ADVOCATES for the West
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March 9, 2015

Via certified mail; return receipt requested

Gina McCarthy
Administrator
United States Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dennis McLerran
Regional Administrator
U.S. EPA Region 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101

Re: Petition to revise the 2004 Snake River-Hells Canyon TMDL under the Clean Water Act.

Dear Administrator McCarthy and Regional Administrator McLerran:

I am writing on behalf of my client, the Idaho Conservation League, to submit this petition to the U.S. Environmental Protection Agency (EPA) under the Clean Water Act, 33 U.S.C. § 1251 *et seq.*, and its implementing regulations, and the Administrative Procedure Act, 5 U.S.C. § 551 *et seq.* By this petition, the Idaho Conservation League requests that EPA promptly review, disapprove, and revise the Snake River-Hells Canyon Total Maximum Daily Load (Revised June 2004)[1] ("Hells Canyon TMDL") under Section 303(d) of the Clean Water Act.

As set forth below, the Hells Canyon TMDL's 0.07 mg/L seasonal target for total phosphorus fails to meet the requirements of the Clean Water Act. New data shows that this target was based on flawed assumptions and that the Hells Canyon reach of the Snake River is and will remain impaired due to nutrient pollution so long as the target remains in place. EPA has recently acknowledged that the TMDL's seasonal phosphorus target is inadequate. Furthermore, the Hells Canyon TMDL is long overdue for review and revision, and it meets both the State of Idaho's and EPA's criteria for revising TMDLs. Yet the State of Idaho—whose regulations require each TMDL to be reviewed every five years—has never reviewed or revised the TMDL. It is therefore necessary for EPA to take action now to ensure nutrient standards will be met in the Hells Canyon reach of the Snake River, as required by the Clean Water Act.

[1] The Hells Canyon TMDL is available at https://www.deq.idaho.gov/water-quality/surface-water/tmdls/table-of-sbas-tmdls/snake-river-hells-canyon-subbasin.aspx.

The Idaho Conservation League

Since 1973, the Idaho Conservation League has been Idaho's voice for clean water, clean air, and wilderness—values that are the foundation for Idaho's extraordinary quality of life. The Idaho Conservation League works to protect these values through public education, outreach, advocacy, and policy development. The Idaho Conservation League has a long history of working to protect water quality in Idaho, particularly through work to ensure the Clean Water Act is fully implemented. For example, the Idaho Conservation League regularly reviews and comments on Clean Water Act permits, TMDLs, and water quality standards in Idaho.

The Idaho Conservation League is Idaho's largest state-based conservation organization and represents over 20,000 supporters, many of whom have a deep personal interest in protecting water quality in Idaho, including in the Snake River and Hells Canyon. Idaho Conservation League board, staff, and members regularly use and derive benefits from the Hells Canyon reach of the Snake River, as well as from other Idaho rivers flowing into the Snake River and impacted by the Hells Canyon TMDL, including the Payette River, the Boise River, and other reaches of the Snake River. The interests of Idaho Conservation League board, staff, and members have been, are being, and will continue to be harmed as long as the Hells Canyon TMDL remains in place and the reach fails meet nutrient water quality standards.

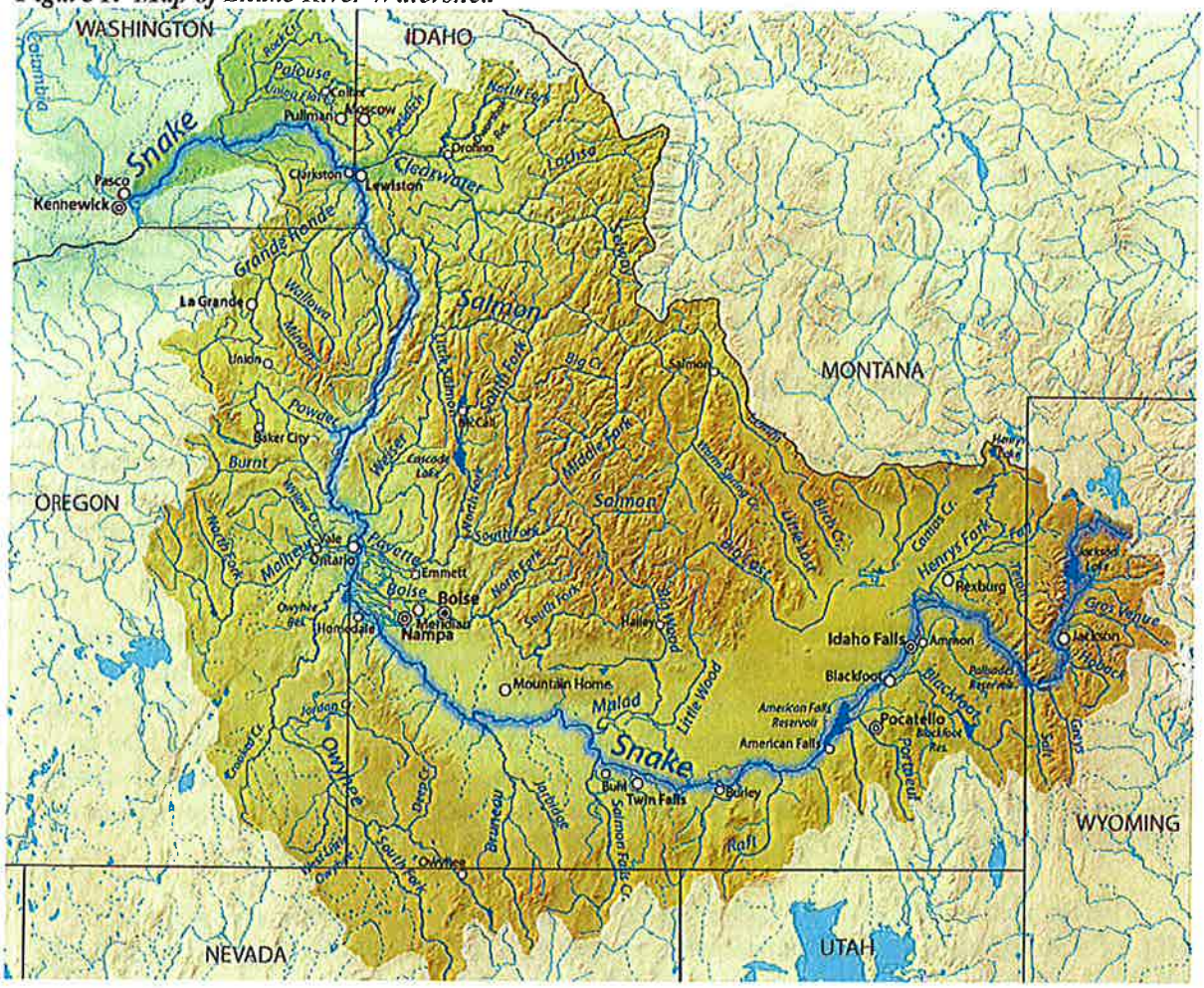
The Snake River & Nutrient Pollution Problems in Hells Canyon

The Snake River is largest tributary to the Columbia River and the tenth longest river system in the United States, extending over one thousand miles from its headwaters in Yellowstone National Park in Wyoming across Idaho to its confluence with the Columbia River in Washington. Over its length, the river falls nearly 7,000 feet in elevation as it passes through rich farmland and some of the deepest canyons in North America.

As shown in Figure 1 below, the Snake River watershed is located mostly in Idaho but also includes parts of Wyoming, Utah, Nevada, Oregon, and Washington. The Snake River flows for nearly 760 miles in Idaho across the Snake River Plain in southern Idaho and through Hells Canyon along the Idaho-Oregon border. About 87 percent of all land in the State of Idaho drains into the Snake River.

The Hells Canyon reach of the Snake River follows the Idaho-Oregon border, stretching from Adrian, Oregon, at river mile 409 downstream to river mile 188, just above the inflow of the Salmon River. This reach includes the three Hells Canyon Complex reservoirs (Brownlee, Oxbow, and Hells Canyon reservoirs). It also includes over 70 miles of the Snake River upstream of the reservoir complex, and nearly 60 miles of the free-flowing Snake River downstream of the reservoir complex. The downstream segment is designated under the Wild and Scenic Rivers Act and flows through the Hells Canyon Wilderness and the Hells Canyon National Recreation Area.

Figure 1. Map of Snake River Watershed[2]



Due to excessive nuisance algal growth, the Hells Canyon reach of the Snake River is listed by the states of Idaho and Oregon as an "impaired" water body under Section 303(d) of the CWA. The reach is impaired from river mile 409 through 272.5. Impaired segments include the Upstream Snake River segment (river miles 409 to 335), the Brownlee Reservoir segment (river miles 335 to 285), and the Oxbow Reservoir segment (river miles 385 to 272.5) as shown in Exhibit A.[3] Nearly all of the major tributary inflows to the Hells Canyon reach enter the Upstream Snake River segment, and the vast majority of agricultural and urban/suburban land use occurs within this same segment.[4]

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[2] http://en.wikipedia.org/wiki/Snake_River#mediaviewer/File:SnakeRiverNicerMap.jpg
[3] *Hells Canyon TMDL*, p. h, Fig. B. (reproduced as Exhibit A).
[4] *Id.* at g.

Excessive algal growth is caused by nutrient pollution. Nutrient pollution is one of America's most widespread environmental problems and is caused by excess nitrogen and phosphorus. Although nutrients naturally occur in the environment, high levels of nutrients in the Snake River Basin can be attributed to anthropogenic sources such as urban and rural runoff, agricultural runoff, in-stream and near-stream erosion, and sewage and septic waste.

Excessive algal growth can cause a variety of problems. Algal blooms block sunlight, resulting in the destruction of submerged aquatic vegetation, which is a critically important food source for many organisms. Dissolved oxygen is important for fish and other aquatic life, but algal blooms eventually die off and consume dissolved oxygen. Algal blooms can cause taste and odor problems in drinking water. Hazardous algal blooms can cause respiratory distress and neurological problems in swimmers. Algae can also be unattractive to recreators.

The Clean Water Act and Total Maximum Daily Loads

In 1972, Congress passed the Clean Water Act "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters" through the reduction and eventual elimination of the discharge of pollutants. 33 U.S.C. § 1251(a). To meet these goals, Section 303(c) of the Clean Water Act requires the establishment of water quality standards.

Water quality standards are promulgated by the states and establish the desired condition of each waterway within the state's regulatory jurisdiction. 33 U.S.C. § 1313(a). Water quality standards under the CWA must include three elements: (1) one or more designated "uses" of that waterway; (2) water quality "criteria" specifying the amount of various pollutants that may be present in those waters and still protect the designated uses, expressed in numerical concentration limits and narrative form; and (3) an antidegradation policy with implementation methods to protect all existing uses. *Id.* at 1313(c)(2) and (d)(4)(B); 40 C.F.R. 131.10(B).

Under section 303(d) of the Clean Water Act, States are responsible for developing TMDLs for waters not expected to meet water quality standards with technology-based controls. 33 U.S.C § 1313(d)(1)(A).[5] States develop TMDLs to meet water quality standards, allowing for seasonal variation and a margin of safety. *Id.* at 1313(d)(1)(C). A key component of the TMDL is the loading capacity, which is the quantity of a pollutant a waterbody can receive without violating water quality standards. The basis of the loading capacity is a target, which is a measurable quality of water condition. *IDEQ TMDL Guidance*, p. 22.[6] Once developed, a state must submit the TMDL to EPA for review and approval. 33 U.S.C. § 1313(d)(2). EPA must then approve or disapprove the TMDL no later than thirty days after the date of submission. *Id.* If EPA disapproves the TMDL, EPA will prepare a TMDL. *Id.*

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[5] *See also*, United States Environmental Protection Agency, "Guidance for Water Quality-Based Decisions: The TMDL Process", p. 1 (Apr. 1991) (hereinafter "EPA TMDL Guidance") (available at http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/decisions_index.cfm).

[6] Idaho Department of Environmental Quality, "Guidance for Development of Total Maximum Daily Loads" (Jun. 1999) (hereinafter "IDEQ TMDL Guidance") (available at https://www.deq.idaho.gov/media/488792-tmdl_develop_guidance.pdf).

While the Clean Water Act does not explicitly address TMDL revision, both EPA and the State of Idaho recognize that TMDLs must be revised when new information shows that the TMDL will not achieve compliance with water quality standards. EPA's TMDL guidance states: "A TMDL should be developed and appropriate control actions taken on all pollution sources and follow-up monitoring should be conducted to assure that water quality standards are met. If follow-up monitoring indicates that water quality standards are not or will not be met, a revised TMDL is required." *EPA TMDL Guidance*, p. 1 (emphasis added).

On March 22, 2012, EPA issued a draft guidance document which outlines considerations for TMDL revision and re-submission when a state determines that circumstances have changed since a TMDL was approved. *Considerations for Revising TMDLs*, p. 1.[7] This draft guidance identifies four situations where a TMDL may need to be revised: (1) when water quality standards have changed; (2) when the basis for deriving loading capacity has changed; (3) when re-allocations are made between load allocations and wasteload allocations; and (4) when a TMDL is not resulting in attainment of water quality standards. *Id.* at 5–6.

The State of Idaho uses "phased approach" to developing TMDL's, which has been endorsed by EPA. Under the phased approach, TMDLs are to be developed promptly based on available data but are to be revised in the future as new data and information come to light. *See, e.g.*, *IDEQ TMDL Guidance* at 11("In a phased TMDL much is yet unknown and the initial loading analysis may be very inexact . . . . Essential to a phased approach is inclusion of a plan to gather the data needed to refine load estimates and their allocation."), 13 ("The TMDL can be revised upon new data which indicate [the need for] revision of the loading capacity (better knowledge of relation between loading and water quality), or deviation from anticipated load reductions.").

As part of the phased approach, IDEQ is required by law to review and re-evaluate each TMDL, supporting subbasin assessment, implementation plan, and all available data periodically at intervals no greater than every five years. Idaho Code § 39-3611(7). This review must include an evaluation of the water quality criteria, instream targets, pollutant allocations, assumptions, and analyses upon which the TMDL and subbasin assessment were based. *Id.* IDEQ must report the results of these five-year reviews annually. *Id.* at 39-3611(8). If after review and re-evaluation a TMDL is inadequate to achieve water quality standards, IDEQ must modify the TMDL. *Id.*

The Hells Canyon TMDL

In 2003, the Idaho Department of Environmental Quality ("IDEQ") and Oregon Department of Environmental Quality ("ODEQ") jointly developed TMDLs for nutrients, dissolved oxygen, sediment, and temperature for the Hells Canyon reach of the Snake River. IDEQ and ODEQ first issued a TMDL on July 15, 2003, and submitted the revised Hells Canyon

[7] United States Environmental Protection Agency, "Considerations for Revising and Withdrawing TMDLs" (March 22, 2012) (hereinafter "Considerations for Revising TMDLs") (available at http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/upload/Draft-TMDL_32212.pdf).

TMDL to EPA on June 19, 2004.[8] EPA approved the Hells Canyon TMDL by letter dated September 9, 2004.[9]

To bring the reach into compliance with nutrient water quality standards, the Hells Canyon TMDL sets a target of 0.07 mg/L total phosphorus from May through September with no target the rest of the year. The TMDL provides the following rational for setting this target:

> The fact that algae blooms are generally a summer occurrence, and that summer growth appears to be most directly related to the designated use support concerns discussed previously, is an indication that seasonal targets would be appropriate if sufficient reductions could occur during the critical period of algae growth to result in improved water quality and support of designated beneficial uses.

Hells Canyon TMDL at 313–14. The TMDL calculates that attainment of the seasonal target will result in a 70 percent reduction of algal biomass and finds this sufficient to meet the nutrient water quality standard in the impaired river segment. *Id.* at 316.

To meet this nutrient target, the Hells Canyon TMDL assigns waste load allocations to most point source dischargers and to Idaho Power and calls for nonpoint source discharges to meet the 0.07 mg/L target. *Id.* at 444–48. According to the TMDL, a 62 percent reduction in anthropogenic phosphorus loading would be required to meet the target. *Id.* 299. The TMDL also assigns load allocations to the tributaries of the Hells Canyon reach of the Snake River, which include the inflowing Snake River as well as the Boise, Payette, Malheur, Owyhee, and Weiser Rivers. The TMDL requires each of these tributaries to meet the 0.07 mg/L phosphorus target at its confluence with the Hells Canyon reach. *Id.* at 442. The Hells Canyon TMDL does not assign phosphorous load allocations to point and nonpoint sources located in these inflowing tributaries; instead, the Hells Canyon TMDL provides that tributary source allocations will be established in the TMDLs created for the inflowing tributaries. *Id.*

The Hells Canyon TMDL is a phased TMDL. *Id.* at 8. It was developed using information available at the time but was intended to be revised in the future as new information becomes available. *Id.*[10] The TMDL specifically provides: "This TMDL requires additional data to be collected to determine if the load reductions required by the TMDL lead to attainment of water quality standards." *Id.*

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[8] Idaho DEQ and Oregon DEQ, "Snake River – Hells Canyon Total Maximum Daily Load (TMDL)" (Revised Jun. 2004) (available at www.deq.idaho.gov/water-quality/surface-water/tmdls/table-of-sbas-tmdls/snake-river-hells-canyon-subbasin.aspx).

[9] Letter from Michael G. Gearheard to Barry Burnell (Dated Sep. 9, 2004) (available at www.deq.idaho.gov/water-quality/surface-water/tmdls/table-of-sbas-tmdls/snake-river-hells-canyon-subbasin.aspx).

[10] *See also* Idaho Department of Environmental, Webpage: "Snake River – Hells Canyon Subbasins" (www.deq.idaho.gov/water-quality/surface-water/tmdls/table-of-sbas-tmdls/snake-river-hells-canyon-subbasin.aspx) ("Recognizing the complexity of the Snake River-Hells Canyon system, the TMDL adopts a phased approach to implementation that will identify interim milestones to determine the effectiveness of management measures or other action controls being implemented. It also includes a process for reviewing and revising management approaches.")

Gathering information and revising the TMDL is a central part of achieving the water quality goals set forth in the TMDL. The stated "overall goal" of the Hells Canyon TMDL is "to improve water quality" in the Hells Canyon reach "by reducing pollution loadings from all appropriate sources to meet water quality standards and restore full support of designated beneficial uses" within the reach. *Id.* at 17. To meet this goal, the stated "key objectives" of the TMDL include: "To ensure that additional data and information can and will be incorporated into the SR-HC TMDL effort as time goes on."; and "To ensure that the improved understanding of the SR-HC system (as provided by additional data) can be incorporated into the TMDL effort through the phased implementation and iterative process of the SR-HC TMDL in such a way that targets and load allocations can be revised (if appropriate) to better meet the needs of the designated beneficial uses of the system." *Id.* at 18.

The Hells Canyon TMDL further explains that the phased approach would provide better assurances that water quality standards would be obtained because it included additional monitoring, data collection, and periodic review and assessment. *Id.* at 19. The TMDL states that the:

> fundamental elements of the phased approach are: (1) a process for modifying TMDL objectives, targets and load allocations when water quality standards change; (2) long-term, scientifically justified, water quality-based goals; . . . (5) monitoring to periodically review and determine progress in attaining TMDL objectives; and (6) periodic review and modification of these goals, cost-benefit analysis, and progress in achieving them through a clearly articulated and scheduled phased approach.

Id. at 21–22. The TMDL also provides that ODEQ and IDEQ would consider reopening the TMDL upon new information indicating that "the TMDL or its associated targets and/or surrogates should be modified." *Id.* at 25.

The Implementation Plan for the Hells Canyon TMDL provides that IDEQ and ODEQ intend to review the TMDL at least every five years. *Id.* 572. The Implementation Plan also explains that revisions to specific implementation plans may be undertaken to more effectively target activities to accomplish the TMDLs goals but that "[r]evisions to the TMDL itself imply the need to revisit the basis for water quality impairment, the basic relationship associated with the maximum available loading capacity, and the load allocation to point and nonpoint sources." *Id.* at 583.

In the TMDL, IDEQ and ODEQ recognized the significant effort that would be required under the phased approach: "Implementing these objectives . . . will require a significant effort over the course of many years during which TMDL objectives, assumptions, analysis, progress, and particularly costs and benefits must be periodically reevaluated." *Id.* at 18.

New Information Shows Nutrient Water Quality Standards Will Not Be Achieved Under the Hells Canyon TMDL

When IDEQ chose to set a seasonal phosphorus target, it assumed that algae blooms are generally a summer occurrence in the Hells Canyon reach and that nutrients pass through the reach. But new information shows that neither of these assumptions are true and that the Hells Canyon reach of the Snake River remains impaired for nutrients.

A 2011 USGS water quality report found surprisingly high concentrations of chlorophyll-*a*, both in the Boise and Snake Rivers, in winter and early spring, especially at the confluence of these two rivers. *USGS Report* at 1.[11] Chlorophyll-*a* is a surrogate measure of algae growth, and orthophosphate is the key driver behind chlorophyll-*a* concentrations. *Id.* at 58. The total phosphorus concentration of the Snake River increased by over fifty percent downriver of its confluence with the Boise River. *Id.* at 59. In addition, the report acknowledged that while algae growth is most prominent in the late spring and summer, algae grows and blooms in winter, early spring, and fall when phosphorous is released from sediments. On the Snake River, the report observed algae blooms as early as March. *Id.* at 37.

EPA has acknowledged the significance of this new information and recognized the need for year-round phosphorus limits. In EPA's Response to Comments for NPDES Permit ID-0020443, EPA concluded that effluent limitations for phosphorus in the Hells Canyon reach were needed year-round. *Response to Comments*, p. 27.[12] EPA explained the year-round water quality problems associated with phosphorus, including algae growth in winter, early spring and fall, and the re-cycle of phosphorus from sediment in the water column that occurs when phosphorus binds to particulate matter and settles at the bottom. *Id.* at 28.

Additionally, on December 14, 2012, EPA added Snake River miles 280.5 to 404 in the Hells Canyon reach to Oregon's 303(d) list for exceeding the state's 0.015 mg/l nutrient criteria for chlorophyll-*a* at USGS station 28727 near Adrian, Oregon during fall, winter, and spring.[13]

Relatedly, IDEQ recognizes the need for year-round nutrient limits in the Lower Boise River, which flows into the Hells Canyon reach of the Snake River. In its Draft phosphorus TMDL for the Lower Boise River, for May through September DEQ proposes—as required by the Hells Canyon TMDL—meeting the 0.07 mg/L phosphorus target at the mouth of the Boise River. *Draft Lower Boise TMDL*, p. xxi–xxii.[14] But DEQ also proposes meeting a mean monthly benthic chlorophyll-*a* target from October through April. *Id.*

EPA Must Revise the Hells Canyon TMDL

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[11] Molly Wood and Alexandra Etheridge, United States Geologic Survey, *Water-Quality Conditions near the Confluence of the Snake and Boise Rivers, Canyon County, Idaho* (2011) (hereinafter "*USGS Report*") (available at http://pubs.usgs.gov/sir/2011/5217/pdf/sir20115217.pdf).

[12] EPA, "Lander Street Wastewater Treatment Facility Response to Comments", p. 27 (2011) (available at www.epa.gov/region10/pdf/permits/npdes/id/boise_permits_rtc_031512.pdf).

[13] *See* http://www.deq.state.or.us/wq/assessment/rpt2010/results303d10.asp.

[14] IDEQ, "Draft Lower Boise River Subbasin Assessment and Total Maximum Daily Load: 2015 Total Phosphorus TMDL Addendum for the Lower Boise River, Mason Creek, and Sand Hollow Creek" (Jan. 2015) (available at www.deq.idaho.gov/regional-offices-issues/boise/basin-watershed-advisory-groups/lower-boise-river-wag.aspx).

The Hells Canyon TMDL is now over ten years old. While the Clean Water Act does not explicitly address TMDL revision, both EPA and the State of Idaho recognize that a TMDL must be revised when new information shows that the TMDL will not achieve compliance with water quality standards, as is the case here. The "phased approach" to TMDL development—used in Idaho and endorsed by EPA—is premised on the idea that TMDLs will be revised in the future as new information becomes available. And the Hells Canyon TMDL itself, as adopted by Idaho and approved by EPA, calls for and depends on five-year review and revision to ensure nutrient water quality standards will be met.

As shown in the 2011 USGS report and acknowledged by EPA, important assumptions used to justify a seasonal phosphorus target were incorrect, and this and further information shows nutrient water quality standards are not being met. Yet, despite the fundamental role that review and revision are supposed to play under the Hells Canyon TMDL, the TMDL has never been reviewed or revised. It is, therefore, necessary for EPA to use its authority under Section 303(d) of the Clean Water Act to review, disapprove, and revise the Hells Canyon TMDL. Until EPA takes this action, the Hells Canyon reach of the Snake River will remain impaired for nutrients and the ongoing implementation of the TMDL will result in only limited progress.

Conclusion

The Idaho Conservation League petitions EPA use its authorities under Section 303(d) of the Clean Water Act to review and disapprove the Hells Canyon TMDL and to establish a new nutrient target which will actually achieve water quality standards in the Hells Canyon reach of the Snake River. We look forward to receiving your prompt response to this petition and look forward to working with EPA Region 10 to protect the Snake River from nutrient pollution. If we do not receive a response from EPA within 120 days, we will assume that EPA has denied this petition and reserve the right to seek judicial review accordingly.

Please feel free to contact me or Justin Hayes at the Idaho Conservation League (208.345.6933x24; jhayes@idahoconservation.org) should you wish to discuss this matter.

Sincerely,

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Exhibit A

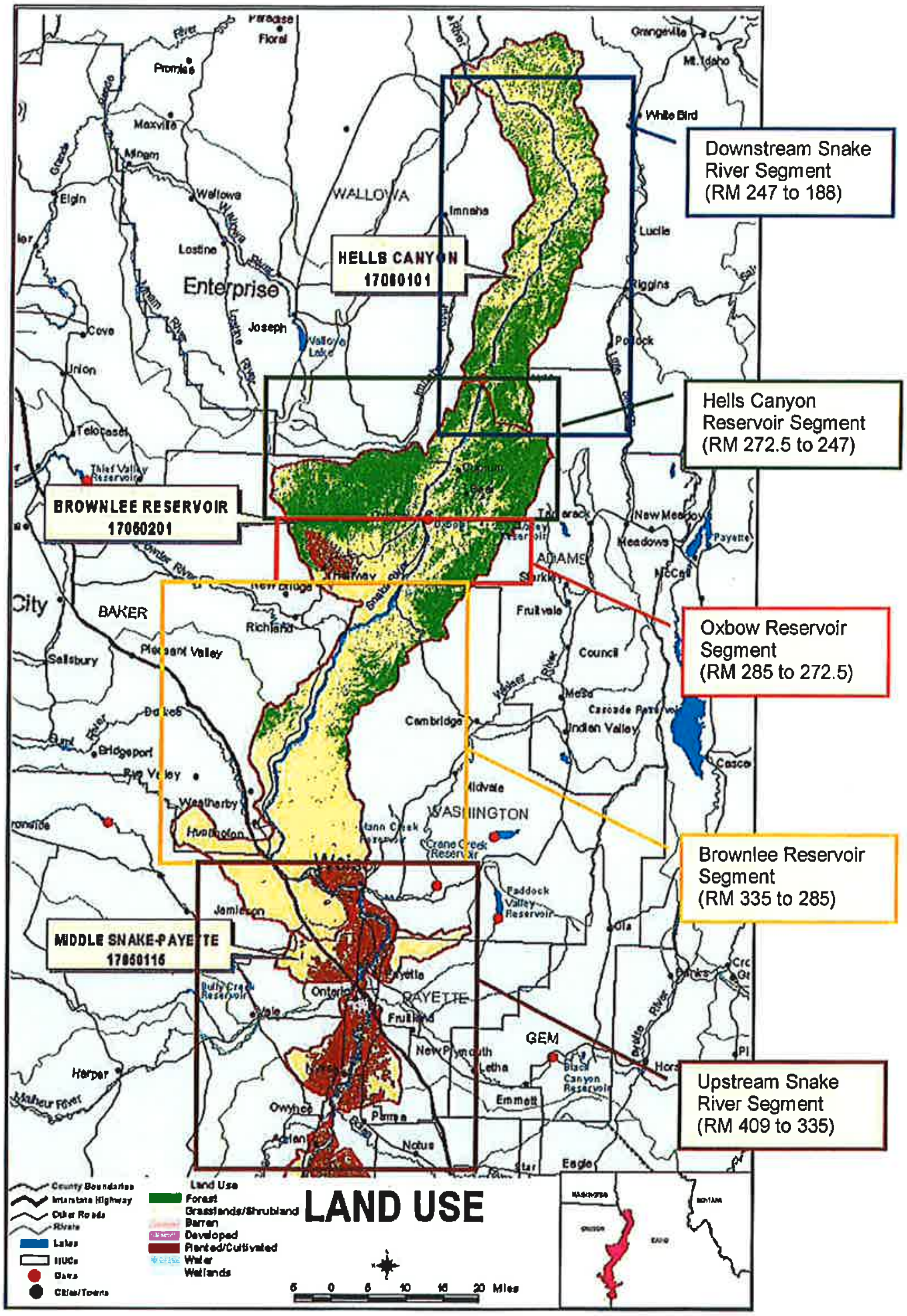

Figure B. Snake River – Hells Canyon TMDL segments.