

Model-Techno-Policy Workgroup

Workgroup Update

Lower Boise Watershed Council - TAC

April 24, 2014



IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY



TMDL MODELING

AQUATOX Model

- Quantify chlorophyll a and phosphorus relationships
- Allocation tool to meet the chlorophyll-a target of 150 mg/m^2

USGS Mass Balance Model and Duration Curves

- Quantify current TP loads
- Allocation tools to meet the May-September 0.07 mg/L TP target at the mouth

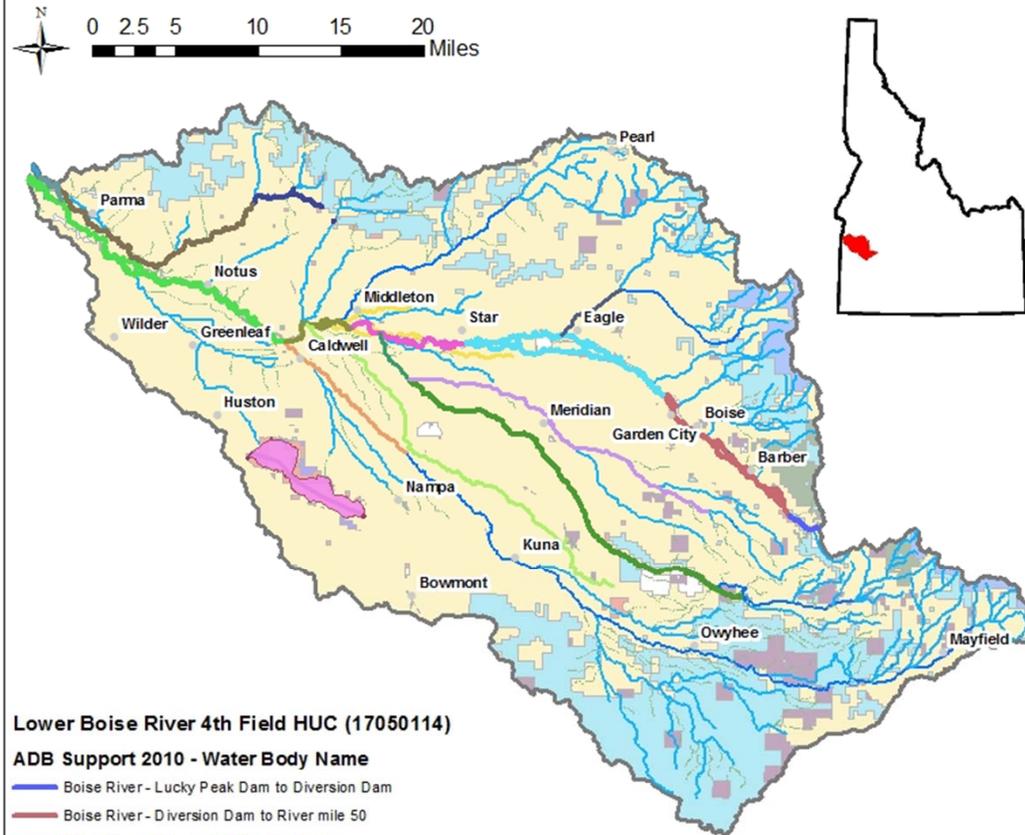




WORKGROUP OBJECTIVES

- ❖ Apply AQUATOX and other lines of evidence toward:
 - ❖ Developing TP targets and allocations to meet the periphyton target
 - ❖ In the two impaired assessment units of the lower Boise River
 - ❖ Middleton to Indian Creek
 - ❖ Indian Creek to the Mouth

Lower Boise River Subbasin (HUC 17050114)



Lower Boise River 4th Field HUC (17050114)

ADB Support 2010 - Water Body Name

- Boise River - Lucky Peak Dam to Diversion Dam
- Boise River - Diversion Dam to River mile 50
- Boise River - River Mile 50 to Star Bridge
- Boise River - Star to Middleton
- Boise River - Middleton to Indian Creek
- Boise River - Indian Creek to mouth
- Dry Creek - 4th order (Spring Valley Creek to mouth)
- Fifteenmile Creek - 4th order (Fivemile Creek to mouth)
- Fivemile Creek - 3rd order
- Indian Creek - 4th order below 11th Ave. in Nampa
- Lake Lowell
- Mason Creek - entire watershed
- Mill Slough and Phyllis Slough
- Sand Hollow Creek (C-Line Canal to I-84)
- Sand Hollow Creek - I-84 to Sharp Road
- Sand Hollow Creek - Sharp Road to Snake River
- Tenmile Creek - 3rd order below Blacks Creek Reservoir

Landstatus OWNER TYPE

- BLM
- BOR
- NWR
- OTHER
- PRIVATE
- STATE
- STATEFG
- USFS



WORKGROUP DOCUMENTATION

- ❖ Meeting summaries and decision points will be posted after each meeting on the DEQ LBR WAG webpage
- ❖ Model revisions and documentation will be posted, as completed, on the FTP site via the DEQ LBR WAG webpage
- ❖ The Model Report will remain draft until concurrent completion of the TMDL in order to ensure all analyses in the report are consistent with the model findings and application in to the TMDL
- ❖ Subsequent report drafts will be posted on the DEQ LBR WAG webpage

<http://www.deq.idaho.gov/regional-offices-issues/boise/basin-watershed-advisory-groups/lower-boise-river-wag.aspx>

The screenshot shows the website for the Lower Boise River Watershed Advisory Group (WAG). The page header includes the Idaho Department of Environmental Quality logo and navigation links. The main content area is titled "Lower Boise River Watershed Advisory Group (WAG)" and contains several sections: "About DEQ" with a breadcrumb trail, "Staff Contacts" listing Watershed Manager Lance Holloway and Senior Water Quality Analyst Troy Smith, "Upcoming Meetings" for the Lower Boise Watershed Council TAC Meeting and Council Meeting, "Review Documents" listing draft phosphorus addendums and TMDL documents, and "Previous Meetings" listing modeling work session meetings. A sidebar on the left contains a navigation menu with categories like "Regional Offices & Issues", "Air Quality", "Water Quality", "Waste Mgmt. & Remediation", "INL Oversight", "Permitting", "Pollution Prevention", "Assistance & Resources", and "Laws, Rules, Etc.". The top of the page features a search bar and a "Find it Fast" dropdown menu.



WEIGHT OF EVIDENCE APPROACH

- ❖ Other Environmental Stressors
 - ❖ e.g. flow, temperature, alteration, management
- ❖ Historical Conditions
- ❖ Critical Conditions
- ❖ Other



DURATION

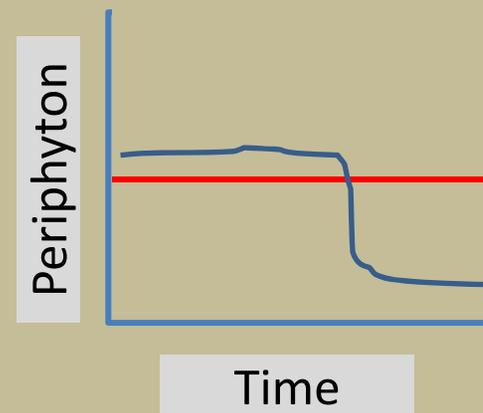
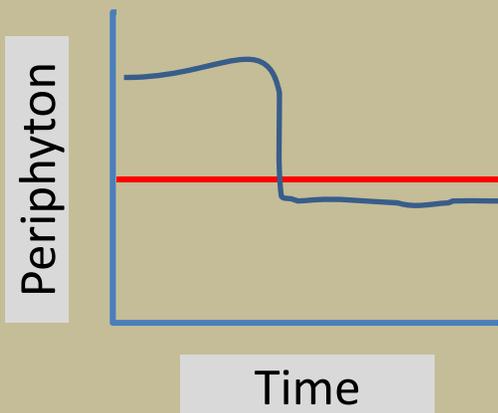
❖ Potential Seasons

- ❖ Jan-Apr, May-Sept, Oct-Dec
- ❖ Dec-Feb, Mar-May, June-Aug, Sept-Nov
- ❖ Dec-Feb, Mar-Apr, May-Sept, Oct-Nov



MAGNITUDE

- ❖ Daily periphyton biomass $\leq 150 \text{ mg/m}^2$ for $\geq 50\%$ of days each season
- ❖ Mean daily periphyton biomass $\leq 150 \text{ mg/m}^2$ for each season





FREQUENCY

- ❖ Not to exceed periphyton target more than 1 in ? (3) years
- ❖ Monte Carlo application and/or running model for ? years of previous flow conditions



LOCATION

- ❖ Target applied on an assessment unit basis
- ❖ Utilize a weighting methodology to convert segments to AUs
 - ❖ AU 005_06b (Middleton to Indian Creek)
 - ❖ Begins within segment 9 and extends into segment 10
 - ❖ AU 005_06 (Indian Creek to Mouth)
 - ❖ Begins within segment 10 and extends through segment 13



POTENTIAL SCENARIOS

- May-Sept TP = 0.07 mg/L to meet SR-HC TMDL
- Others?
 - TSS <37%
 - Lines of evidence
 - Historical Conditions
 - Critical Conditions
- Timelines



iTHANK YOU!

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