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PART 2/3

Department of Ecology
Water Quality Program
DEC 15 2004

Snohomish County

Public Works
Surface Water Management

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County Executive

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December 13, 2004

Ken Koch
Washington Department of Ecology
Water Quality Program
P.O. Box 47600
Olympia, WA 98504-7600

RE: COMMENTS ON FINAL DRAFT 2004 WATER QUALITY ASSESSMENT

Dear Mr. Koch:

We are pleased to have the opportunity to review the proposed listings of Snohomish County lakes in the Final Draft 2004 Washington State Water Quality Assessment. We appreciate the comprehensive nature of this analysis of the Waters of the State and offer the following comments:

1. Thank you for considering the lake data submitted by Snohomish County and for responding to many of our comments submitted in March 2004. As a result, listings and information for the following 14 lakes were revised: Armstrong, Bryant, Cassidy, Chain, Howard, Kayak, Martha S., Meadow, Nina, Riley, Rowland, Stickney, Storm, and Swartz. We have no additional comments on the listings for these lakes.

2. Please find enclosed a 5-page table (arranged alphabetically by lake name) with detailed comments on the listings for 26 other lakes in unincorporated Snohomish County.

3. For many of these 26 lakes there appear to be errors in the listings. Although the summary of responses to comments on Ecology's website indicates that factual information was corrected or listings changed for these lakes in response to our March 2004 comments, in many cases the actual listings and the interactive map do not show that these changes were ever made. These are all noted in detail in the attached table.

4. In addition, we are particularly concerned about listings for Total Phosphorus for three lakes (also described in the attached table):

   a. Lake Crabapple is listed as Category 5 (#6330) even though phosphorus concentrations do not exceed the suggested nutrient criteria for the Puget lowlands and there is no evidence that the lake is impaired due to nutrients. We believe the data show that this lake should be listed in Category 2.

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b. Lake Roesiger (North Arm) is listed as Category 5 (#6365) even though it is one of the clearest lakes in Snohomish County, has very low total phosphorus levels, is rated as "healthy" in the County's published report, and has lower phosphorus concentrations than Lake Roesiger (South Arm) which is listed in Category 1 for total phosphorus. We strongly recommend that this lake be changed to Category 1.

c. Lake Stevens appears to have fallen out of the listings for total phosphorus. Part of the problem seems to be confusion with a lake of the same name in Whitman County and with Black Lake in WRIA 41. Recent data show that Lake Stevens has some problems with nuisance algal blooms, slightly elevated nutrient levels, and is "at risk" of impairment. However, the lake is not currently impaired due to nutrient enrichment and active restoration activities are in progress. We believe that the data support a Category 2 listing for Lake Stevens.

Thank you for the opportunity to submit these comments on the Final Draft 2004 Water Quality Assessment. If you have any questions about our comments or lake data, please contact me at (425) 388-3464 x4563 or by email at gene.williams@co.snohomish.wa.us.

Sincerely,

Gene N Williams

Gene N. Williams
Snohomish County Public Works Department
Surface Water Management Division
2731 Wetmore Avenue, Suite 300
Everett, WA 98201

Department of Ecology
Water Quality Program
DEC 15 2004
029T
PART 3/3

COMMENTS FROM SNOHOMISH COUNTY SURFACE WATER MANAGEMENT ON FINAL DRAFT 2004 WASHINGTON STATE WATER QUALITY ASSESSMENT LAKES LISTINGS

LAKE	Listing ID	Parameter	Assessment Category Proposed by Ecology	Comments on Factual Problems with the Final Draft Assessment	Discussion and Recommended Listing
BEECHER	22463	TP	2	• The interactive map does not show any listing category.	• We concur with the proposed listing in Category 2 for TP.
BLACKMAN	6313	TP	5	• This listing is OK.	• We concur with listing the lake in Category 5 for TP.
BLACKMAN	40728	TP	1	• In the summary of responses to comments, it states that this listing was rolled into #6313, but the listing still exists; it is not marked as inactive or deleted.	
BOSWORTH	22606	TP	1	• This listing is OK, except TRS is missing; it should be 30N-6E-36.	• We concur with the proposed listing in Category 1 for TP.
BOSWORTH	40729	TP	1	• In the summary of responses to comments, it states that this listing was rolled into #22606, but the listing still exists; it is not marked as inactive or deleted.	
COCHRAN	22613	TP	1	• Under "Remarks" on the individual listing it now states that Snohomish County's 2003 State of the Lakes Report identifies the lake as "at risk" of future impairment and that the lake experiences nuisance algal blooms. This is incorrect. The Lakes Report states that the lake is "healthy" and that the lake does not experience regular nuisance algal blooms. • The lake is not located in the Cascades ecoregion as stated under "Basis".	• We concur with the proposed listing in Category 1 for TP.
CRABAPPLE	6330	TP	5	• Additional data from 1973 published in McConnell, J.B. et. al. (1976) Data on Selected Lakes in Washington, Washington State Department of Ecology Water Supply Bulletin 42, Part 4. • Analyses of this lake published in Snohomish County Surface Water Management (2003) State of the Lakes Report are not cited.	• Summer epilimnetic total phosphorus concentrations are consistently and substantially below 20 µg/l. • Although the County's 2003 State of the Lakes Report identifies the lake as "at risk" of future impairment, there are no data supporting a Category 5 or "impaired" listing for TP. • This lake was not on the 303d list in 1998, and there are no new data that could support adding it to the Category 5 list in 2004. • We recommend that the lake be changed to Category 2 for TP.
CRABAPPLE	22615	TP	1	• In the summary of responses to comments, it states that this duplicate listing was rolled into #6330. However, this listing still exists; it is not marked as inactive or deleted.	
CRYSTAL	NONE	TP	NONE	• This lake, located in WRIA 8 in 27N-05E-36, is omitted from Ecology's WQ Assessment. • Monitoring data for the lake were collected in 1974 and published in Bortleson, G.C., et.al. 1976; these data were also cited in Sumioka and Dion (1985).	• The limited data available show a total phosphorus concentration of 19 ug/l, indicating moderate nutrient levels. • We recommend that this lake be included in the Assessment and listed in Category 2 for TP.
DEVILS (Lost)	22560	TP	1	• In the summary of responses to comments, it states that this listing was changed to Category 2, but it was not changed. The individual listing #22560 still shows Category 1; the interactive map shows Category 1; and the listings by WRIA show Category 1. • First Sumioka and Dion reference is apparently for another Devil's Lake in Skagit County (WRIA 3).	• The County's 2003 State of the Lakes Report identifies the lake as "at risk" of future impairment because of total phosphorus concentrations that occasionally exceed 20 µg/l and nuisance algal blooms. • We recommend that the lake be changed to Category 2 for TP as stated in the responses to comments.

LAKE	Listing ID	Parameter	Assessment Category Proposed by Ecology	Comments on Factual Problems with the Final Draft Assessment	Discussion and Recommended Listing
ECHO	22675	TP	1	• In the summary of responses to comments, it states that this listing was changed to Category 2, but it was not changed. The individual listing #22675 still shows Category 1; the interactive map shows Category 1; and the listings by WRIA show Category 1. • The second Sumioka and Dion data reference is for another lake, not this lake. • Analyses for this lake published in Snohomish County Surface Water Management (2003) State of the Lakes Report are not cited.	• Summer epilimnetic total phosphorus concentrations are below 20 ug/l, but this lake does experience nuisance algal blooms. • The County's 2003 State of the Lakes Report identifies the lake as "at risk" of future impairment because of nutrient levels. • Therefore, we recommend that the lake be changed to Category 2 for TP as stated in the responses to comments.
GISSBERG TWIN	40923	TP	1	• The listing misspells this lake; it should be "Gissberg Twin Lakes". • This listing for TP is not shown on the interactive map.	• We concur with the proposed listing in Category 1.
GOODWIN	6338	TP	5	• In the summary of responses to comments, it states that this listing was rolled into listing #22625 and changed to Category 1 for TP. However, this duplicate listing still exists, and under "remarks" it states that #22625 was rolled into #6338.	• The County's 2003 State of the Lakes Report identifies the lake as "healthy" because of low total phosphorus and absence of nuisance algal blooms. • We recommend that the listing be changed to Category 1 for TP as stated in the responses to comments and shown in the listing by WRIA.
GOODWIN	22625	TP	1	• Analyses for this lake published in Snohomish County Surface Water Management (2003) State of the Lakes Report are not cited.	
GOODWIN	6320	Fecal Coliform	5	• In the summary of responses to comments, it states that this listing was changed to Category 2 because the data are over 20 years old and there is nothing to suggest on-going problems; however, the listing was not changed. The individual listing #6320 still shows Category 5; the interactive map shows Category 5; and the listings by WRIA show Category 5.	• Several other nearby lakes were changed to Category 2 for fecals for similar reasons—the data are more than 20 years old and there are no recent data or anecdotal evidence of current problems. • We recommend that the lake be changed to Category 2 for fecal coliform.
KETCHUM	6343	TP	5	• This listing is OK.	• We concur with the proposed listing in Category 5 for TP.
KETCHUM	40934	TP	2	• In the summary of responses to comments, it states that this listing was rolled into #6343, but the listing still exists; it is not marked as inactive or deleted.	
KI	6344	TP	1	• This listing is OK.	• We concur with the proposed listing in Category 1 for TP.
KI	22453	TP	1	• This duplicate listing still exists; it is not marked as inactive or deleted.	
KI	6317	Fecal Coliform	5	• In the summary of responses to comments, it states that this listing was changed to Category 2 because the data are over 20 years old and there is nothing to suggest on-going problems; however, the listing was not changed. The individual listing #6317 still shows Category 5; the interactive map shows Category 5; and the listings by WRIA show Category 5.	• Several other nearby lakes were changed to Category 2 for fecals for similar reasons—the data are more than 20 years old and there are no recent data or anecdotal evidence of current problems. • We recommend that the lake be changed to Category 2 for fecal coliform.
LOMA	6350	TP	5	• This listing is OK. • However, the interactive map does not show any listings for Lake Loma; in fact, the map shows the stream leaving Lake Loma as Category 5 for TP with a Listing ID of #6350.	• We concur with the proposed listing in Category 5 for TP.
LOMA	22466	TP	2	• In the summary of responses to comments, it states that this listing was rolled into listing #6350 and changed to Category 5 for TP. However, this duplicate listing still exists; it is not marked as inactive or deleted.	
MARTHA N.	6354	TP	2	• This listing is OK.	• We concur with the proposed listing in Category 2 for TP.
MARTHA N.	6170	TP	1	• In the summary of responses to comments, it states that this listing is a duplicate of #6354, but the listing still exists; it is not marked as inactive or deleted.	

LAKE	Listing ID	Parameter	Assessment Category Proposed by Ecology	Comments on Factual Problems with the Final Draft Assessment	Discussion and Recommended Listing
PANTHER	22651	TP	1	• This listing is OK, except that the second unpublished data reference is for a Kitsap County lake of the same name.	• We concur with the proposed listing in Category 1 for TP.
ROESIGER N.	6365	TP	5	• Analyses for this lake published in Snohomish County Surface Water Management (2003) State of the Lakes Report are not cited. • The interactive map shows all of Lake Roesiger (both North Arm and South Arm) as Category 5 for TP.	• This is one of the clearest lakes in Snohomish County. • Although the lake occasionally experiences nuisance algal blooms, the summer epilimnetic total phosphorus concentrations are consistently below 10 µg/l. • The County's 2003 State of the Lakes Report identifies the lake as "healthy". • Data collected since the 1989 Phase I study do not support a Category 5 listing for TP. • It is not logical to list Roesiger (North Arm) in Category 5, while listing Roesiger (South Arm) in Category 1 for TP. Roesiger North has even lower TP levels than Roesiger South. • We recommend that the lake be changed to Category 1 for TP.
ROESIGER N.	22468	TP	1	• In the summary of responses to comments, it states that this listing is a duplicate of #6365 and that it was rolled into #6365; but the listing still exists; it is not marked as inactive or deleted. • The interactive map also shows all of Lake Roesiger (both North Arm and South Arm) as Category 1 for TP.	
ROESIGER S.	40888	TP	1	• Analyses for this lake published in Snohomish County Surface Water Management (2003) State of the Lakes Report are not cited. • There is no reference to data from the Phase I study, KCM (1989).	• This portion of Lake Roesiger is also one of the clearest lakes in Snohomish County. • This portion of the lake also experiences occasional nuisance algal blooms, but the summer epilimnetic total phosphorus concentrations are consistently below 10 µg/l. • The County's 2003 State of the Lakes Report identifies the lake as "healthy". • We concur with the proposed listing in Category 1 for TP.
ROWLAND (DUBOIS)	6162	TP	2	• This listing in Category 2 for TP is OK; however, the interactive map shows no listing for this lake.	• We concur with the proposed listing in Category 2 for TP.
SERENE	22659	TP	1	• In the summary of responses to comments, it states that the listing was changed to Category 2; however, the listing was not revised. The individual listing #22659 still shows Category 1; the interactive map shows Category 1; and the listings by WRIA show Category 1. • Analyses for this lake published in Snohomish County Surface Water Management (2003) State of the Lakes Report are not cited.	• Summer epilimnetic total phosphorus concentrations are consistently below 20 µg/l, with a few higher spikes. • The lake supports dense concentrations of aquatic plants. • As a shallow, mixed lake, there is a risk of the lake switching from a plant-dominated to an algae-dominated state if nutrient inputs increase. • The County's 2003 State of the Lakes Report identifies the lake as "at risk" of impairment. • We recommend that the lake be changed to Category 2 for TP.
SHOECRAFT	6369	TP	1	• This listing is OK.	• We concur with the proposed listing in Category 1 for TP.
SHOECRAFT	22660	TP	1	• In the summary of responses to comments, it states that this listing is a duplicate of #6369 and that it was rolled into #6369; but the listing still exists; it is not marked as inactive or deleted.	
SHOECRAFT	6326	Fecal Coliform	5	• In the summary of responses to comments, it states that this listing was changed to Category 2 because the data are over 20 years old and there is nothing to suggest on-going problems; however, the listing was not changed. The individual listing #6326 still shows Category 5; the interactive map shows Category 5; and the listings by WRIA show Category 5.	• Several other nearby lakes were changed to Category 2 for fecals for similar reasons—the data are more than 20 years old and there are no recent data or anecdotal evidence of current problems. • We recommend that the lake be changed to Category 2 for fecal coliform.

LAKE	Listing ID	Parameter	Assessment Category Proposed by Ecology	Comments on Factual Problems with the Final Draft Assessment	Discussion and Recommended Listing
SPRING	NONE	TP	NONE	• This lake, located in WRIA 5 in 30N-06E-2, is omitted from Ecology's WQ Assessment. • Recent Snohomish County unpublished data were submitted for this lake but not referenced. • Analyses for this lake published in Snohomish County Surface Water Management (2003) State of the Lakes Report are not cited.	• Limited data show that summer epilimnetic total phosphorus concentrations in the lake are below 20 ug/l. • We recommend that the lake be listed in Category 1 for TP.
STEVENS	43024 22829?? REVIEW 22892	MY TYPO TP	??	• It is unclear which lake this listing is referring to; the WRIA and TRS refer to a lake in Whitman County, but the second Sumioka and Dion citation refers to a Puget Lowlands lake. • There does not appear to be any listing for TP for the Lake Stevens located in Snohomish County in WRIA 7 and 29N-06E-18 (or -08). • The interactive map for the Snohomish County Lake Stevens has no TP category information. • In the summary of responses to comments, it lists a comment from Gene Williams of Snohomish County SWM about Black Lake with a listing ID #22892. We did not submit a comment about Black Lake in WRIA 41. The listing ID appears to be transposed from #22829. • In the summary of responses for Black Lake (#22892), it states that we recommended Category 2 instead of Category 5 for TP, and that the category was changed. That was our recommendation for Lake Stevens. It appears that the category was changed for Black Lake but not for Lake Stevens. • Data from a 1982 Phase I study published in Reid, Middleton, & Associates (1983) Lake Stevens Restoration Study are not cited. • Data collected in 1986 and published in KCM (1987) Lake Stevens Restoration Phase IIA are not cited. • Data published by Drainage Improvement District #8 (contained in Gray & Osborne. Lake Stevens Water Quality Monitoring. yearly from 1998 through 2003) and submitted to Ecology are not referenced. • Analyses for this lake published in Snohomish County Surface Water Management (2003) State of the Lakes Report are not cited.	• We recommend that the Lake Stevens in Snohomish County be listed in Category 2 for TP for the following reasons: • Summer epilimnetic total phosphorus concentrations are consistently below 20 µg/l, however, a lake of this depth with a small watershed should have even lower nutrient levels. • The lake experiences occasional nuisance algal blooms. • The aeration system in the lake limits internal phosphorus recycling, but does not fully mitigate the on-going impacts of nutrient loading from the watershed. • The County's 2003 State of the Lakes Report identifies the lake as "at risk" of future impairment. • Recent data, together with the success of continuing restoration efforts, suggest that the lake is not currently impaired by total phosphorus but that nutrient levels are of concern. Therefore, we believe that the lake should no longer be listed in Category 5 for TP as it was in 1996 and 1998, but should be changed to Category 2.
STEVENS	4666	Invasive Species	4C	• In the summary of responses to comments, it states that the listing was changed to Category 2 because there has been no recent evidence of Eurasian watermilfoil in the lake; however, the listing was not changed. The individual listing #4666 still shows Category 4C; the interactive map shows Category 4C; and the listings by WRIA show Category 4C. • There has not been any chemical treatment of milfoil as stated in the summary of responses to comments. • Information on Eurasian watermilfoil published in Snohomish County Surface Water Management (2003) State of the Lakes Report is not cited.	• Eurasian watermilfoil has not been identified in the lake since the early 1990s. Several boat surveys and one diving survey in recent years have failed to find this invasive plant. • Therefore, we recommend that the lake be changed to Category 2 for invasive species.
SUNDAY	8637	TP	5	• This listing is OK.	• We concur with the proposed listing in Category 5 for TP.
SUNDAY	40865	Total Nitrogen	5	• There are no recent sampling data for nitrogen. • Under "Remarks" for TP listing #8637 it states that "only phosphorus is listed as the favored nutrient" because many algal species can fix nitrogen directly from the atmosphere. This suggests that the Category 5 listing for total nitrogen could be removed, but this was not done.	• Nitrogen levels in the lake are likely still high. However, because of the focus on "managing total phosphorus as the preferred management option," we recommend that the lake be changed to Category 2 for total nitrogen.

LAKE	Listing ID	Parameter	Assessment Category Proposed by Ecology	Comments on Factual Problems with the Final Draft Assessment	Discussion and Recommended Listing
THOMAS	**40778**	**Invasive Species**	**4C**	• The Thomas Lake cited in the Ecology survey (Parson and O'Neal, 2000) is actually located in Stevens County, as indicated by the WRIA 59 note in listing #40778. • The Thomas Lake in Snohomish County located in WRIA 8 and 28N-05E-33 has no record of Eurasian watermilfoil. • The interactive map incorrectly shows a Category 4C listing for the Snohomish County Thomas Lake.	• This listing should be corrected to refer to the Stevens County lake.
WAGNER	**22923**	**TP**	**2**	• Recent Snohomish County data submitted for this lake are not referenced. • Analyses for this lake published in Snohomish County Surface Water Management (2003) State of the Lakes Report are not cited.	• Summer epilimnetic total phosphorus concentrations are usually below 20 µg/l, with occasional spikes above that level; concentrations in the hypolimnion are higher. • Moderate nutrient levels appear to be natural for a mesotrophic lake. • The County's 2003 State of the Lakes Report identifies the lake as "healthy". • We recommend that the lake be changed to Category 1 for TP.
WEALLUP	**22669**	**TP**	**2**	• In the summary of responses to comments, it states that the listing was changed to Category 1 because the only available data are old; however, the listing was not changed. The individual listing #22669 still shows Category 2; the interactive map shows Category 2; and the listings by WRIA show Category 2.	• Moderate to high nutrient levels may be natural for this shallow lake. • We recommend that the lake be listed in Category 1 for TP because of the lack of recent data.