

From: Paul Vandenberg
To: Elaine Stewart
Date: 1/16/02 12:56PM
Subject: Re: Sample data needed for DEQ

Elaine

We routinely measure each of the parameters Greg has requested, and I can prepare a table of lake data for those parameters (2000-2001) within the next couple weeks.

>>> Elaine Stewart 01/16/02 10:39AM >>>
Hi Paul,

Thanks for helping me out here. These are the data that Greg Geist from DEQ has requested:

pH
DO
Total nitrogen, plus nitrate and nitrite
Total phosphorous, plus orthophosphorous

I'm doing this from memory since I'm at home. If the nitrogen doesn't make sense, let me know and I'll double-check my notes when I return to the office tomorrow.

Ideally, I would like to have samples from 2 years to send to Greg. Perhaps 2000 and 2001? I know that the lakes were dry or otherwise couldn't be sample for some of each year, but I think that is good for Greg to know and representative of future management.

Thanks a lot, Paul. It would be great to send this to Greg in the next month or so, let me know if that is not a good timeline.

-Elaine

From: Elaine Stewart
To: Greg Geist
Date: 3/21/02 3:01PM
Subject: water management plan

Here are some excerpts from the biological assessment we did for the new water control structure. They explain the rationale behind the water level management at the lakes.

Basically, I will be trapping high water in the winter and holding it through spring months, starting drawdown in early June. This will mimic the historic flooding pattern to the extent possible and favor native plant communities over reed canarygrass. The structure will have boards in it, and I'll place the boards sometime between November and February, depending on when we get some good rain and high water. Then I'll start removing the boards one layer at a time from early June into August. From August until the next high water event, the structure should be pretty open. The lakes will dry out each summer under this management regime.

I should add the caveat that I'll be managing the system adaptively, and may change the water management regime as I learn more about how the system responds.

Hope this is what you need.

-Elaine

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*Verbally confirmed
w/ Geist that this
is adequate -
cms
4/02*

**Excerpts from Biological Assessment
Water Control Structure
Smith and Bybee Lakes Wildlife Area**

The historic hydrologic regime was characterized by winter flooding that receded in late winter and early spring. Late spring rains and snowmelt caused water to rise again in the spring freshet. Water levels would drop dramatically in summer with the dry weather. Modifications to this hydrologic regime over the past 70 years, such as construction of dams and dikes and filling with dredge spoils, have dramatically changed the frequency and duration of flooding in the region's wetlands. The first significant alteration was the construction of major dams on the Columbia River. The use of these dams to produce hydroelectric power, store water and reduce flooding drastically altered the natural hydrological cycles in the lower Columbia River ecoregion, including Smith and Bybee lakes. Although the lakes drain into the Willamette system, the confluence of Columbia Slough and Willamette River is adjacent to the Willamette's confluence with the Columbia River. Thus the lakes are influenced by the Willamette and Columbia rivers' hydrology.

The most recent significant alteration of the Smith and Bybee lakes system occurred with the construction of a dam in 1982 that separated the lakes from the North Slough arm of the Columbia Slough, and thus the Willamette River. The dam has been modified or replaced twice, but has always been used to retain water in the lakes. Since 1982, the lakes have essentially functioned as reservoirs, held at a static water level. These hydrologic alterations have significantly limited waterfowl nesting success, while optimizing conditions for the spread of exotic plants such as reed canarygrass. The constant inundation also destroyed more than 120 ha of bottomland forest.

This restoration project is designed to allow free and open seasonal and tidal connectivity throughout much of the year, while providing a mechanism to improve wetland habitat by controlling water levels from winter into summer. This will be accomplished by placing stop logs into the water control structure during those periods when floodwaters recede prematurely. This strategy has proven successful in controlling reed canarygrass, encouraging native emergent vegetation (smartweed, wapato, etc) and reducing waterfowl nest flooding.

The primary purpose for water management is to allow Metro to mimic the historic water regime, particularly the spring freshet, by prolonging the recession of floodwaters out of the wetlands. The long drawdown period simulates historic conditions by slowly exposing the shallow areas as mudflats late in the spring, during the warming period that favors native plant communities. This is crucial to restoring native vegetation and in controlling reed canarygrass because the latter is a cool-season plant that starts growing earlier in the year than the desired native emergent plants. An unmanaged wetland would drain in February, and the subsequent reed canarygrass invasion would effectively outcompete native wetland species, resulting in a monoculture.

E. Stewart, March 21, 2002



Oregon

John A. Kitzhaber, M.D., Governor

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See my email, Jane

DEQ

RE: Lake Water Quality Monitoring

As you are probably aware, DEQ is committed to developing Total Maximum Daily Load calculations (TMDLs) for water quality-limited waterbodies (303d list) within the Lower Willamette sub-basin by 2003. In addition to our focus on the mainstem Willamette River, several tributary waterbodies in the Portland Metropolitan area will have to be addressed, including those managed by METRO (Blue Lake and Smith/Bybee Lakes). The following table shows the specific water quality concerns associated with each lake:

LAKE	303d Listed Parameters
Blue	pH, Aquatic Weeds or Algae
Smith	Habitat Modification, pH, Flow Modification, Aquatic Weeds or Algae, Biological Criteria
Bybee	Habitat Modification, pH, Flow Modification, Aquatic Weeds or Algae, Biological Criteria

In reviewing available water quality data, DEQ staff found that very little data exists for the METRO-managed lakes beyond what was used to establish the original 303d listings. In the case of Blue Lake, 303d listings are largely based upon monitoring conducted in 1979. DEQ believes that a great deal could be gained by establishing routine water quality monitoring programs and/or lake management plans for METRO lakes.

Specifically, METRO has been very active in the restoration of Smith and Bybee lakes and it is likely that water quality impairments will be addressed through currently planned lake management activities. However, in the absence of a lake management plan or additional water quality data, DEQ is obligated to complete TMDLs for the lakes using existing data. We do not think that this would be a wise use of our resources or a desirable outcome for METRO.

DEQ would like to work with METRO to develop a cost-effective water quality monitoring plan for METRO lakes. DEQ staff is both knowledgeable and eager to work with your staff in developing a plan that fits everyone's needs.

Please feel free to contact me at (503) 229-6991.

Sincerely,

Greg Geist *229-6991*
Oregon Department of Environmental Quality
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