown products are no longer present at toxic levels (Special Condition S5.B.1.d.vii and S6).”

Shoreline postings are required for public shorelines, boat launches, businesses and residences surrounding the treated waterbody. Requirements for placement of shoreline posting signs are given in permit special condition S5.B.3. Additional requirements and guidance for shoreline sign posting are given in the FIFRA product label and the SOP manual (<http://www.fisheriessociety.org/rotenone/rot.pdf>).

**Comment #36:** WDFW should be required to communicate extensively with the public prior to treatment to minimize the amount of waste involved in killing healthy fish. For example, in the weeks leading up to a treatment, there should be no catch limits until the lake is treated with rotenone, so that people can take advantage of those fish and allow them to be utilized. (#13)

**Response:** WDFW is the agency responsible for fisheries management in Washington State, including the setting of catch limits. It is Ecology’s understanding that WDFW often relaxes the catch limits on water bodies prior to rotenone treatments.

**Comment #37:** The Lake and Stream Rehabilitation Program should also be required to adopt an adaptive management plan so that if monitoring shows significant impacts, corrective action can be taken. (#13)

**Response:** The permit revision and reissuance process along with permit conditions provide a framework for adaptive management. Ecology developed the proposed permit based on written and oral feedback from WDFW, internal agency staff, and natural

resource scientists from other government agencies. Ecology will further revise the draft permit based on the formal public comment period and testimony received at public hearings.

Ecology has required WDFW to complete a zooplankton study (Permit Appendix C) within the first three years from the date of permit issuance. The zooplankton study will provide data for zooplankton populations in treatment and reference lakes and will be used to determine how zooplankton populations recover following piscicide treatment.

Ecology reviews and refines management and control programs in cycles not to exceed five years or the period of permit reissuance.

**Comment #38:** Permit, Page 3, S 1.

The permit states, "WDFW may cooperate with state, county governments ... to conduct fisheries management projects." The nature in which WDFW will cooperate is unclear. Please clarify in the permit or in response if cooperate means "under the direct supervision" of WDFW in applying rotenone or if cooperate means working with other entities on other project related activities that do not include direct handling of rotenone. (#14)

**Response:** Ecology agrees that this statement needs clarification and will change the permit as follows.

**Change: S1. PERMIT COVERAGE** will be changed to state the following: WDFW may cooperate with state, county and municipal governments, and with private citizens to conduct fisheries management projects under coverage of this permit. As Permittee WDFW must be the *applicator* and *decision maker* for all treatments conducted under this permit.

The following definitions will be added to Appendix A.

**Applicator:** An individual licensed to apply aquatic pesticides by the Washington Department of Agriculture under Chapter 17.21 RCW and Chapter 16-228 WAC.

**Decision Maker:** The entity with control over the decision to perform pesticide applications including the ability to modify those decisions that result in a discharge to waters of the state.

**Comment #39:** Permit, Pages 6-10, SS.

The permit states, "[t]he Permittee must use the shoreline posting templates provided on the Fisheries Resource Management General Permit website." The permit provides the link to this website in the text (<http://www.ecy.wa.gov/programs/wg/pesticides/fish/index.html>). The EPA recommends the signage be reviewed, evaluated, and if needed, redesigned to ensure signs are understandable by the public including children. Signage should consider not just language options, but also symbols that depict the hazards and communicate the risks of swimming or fishing in treated waters, for example, symbols for "no swimming," "no drinking," and "no fishing" should be included on the template. (#14)

**Response:** Ecology has reviewed the proposed shoreline posting sign templates and agrees that the addition of hazard symbols for “no fishing”, “no swimming” and “no drinking” should be included. Shoreline sign posting templates may be viewed on Ecology’s Fisheries Resource Management General Permit website ([http://www.ecy.wa.gov/programs/wq/pesticides/final\\_pesticide\\_permits/fish/fish\\_index.html](http://www.ecy.wa.gov/programs/wq/pesticides/final_pesticide_permits/fish/fish_index.html)).

**Comment #40:** Permit, Page 20, SIO.

Under A.2 of this section, the permit states, “[w]hen application requirements differ from the label, the permittee must comply with the more restrictive of the two requirements. The permit should make it very clear, that the label and SOP requirements (referenced in subsection B. of this section) must always be followed and that all conditions of the permit are in addition to the label and SOP requirements. Additionally, it would helpful under subsection B. to provide an active URL address for access to the SOP [<http://www.fisheriessociety.org/rotenone/rot.pdf>] . (#14)

**Response:** Permit Special Condition S4 states: “The Permittee must comply with all the requirements on the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) product label. Permit requirements do not reduce the requirements on the FIFRA label.”

The Planning and Standard Operating Procedures for Use of Rotenone in Fish Management document is provided on Ecology’s Fisheries Resource Management General Permit website along with the other supporting documents for the permit ([http://www.ecy.wa.gov/programs/wq/pesticides/final\\_pesticide\\_permits/fish/fish\\_index.html](http://www.ecy.wa.gov/programs/wq/pesticides/final_pesticide_permits/fish/fish_index.html)).

### Section 3. Comments on the Fact Sheet

**Comment #41:** Do not remove the definition of “permittee” from the Fact Sheet. Return it to the definitions of the Fact Sheet and use the language currently found in the definitions of the permit. (#12)

**Response:**The following definition of “Permittee” is incorporated by reference into the Draft Fisheries Resource Management NPDES and State Waste Discharge General Permit Fact Sheet.

**Permittee:** WDFW, who may apply for and gain coverage under this permit and has control of, or causes a discharge under coverage of this permit.