



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**

NATIONAL MARINE FISHERIES SERVICE  
Washington State Habitat Office  
510 Desmond Drive SE, Suite 103  
Lacey, WA 98503

January 10, 2008

Mr. Mike Gearheard  
Director, Office of Water and Watersheds  
U.S. Environmental Protection Agency, Region 10  
(OWW130)  
1200 Sixth Avenue  
Seattle, Washington 98101

Dear Mr. Gearheard:

The State of Washington Department of Ecology (Ecology) has recently issued a Public Notice Draft National Pollution Discharge Elimination System (NPDES) Industrial Stormwater General Permit for public review and comment. With the CWA authority delegated from the EPA, Ecology proposes to reissue the Industrial Stormwater General Permit to over 1,150 industrial facilities in Washington State, revoking and replacing the current permit.

We support Ecology's objectives in permitting a large number of industrial facilities, which will reduce the discharge of contaminated stormwater from industrial activities into receiving waters, and help protect fish and wildlife resources including threatened and endangered salmon. We are pleased that the Draft Industrial Stormwater General Permit increases the level of protection for listed salmon by reducing the total copper threshold from 63.9  $\mu\text{g/L}$  to 20  $\mu\text{g/L}$ . We expect that the change in the copper threshold would minimize copper loadings in some waterbodies within the State, over those authorized by the current permit. However, we must also note that we do not expect the copper threshold levels within the permit will completely eliminate adverse effects to salmon, including species listed under the Endangered Species Act. In particular, the scientific information available to us suggests that behavioral and physiological effects of dissolved copper to listed salmon may occur at values ranging from 0.18 to 2.1  $\mu\text{g/L}$  in freshwater (Hecht et. al, 2007).

We are also concerned that, given the frequency and timing of monitoring in the draft permit, the likelihood of missing storm events where discharges exceed a benchmark or threshold for copper or other pollutants is high. Further, Ecology's reliance on the central tendency of the data suggests that some facilities may be able to exceed permit conditions, including effluent standards, and not be required to address these exceedances. Others may be able to exceed effluent standards for months or years before taking corrective actions. In the interim, some runs of listed salmon and their critical habitat could be repeatedly exposed to sufficiently high copper, zinc, and other pollutant



levels that may cause serious behavioral and physiological consequences before corrective action is taken to minimize loadings in receiving waters.

According to the processes outlined in the Memorandum of Agreement (hereafter "MOA") (May 22, 2001, 66FR 11202-11217, Section IX.A., 3.-6.), between the Environmental Protection Agency (EPA) and the National Marine Fisheries Service (NMFS) regarding enhanced coordination under the Clean Water Act (CWA) and Endangered Species Act (ESA), we have met with Ecology to discuss our identified concerns with the permit. We are sending these comments to you because of EPA's acknowledged oversight role in the issuance of this permit under Section 402(d) of the Clean Water Act (CWA), and acknowledged responsibility to comply with Section 7(a)(2) of the Endangered Species Act (ESA). As per the MOA, this letter serves written notice of our phone contact to you on January 4, 2008, relaying our concern that the stormwater discharges authorized under this permit --- even though they are a major improvement over the current levels --- are still at levels likely to have more than minor detrimental effects to ESA listed salmon and critical habitat.

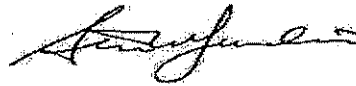
The geographic area covered by the permit overlaps the range of 15 federally-listed threatened or endangered salmon, as well as designated critical habitat for 13 of these populations. The permit area overlaps areas addressed by the Puget Sound Shared Strategy Recovery Plans, Lower Columbia River Fish Recovery Board, the Upper and Mid-Columbia Fish Recovery Boards, the Governor's Salmon Plan, and the Puget Sound Partnership. Most of these plans have identified stormwater runoff as a significant factor in reaching salmon recovery. In addition, the Puget Sound Partnership has developed recommendations for addressing stormwater effects with the goal of achieving a healthy Puget Sound by the year 2020. Also, a recent report supported by your agency, identified stormwater runoff as the greatest contributor of the worst pollutants in Puget Sound (Hart Crowser, Inc. et al. 2007). Therefore, we encourage Ecology and EPA to continue to reduce pollutant levels, including dissolved copper levels, to State waters.

We look forward to continued coordination with EPA and Ecology on NPDES permits, as well as completing our ESA consultations on Water Quality Standards as they are revised in Washington State and at the National level. Please note that our National Office is currently engaged in formal consultation with EPA on the national Multisector General Permit, which covers industrial stormwater discharges in non-delegated states and Federal and Tribal lands in delegated states, including Washington. Through our continued effort with EPA at the national level on the Multisector general permit, NOAA expects to present further information and engage in further discussions that should help inform both national water quality standards and state water quality standards. We expect that consultation to consider not only copper but also other heavy metals of concern. In the course of these discussions, we may suggest additional ways to minimize adverse effects of stormwater on NMFS' trust resources. While we are encouraged by

the progress that Ecology has made on their proposed industrial stormwater permit, our comments on the this Draft Stormwater Industrial General Permit should not be understood to limit or otherwise prejudice our recommendations in the future on national or regional actions.

Thank you for the opportunity to provide these comments under the process identified in the MOA. Please call me at (360) 753-6054 if you would like to discuss this issue further.

Sincerely,



Steven W. Landino  
Washington State Director  
for Habitat Conservation

Attachments: (2)

cc: Dave Peeler, Ecology  
Ken Berg, USFWS

## Attachment A: NOAA Fisheries Review of the NPDES Industrial Stormwater General Permit

Waters affected by the industrial permit are important to the ecology of salmonids listed as threatened or endangered pursuant to the Endangered Species Act of 1973, as amended (ESA). Based on the body of scientific evidence available, these discharges are likely to produce water quality conditions that have behavioral and physiological consequences for salmon that may reduce the viability of populations exposed to those conditions. The purpose of this attachment is to describe and support this conclusion with available scientific and commercial information. Our review analyzes the primary effects of the Industrial Permit and the stormwater discharges it authorizes on listed salmonids, concentrating on pollutant levels, monitoring and corrective actions.

### Pollutant levels

In this section, we focus on copper and zinc as examples of pollutant benchmark levels proposed in the permit that we expect will have more than minor detrimental effects on salmonids. While we expect that levels of other pollutants such as TSS, lead, nitrate, phosphorus, and others covered in the permit also have adverse effects, we focused our review on the effects of copper and zinc to illustrate our concerns.

Salmon experience adverse effects at 2 µg/L dissolved Cu (Hecht et al 2007) and 5.6 µg/L dissolved Zn (Sprague 1968). For copper, these effects include interference with fish sensory systems and important behaviors that underlie predator avoidance, juvenile growth and migratory success. For zinc, these effects include altered behavior, blood and serum chemistry, impaired reproduction, and reduced growth. These effects occur at pollutant levels that are 10 and 20 times lower than the benchmark levels of 20 µg/L total Cu and 115 µg/L total Zn specified in the proposed Industrial permit. About one quarter of the permittees will be discharging to 303(d) listed waters and will have to meet a stricter benchmark of 7 µg/L total Cu and 77.5 µg/L total Zn. These benchmarks are still approximately 3.5 and 14 times higher than the level at which adverse effects occur to salmon. An example of adverse effects at an approximate benchmark level has been documented using a short-term exposure to 20 µg/L dissolved Cu (approximate benchmark level), which reduced the olfactory response of salmon by 82 percent (McIntyre et al, in press). Significant impairment of sensory functions may occur following 10 minutes of low level exposure and continue for hours to weeks depending on concentration and duration.

According to a report prepared for Ecology (Envirovision et al 2006), benchmarks were selected using a Simple Percentile method and individual facility median pollutant values equivalent to the 50<sup>th</sup> percentile of the available data. This level equates to the level of pollutant discharge that half of the permittees have managed to attain. In other words, it appears the resulting benchmarks of 20 µg /L total Cu and 115 µg/L total Zn were chosen based on treatment technologies, not State water quality standards. The state water quality acute and chronic criteria are more stringent for Cu (13 µg/L (chronic) and 9 µg/L (acute) dissolved) compared to 20 µg/L total Cu (based on 100mg.l hardness). However,

the same Ecology report (Envirovision et al 2006) states that "...permit targets generally contain effluent limits based on State water quality standards or treatment technologies and the most stringent of these two limits, must be chosen to establish the permit limit for each parameter of concern. We believe the implementation of this lower target level is an improvement over past target levels and as a result, may lead to corrective actions early than had occurred under the current permit. Nevertheless, we are concerned that this lower target level would still result stormwater discharges of dissolved copper and other pollutants that have more than a minor detrimental effect on listed salmon species and their designated critical habitat.

### Monitoring

Ecology has had an Industrial permit in effect in Washington State since 1992. Between 1992 and 2000, monitoring was conducted through on-site field visits by Ecology staff. After 2002, permittees were required to start collecting their own monitoring information and report exceedances of permit limits to Ecology. In the proposed permit, sampling times have changed to catch rain events and sampling frequency was increased from 4 to 5 times/year (on the west side). Sampling in the proposed permit would also include sampling for total Cu and Zn, which is not included in the current permit.

With the wide-ranging variation in storm events, facility sites, and pollutants encountered, we believe sampling 5 times a year is not adequate to provide data that accurately portray the pollutant concentrations generated from these sites. In addition, sampling in total Cu and total Zn instead of sampling for the dissolved fraction of these metals, does not give accurate information about the bioavailable metals fraction that can result in direct and short term toxicity to salmonid sensory systems, sensitive salmonid prey (aquatic insects), and primary producers. We are unsure why Ecology requires sampling for total instead dissolved metals as recent policy from USEPA's Office of Water mandates the use of dissolved metal to set and measure compliance with water quality standards (Sanalone et al 1997).

To develop the sampling requirements and pollutant benchmarks and thresholds, many assumptions were made about critical variables that affect the toxicity of stormwater discharges (Envirovision 2006), e.g., dilution levels, water hardness, dissolved versus total fractions of metals, etc. Requiring permittees to monitor these parameters would provide much more accurate information on which to base permit target levels, e.g., stormwater discharge (in cubic feet per second (cfs)), streamflow cfs, water hardness, total suspended solids, background metals levels, etc. So, while the change in sampling times, frequencies, and inclusion of Cu and Zn sampling are an improvement over the existing permit, we believe these changes in monitoring actions are not sufficient to avoid adverse effects to listed salmon.

### Corrective Actions

According to the proposed permit, if benchmarks or thresholds are exceeded the permittee performs corrective actions. If a threshold is exceeded, the permittee notifies Ecology and Ecology visits the site. In the pollutant section above, we have already discussed that pollutant benchmark and threshold levels, especially for Cu and Zn, are too high to avoid effects to salmon. In addition, once a permittee has collected their 5 samples for the year, they calculate the median of all 5 samples, and if the median is not above the benchmark, they are not required to take any corrective actions. This is in spite of the possibility that the benchmark could have been exceeded once or more in samples that year, with the prospect that the discharge from the facility could be continuing to exceed the benchmark over some extended period of time during the year. In addition, once the benchmark median is exceeded, permittees are only required to identify the need for change and any remedial actions. Actual changes to source and operation BMPs are not required until the permittee has exceeded the benchmark for a second year. To adequately protect salmon, the reporting and corrective actions should be more timely, e.g., immediate action on any one reading that exceeds the benchmark. The requirement for immediate action would match that required for non-compliance with the permit (discharge of pollutants in a significant amount) which also requires the submittal of a detailed report to Ecology in 30 days or less.

The use of means, medians, and outliers in analyzing the monitoring data has meant that the permit relies heavily of the use of the central tendency of the data. While this may work well for getting permittees to do a better job of minimizing their pollutant discharge, it does not work well minimizing pollutant effects on salmon. Finally, the values upon which these decisions are made, and the timing of implementing the actions are not likely to avoid more than minor detrimental effects to listed salmon.

References:

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McIntyre, J.K., D.H. Baldwin, J.P. Meador, N.L. Scholz. (in press). Chemosensory deprivation in juvenile coho salmon exposed to dissolved copper under varying water chemistry conditions. Environmental Science and Technology.

Sansalone, J.J. and S.G. Buchberger. 1997. Partitioning and first flush of metals in urban roadway storm water. Journal of Environmental Engineering. Feb 1997.

Sprague, J. B. 1968. Avoidance reactions of rainbow trout to zinc sulphate solutions. Water Research Pergamon Press. Vol 2, pp. 367-372.