



State of Oregon Department of Environmental Quality

# Oregon Environmental Quality Commission Meeting

Jan. 21-22, 2020

## Rulemaking, Action Item J Crater Lake Outstanding Resource Water Designation

### Table of Contents

DEQ Recommendation to EQC.....	2
Introduction .....	3
Statement of Need .....	6
Rules Affected, Authorities, Supporting Documents.....	7
Fee Analysis.....	8
Statement of Fiscal and Economic Impact .....	9
Federal Relationship .....	14
Land Use.....	15
EQC Prior Involvement.....	16
Advisory Committee .....	17
Public Engagement.....	19
Implementation.....	30
Five-Year Review.....	31
Accessibility Information.....	32

# DEQ Recommendation to EQC

DEQ recommends that the Environmental Quality Commission adopt the proposed rule amendments in Attachment A as part of Chapter 340 of the Oregon Administrative Rules.

**Proposed EQC motion:**

*“I move that the commission adopt the proposed amendments to Oregon Administrative Rules 340-041-0004 and 340-041-0185, as shown in Attachment A.”*

# Introduction

Oregon DEQ proposes that the Environmental Quality Commission adopt rule amendments to designate Crater Lake an Outstanding Resource Water and to adopt policies to protect the lake's existing high quality and ecological and recreation values from degradation. The proposed rule amendments implement the Outstanding Resource Water policy contained in Oregon's water quality standards rules.

## Short summary of proposed rule changes

The proposed rule amendments identify Crater Lake as an Outstanding Resource Water in the antidegradation policy at OAR 340-041-0004(8). The amendments also add a policy to protect the existing high water quality and ecological and recreation values of the lake to the basin specific water quality standards for the Klamath Basin (OAR 340-041-0185), where the lake is located. The proposed rules prohibit new or increased permitted discharges and any other new discharges that would degrade the existing water quality or ecological or recreation values of Crater Lake. Limited duration activities to respond to public health or safety emergencies, and for long term benefits, such as restoration or enhancement activities, are allowed. The proposed rule amendments may be found in Attachment A.

## Background: reasons for doing this rulemaking

On April 22, 2019, the Northwest Environmental Defense Center petitioned the Oregon Environmental Quality Commission to adopt rules designating Waldo Lake and its associated wetlands as Outstanding Resource Waters of Oregon. The petition also proposed that the commission adopt a policy to protect the current high water quality and exceptional ecological values of Waldo Lake. In July 2019, the commission granted the petition and directed DEQ to initiate the requested rulemaking. The commission also directed DEQ to include Crater Lake in the Outstanding Resource Water rulemaking.

Outstanding Resource Waters are high quality waters that have extraordinary or unique character or ecological value, or are critical habitat areas, such that they constitute an outstanding state or national resource. The special water quality and ecological values of these waters must then be protected in accordance with Oregon's antidegradation policy [OAR 340-041-0004].

Crater Lake, the centerpiece of Oregon's only National Park, is unique. Located in a volcanic caldera, Crater Lake is the deepest lake in the United States and is exceptionally clear and pristine. Crater Lake has outstanding water quality and is located in a scenic setting. The lake is important for long-term research and recreation, attracting visitors from around the world, and has cultural significance to Native American tribes. Additional information on Crater Lake may be found in the Crater Lake Outstanding Resource Water Support Document, which may be found at this link: [Waldo and Crater Lakes ORW](#). (See also Attachment B1)

## How this rulemaking addresses the reasons for doing the rulemaking

The rulemaking establishes policies to protect the existing high water quality and ecological and recreation values of Crater Lake within the state's water quality standards. The rules designate the lake an Outstanding Resource Water and prohibit discharges that would degrade water quality. The Outstanding Resource Water status is expected to support the efforts of the National

Park Service to protect the lake's water quality through its lake and watershed management and monitoring programs.

## **Key policy and technical issues**

1. A key policy issue is how the rule language should address the need to balance public access to the lake for recreation and tourism with protecting the lake's high water quality and ecological values, and how to make the intended balance of these values clear in the rule. DEQ's proposed rule language for Crater Lake is intended to recognize that current levels of recreation and tourism activity are part of the baseline and co-exist with the existing high water quality. Therefore, the proposed policy goal is to prevent degradation from the current state due to additional activity or development. It is not DEQ's intent to reduce or remove current recreation and tourism activities, which are themselves one of the exceptional values of the lake. However, these activities should be managed to prevent discharges that would degrade water quality. Protecting the water quality of Crater Lake will help ensure that the exceptional recreation opportunity it provides will persist through time.

The proposed rules establish the policy goal in the state's water quality standards and prohibit discharges permitted by DEQ under the Clean Water Act that would degrade the existing water quality. The National Park Service manages activities on the lake and in the watershed to meet water quality standards, which, if adopted, will include the Outstanding Resource Water rule.

2. A key technical issue is whether Crater Lake qualifies for the Outstanding Resource Water designation. DEQ concludes that it does because it is an exceptionally clear, pristine lake that stands out among other lakes in the state and in the region. Crater Lake also provides unique opportunities for research and outdoor recreation. Supporting information for these conclusions is provided in the *Crater Lake ORW Support Document* (See Attachment B).

3. A final key technical issue is how to determine whether an activity would be expected to cause a new or increased discharge that would degrade water quality. The proposed ORW policy states the water quality goal, and the National Park Service, as the land manager, would use data and professional judgment to make such determinations through its management planning processes. In some cases it can be difficult to differentiate whether a water quality change is the result of a new or increased discharge as opposed to another influence, such as climate change, atmospheric deposition or natural processes. This challenge requires data and professional judgement, which is best evaluated by the federal land manager and its professional staff, in cooperation with DEQ and other federal and state agencies or researchers who may also have relevant expertise.

Related to this issue, is the understanding that some processes, such as climate change, wildfires, atmospheric deposition, or the non-endemic crayfish present in the lake, are beyond the control of the park service or the state. Due to the park's robust monitoring program, small changes that result from these processes may be detected. Crater Lake is the subject of research on some of these more global processes because the lake provides a high quality baseline and there are few other anthropogenic impacts. Therefore, while the proposed rule establishes a protective goal for Crater Lake, DEQ also recognize that there are limitations on the ability of Crater Lake National Park or the state alone to prevent changes to the lake that may result from these more global processes or a combination of these processes and natural processes.

## **Affected parties**

Parties that these rules may affect include the lake and watershed manager, the National Park Service, recreation users and tourists, environmental Non-Governmental Organizations interested in maintaining the lakes' pristine character, researchers, businesses that provide concession services in the National Park, and businesses that provide recreation and tourism services to people visiting the lake.

## **Outreach efforts and public and stakeholder involvement**

DEQ formed a stakeholder advisory committee to review the fiscal impact statement and provide early input on the rule language options. The committee provided information before the meetings that DEQ used to draft the fiscal impact statement. Then DEQ met with the committee twice for discussion and input on draft materials. More information on the stakeholder advisory committee may be found under the sections on the advisory committee and the fiscal impact statement below.

DEQ offered to share information with Oregon tribes and discuss their support or concerns. No Tribes requested a meeting or additional information.

## **Brief summary of fiscal impact**

DEQ concludes that the proposed rules will not cause any negative fiscal or economic impact to businesses. Because the rules will help to protect the lake qualities that attract recreation users and tourists, they support businesses that provide recreation and tourism services. The tourism industry is a significant contributor to the local economy near Crater Lake.

The rules are consistent with the management goals of the National Park Service. However, to the extent Crater Lake National Park decides additional management or monitoring activities are needed to fully implement the ORW policy, there may be associated costs.

# Statement of Need

## **What need would the proposed rule address?**

The proposed rule amendments implement the state's Outstanding Resource Water policy and address the need to protect the exceptional water quality, ecological, cultural and recreational values of Crater Lake.

## **How would the proposed rule address the need?**

The rules address the need by designating Crater Lake an Outstanding Resource Water and adopting a policy to protect the existing water quality in the state's water quality standards. The policy supports the management goals of the National Park Service, which manages the lake and its watershed.

## **How will DEQ know the rule addressed the need?**

DEQ will know the rule addressed the need if the National Park Service continues to manage the lake to protect its high water quality, and if data demonstrates that the lake is maintaining its current baseline quality and not degrading due to activities within the Park's control.

# Rules Affected, Authorities, Supporting Documents

## Lead division

Water Quality

## Program or activity

Water Quality Standards

## Chapter 340 action

Amend	
340-041-0004	340-041-0185

Statutory Authority - ORS			
468.020	468B.030	468B.035	468B.048

Statutes Implemented - ORS		
468B.030	468B.035	468B.048

## Documents relied on for rulemaking

Document title	Document location
Crater Lake ORW Support Document	<a href="https://www.oregon.gov/deq/Regulations/rulemaking/Pages/rwaldoorw2020.aspx">https://www.oregon.gov/deq/Regulations/rulemaking/Pages/rwaldoorw2020.aspx</a>

# Fee Analysis

This rulemaking does not involve fees.

# Statement of Fiscal and Economic Impact

## Fiscal and Economic Impact

### Crater Lake

DEQ expects that the proposed rules would have no negative fiscal impact on the economy of the region surrounding Crater Lake National Park. Given the lake is in a National Park, the Outstanding Resource Water designation is not expected to increase the number of visitors to the park. But neither would it be expected to have a negative impact on tourism revenue in the region. Rather, the status would support income from recreational users and visitors by helping to protect the primary feature of the park.

One of the major goals of the National Park is to provide and encourage visitor access. In 2019, there were 704,512 recreation visitors to the park. The park is considered a leading attraction in Southern Oregon that contributes a significant amount of revenue to the regional economy.

Overall, tourism contributes \$200 million annually to Klamath County, which is 1.8% of Oregon's tourism economy. This value has increased by more than 100% compared to ten years ago. According to the NPS, Crater Lake National Park contributes \$81 million annually to surrounding communities in Klamath County, Central Oregon, the Upper Rogue Valley, the Lower Rogue Valley, and the Willamette Valley. With Crater Lake National Park generating about \$32 million of Klamath Counties' total \$200 million in overall in-bound tourism, the National Park accounts for about 16% of tourism in Klamath County.

There are three commercial services within and around Crater Lake National Park, known as concessions. These include Crater Lake Hospitality LLC (providing lodging, scenic tours, retail operations, food service), Crater Lake Trolley (a shuttle company providing scenic and sightseeing tours), and Xanterra Parks and Resorts Inc. (providing retail, lodging, auto, gas and service stations). In the 2016 fiscal year, revenues for concessions were \$13,413,607. In addition, there were 54,223 overnight stays within or around the park in 2019.

The National Park Service management plan and monitoring program goals are consistent with the proposed Outstanding Resource Water rules. The monitoring program investigates potential short- and long-term changes to lake water quality. If any changes are found, staff recommend mitigation. Crater Lake has been the object of scientific studies since the 1800s. It is the most studied caldera lake in the world. This research has contributed to an internationally recognized long-term body of scientific knowledge. Crater Lake National Park's environmental monitoring program has operated continuously since 1983. Research has been conducted by Park Service biologists and by university and government scientists. The proposed rules would help to continue research opportunities as well as provide economic benefit associated with this activity. DEQ is unable to quantify these benefits with available information.

## **Statement of Cost of Compliance**

There is no expected cost of compliance with the rules because there are no current activities in Crater Lake National Park that do not currently comply with the rules.

### **State and Federal agencies**

#### **DEQ**

There are no expected direct impacts to DEQ. The rules prevent new or increased wastewater discharges or regulated activities that would degrade the water quality of Crater Lake from its current condition. Therefore, there should be no need to develop permits, 401 certifications, or Total Daily Maximum Loads for these waterbodies.

#### **National Park Service**

DEQ does not expect any direct fiscal impacts to Crater Lake National Park as a result of the proposed rules. The current management goals for Crater Lake are consistent with the proposed designation. However, if additional lake management plans or additional monitoring are needed to implement the goals, these actions may have associated costs. The possible costs are unknown with available information.

### **Local governments**

#### **Direct Impacts**

DEQ does not expect a direct fiscal impact to local governments as a result of this rule.

#### **Indirect Impacts**

DEQ does not expect an indirect fiscal impact to local governments as a result of this rule. Rather, the rules are expected to support revenue related to recreation and tourism.

### **Public**

#### **Direct Impacts**

DEQ does not expect a direct fiscal impact to the public as a result of this rule.

#### **Indirect Impacts**

DEQ does not expect indirect fiscal impacts to the public as a result of this rule.

### **Large businesses - businesses with more than 50 employees**

#### **Direct Impacts**

DEQ does not anticipate fiscal impacts to any large businesses as a result of the rule.

#### **Indirect Impacts**

DEQ does not anticipate indirect impacts to any large businesses as a result of the rule.

## **Small businesses – businesses with 50 or fewer employees**

### **Direct Impacts**

DEQ does not expect that the proposed rule would directly impact small businesses.

### **Indirect Impacts**

The proposed rules may provide indirect benefits to businesses relying on revenue from recreational users and tourists in the area. Businesses may include: local hotels, gas stations, restaurants, campgrounds, grocery stores, camping supply stores, recreation related stores, and others that benefit from tourism and recreation. DEQ is unable to quantify such impacts with available information. But personal communication with the rulemaking advisory committee does indicate that the rules would support businesses associated with recreation.

No small businesses are located within Crater Lake National Park. However, there are a number of small businesses in the region supported by visitors to the park. In addition, DEQ expects that the proposed rules will indirectly benefit groups that research the cultural and natural resources of Crater lakes.

#### **1. Estimated number of small businesses and types of businesses and industries with small businesses subject to proposed rule.**

The proposed rules would not subject any small businesses operating in the Crater Lake area to new requirements.

#### **2. Projected reporting, recordkeeping and other administrative activities, including costs of professional services, required for small businesses to comply with the proposed rule.**

No additional activities are required to comply with the proposed rules.

#### **3. Projected equipment, supplies, labor and increased administration required for small businesses to comply with the proposed rule.**

No additional resources are required for compliance with the proposed rules.

#### **4. Describe how DEQ involved small businesses in developing this proposed rule.**

Lynda Kamerrer, President of the Oakridge and Westfir Chamber of Commerce, provided information on small businesses in the Waldo Lake area. Jim Chadderdon, the Executive Director of Discover Klamath, provided information about tourism revenue. In addition, DEQ believes that businesses associated with lodging and accommodation may also benefit from increased tourism.

No small businesses were identified within Crater Lake National Park because there are none. However, there are a number of small businesses in the region supported by visitors to the park.

## Documents relied on for fiscal and economic impact

Document title	Document location
National Park Service, U.S. Department of the Interior. 2015. Foundation Document Crater Lake National Park Oregon	<a href="#">Crater Lake National Park Foundation Document</a>
National Park Service. 2017. Commercial Services Program 2016 AFR Revenues.	<a href="#">Crater Lake Concession Revenue</a>
National Park Service. 2020. NPS Visitor use statistics.	<a href="#">Crater Lake Visitor Use Statistics</a>

## Advisory committee fiscal review

DEQ appointed an advisory committee.

As ORS 183.33 requires, DEQ asked for the committee's recommendations on:

- Whether the proposed rules would have a fiscal impact
- The extent of the impact
- Whether the proposed rules would have a significant adverse impact on small businesses; if so, then how DEQ can comply with ORS 183.540 reduce that impact

The committee reviewed the draft fiscal and economic impact statement. Its findings are available in the committee minutes on this rulemaking's web page: [Waldo and Crater Lakes ORW](#). Committee members provided DEQ with information about visitation and the contribution of recreation and tourism to local economies in the Crater Lake area. They also identified the types of small businesses that should benefit from increased recreation and tourism after ORQ designation.

The committee determined the proposed rules would not have a significant adverse impact on small businesses around Crater Lake. Furthermore, the committee also agreed that the Outstanding Resource Water status will likely not have an impact on the number of visits to Crater Lake since it is in a National Park and attracts visitors from around the nation and the world.

## Housing cost

As ORS 183.534 requires, DEQ evaluated whether the proposed rules would have an effect on the development cost of a 6,000-square-foot parcel and construction of a 1,200-square-foot detached, single-family dwelling on that parcel.

DEQ determined the proposed rules would have no effect on development costs. Crater Lake is currently on federal lands managed by the National Park Service. Residential and business development is not underway and is not a goal of the management plan for the lake. In addition, the proposed rules are not expected to significantly impact development in the

surrounding areas. Visitation to the lakes is primarily driven by the recreation, natural beauty and research opportunities that currently exist.

# Federal Relationship

## Relationship to federal requirements

ORS 183.332, 468A.327 and OAR 340-011-0029 require DEQ to attempt to adopt rules that correspond with existing equivalent federal laws and rules unless there are reasons not to do so.

Federal regulations under the Clean Water Act require that waters constituting outstanding National resources, should be designated as Outstanding Resource Waters. The federal regulations suggest states should prioritize waters of national and state parks and wildlife refuges and waters of exceptional recreational or ecological significance for consideration. Oregon has corresponding state regulations at OAR 340-041-0004 (8) regarding designation of state waters as Outstanding Resource Waters. DEQ has concluded that Crater Lake is an outstanding national resources due to its unique water quality, extreme clarity, and exceptional recreational and ecological significance. This proposal is consistent with federal requirements under the Clean Water Act.

# Land Use

## Considerations

In adopting new or amended rules, ORS 197.180 and OAR 340-018-0070 require DEQ to determine whether the proposed rules significantly affect land use. If so, DEQ must explain how the proposed rules comply with state wide land-use planning goals and local acknowledged comprehensive plans.

Under OAR 660-030-0005 and OAR 340 Division 18, DEQ considers that rules affect land use if:

- The statewide land use planning goals specifically refer to the rule or program, or
- The rule or program is reasonably expected to have significant effects on:
  - Resources, objects, or areas identified in the statewide planning goals, or
  - Present or future land uses identified in acknowledge comprehensive plans

DEQ determined whether the proposed rules involve programs or actions that affect land use by reviewing its Statewide Agency Coordination plan. The plan describes the programs that DEQ determined significantly affect land use. DEQ considers that its programs specifically relate to the following statewide goals:

<b>Goal</b>	<b>Title</b>
5	Natural Resources, Scenic and Historic Areas, and Open Spaces
6	Air, Water and Land Resources Quality
11	Public Facilities and Services
16	Estuarine Resources
19	Ocean Resources

Statewide goals also specifically reference the following DEQ programs:

- Nonpoint source discharge water quality program – Goal 16
- Water quality and sewage disposal systems – Goal 16
- Water quality permits and oil spill regulations – Goal 19

## Determination

DEQ determined that these proposed rules do not affect land use under OAR 340-018-0030 or DEQ’s State Agency Coordination Program.

## **EQC Prior Involvement**

The EQC was first involved in this issue in April 2019 when it received a rulemaking petition from National Environmental Defense Council requesting that they designate Waldo Lake an Outstanding Resource Water. In July 2019, EQC directed DEQ to conduct rulemaking in response the petition and a staff recommendation to include Crater Lake in the rulemaking.

DEQ provided a status update to the EQC through the director's report at the July 2020 meeting.

# Advisory Committee

## Background

DEQ convened the Waldo and Crater Lake Outstanding Resource Waters Advisory Committee. The committee's purpose was to provide information for and review of the fiscal impact statement, and to provide early input on rule language options and the Waldo and Crater lakes support documents.

The committee membership, shown in the table below, included representatives from the Forest Service, National Park Service, DEQ, environmental and recreational organizations, local government, and the public, and the committee met two times. The committee's web page is located at: [Waldo and Crater Lakes ORW](#).

<b>Waldo and Crater Lakes ORW Advisory Committee</b>	
<b>Name</b>	<b>Representing</b>
Rich Miller	PSU Center for Lakes and Reservoirs
Andy Schaedel	Oregon Lakes Assn.
Mark Riskedahl	Northwest Environmental Defense Center
Lynda Kamerrer, President	Oakridge / Westfir Area Chamber of Commerce
Kelly Minty Morris, Commissioner	Klamath County Commission
<b>Agency Advisors</b>	
Al Johnson	Willamette National Forest
Jennifer Gibson	Crater Lake National Park
Scott Girdner	Crater Lake National Park
Randy Jones	DEQ

## Meeting notifications

To notify people about the advisory committee's activities, DEQ:

- Sent GovDelivery bulletins, to the following lists:
  - Water Quality Standards
  - Rulemaking
- Posted meeting information and materials on the web page for this rulemaking
- Added advisory committee announcements to DEQ's calendar of public meetings at [DEQ Calendar](#).

## **Committee discussions**

In addition to the information included and conclusions described in the Statement of Fiscal and Economic Impact section above, the committee discussed the qualifications of the lakes for Outstanding Resource Water designation and rule language options. Presentations were given on the unique water quality characteristics of both lakes to explain the justification and rationale for considering the designation. Committee members agreed that the lakes are unique ecologically and provide excellent recreational opportunities for visitors and should be granted the designation. The committee discussed three rulemaking language options. DEQ explained the rulemaking language and committee members shared their questions, perspectives and preferences. For additional information on advisory committee presentations and meeting minutes, see the advisory committee section of the rulemaking page: [Waldo and Crater Lakes ORW](#).

# Public Engagement

## Public notice

DEQ provided notice of the proposed rulemaking and rulemaking hearing by:

- On July 15, 2020, filing notice with the Oregon Secretary of State for publication in the Aug. 1, 2020 Oregon Bulletin
- Posting the Notice, Invitation to Comment and Draft Rules on the web page for this rulemaking, located at: [Waldo and Crater Lakes ORW](#)
- Emailing interested parties on the following DEQ lists through GovDelivery
  - Rulemaking
  - Water quality standards
- Emailing the following key legislators required under [ORS 183.335](#)
  - Senator Jeff Golden, Chair, Senate Environment and Natural Resources Committee
  - Senator Alan Olsen, Vice-Chair, Senate Environment and Natural Resources Committee
  - Representative Ken Helm, Chair, House Water Committee
  - Representative Gary Leif, Vice-Chair, House Water Committee
  - Representative Jeff Reardon, Vice-Chair, House Water Committee
- Emailing advisory committee members,
- Posting on the DEQ event calendar: [DEQ Calendar](#)
- Publishing notice in the following newspaper:
  - Klamath Herald & News (Klamath Falls)

## How to comment on this rulemaking proposal

DEQ asked for public comment on the proposed rules. Anyone could submit comments and questions about this rulemaking. A person could submit comments through an online web page, by US mail or at the public hearing.

## Comment deadline

DEQ only considered comments on the proposed rules that DEQ received by 4 p.m., on Aug. 28, 2020.

## Submit comment online

Any person could submit a written comment at this web page:

[Waldo and Crater Lakes ORW](#)

## Note for public university students:

ORS 192.345(29) allows Oregon public university and OHSU students to protect their university email addresses from disclosure under Oregon's public records law. If you are an Oregon public university or OHSU student you may omit your email address when you submit a comment.

**By mail**

Oregon DEQ  
Attn: Debra Sturdevant  
700 NE Multnomah St., Room 600  
Portland, OR 97232-4100

**At hearing**

Aug. 18, 2020

**Public Hearing**

DEQ held one public hearing.

**The hearing was online and by teleconference only.**

Date: Aug. 18, 2020

Start time: 3 p.m.

DEQ considered all comments and testimony received before the comment deadline. DEQ will summarize all comments and respond to comments in the Environmental Quality Commission staff report.

## Public Hearing

DEQ held one public hearing. DEQ received three comments at the hearing. Later sections of this document include a summary of the 730 comments received during the open public comment period, DEQ's responses, and a list of the commenters. Original comments are on file with DEQ.

## Presiding Officers' Record

### Hearing 1

Date	Aug. 18, 2020
Place	On-line, Zoom
Start Time	3 pm
End Time	3:47 pm
Presiding Officer	Michele Martin

### Presiding Officer:

The presiding officer convened the hearing, summarized procedures for the hearing, and explained that DEQ was recording the hearing. Debra Sturdevant gave an informational presentation and answered questions.

The presiding officer asked people who wanted to present verbal comments to sign up through the chat box, or if attending by phone, to indicate their intent to present comments. The presiding officer advised all attending parties interested in receiving future information about the rulemaking to sign up for GovDelivery email notices.

As Oregon Administrative Rule 137-001-0030 requires, the presiding officer summarized the content of the rulemaking notice.

Seventeen people attended by webinar. Three people commented orally and no one submitted written comments at the hearing.

## **Summary of Public Comments and DEQ Responses**

DEQ accepted public comment on the proposed rulemaking from July 15, 2020 until 4 p.m. on Aug. 28, 2020. DEQ received comments from 730 separate individuals or groups by the close of the comment period. Some of the individuals represented, spoke on behalf of, or sent letters on behalf of multiple organizations. There were three individuals who provided both written and oral testimony. The majority of commenters (92% or 673 comments) signed one of the two form letters of support. An indexed list of commenters, the organizations they represented if any, and the method through which DEQ received their input is included in Attachment C.

All commenters except one expressed support for designating Waldo and Crater Lake as Outstanding Resource Waters and for adopting the associated policies ensuring that the outstanding values and quality of these waters are maintained. Four commenters expressed support with suggested revisions to the rule language. Specific topics mentioned by those in support are outlined in the summary of comments contained in that section.

Five commenters expressed support for the designation while also mentioning specific concerns they had about recreational user impacts and management of both lakes. One commenter representing three organizations, The Oregon Farm Bureau Federation, Oregonians for Food and Shelter, and Oregon Forest and Industries Council, expressed concerns regarding the screening process for ORW designation, and whether water quality values were clearly stated. The specific reasons are discussed below in the summary of significant public comments.

For public comments received by the close of the public comment period, the following section organizes comments into four topics:

### **Topic 1. Comments in Support of ORW designation**

### **Topic 2. Comments in Opposition of ORW designation**

### **Topic 3. Comments Requesting Revisions to the Rule Language**

### **Topic 4. Additional Comments**

The summary includes cross references to the commenter number. DEQ's response follows the summary for each topic. Original comments are on file with DEQ.

## **Topic 1: General Comments in Support of ORW Designation**

### **a. General statements of support**

DEQ received 730 comments in this category from commenters. Commenters expressed support for designating Waldo Lake (14 comments), Crater Lake (1 comment), or both lakes (715 comments) as Outstanding Resource Waters and for adopting the associated policies ensuring that the outstanding value and quality of these waters are maintained. The following reasons were commonly cited by those in support of the designation:

- The importance of protecting water quality for future generations (approximately 386 commenters for both lakes; 1 commenter for Crater Lake).

- The importance and need to have wise stewardship of lake water quality (approximately 382 commenters for both lakes).
- Protection is needed to maintain critical habitat areas (approximately 356 commenters for both lakes).
- The pristine nature and high quality of these waters as resources (approximately 718 commenters for both lakes; 1 commenter for Crater Lake).
- The importance of both lakes for recreational use including camping, hiking, biking, swimming, and paddling (approximately 689 commenters for both lakes).
- The importance of Crater Lake in cultural significance for Native American tribes (approximately 304 commenters).

**DEQ Response:** DEQ appreciates the large number of comments in support of designating Waldo Lake and Crater Lake as Outstanding Resource Waters. DEQ agrees that Crater Lake qualifies for ORW designation and that the outstanding values including water clarity, habitat for fish and rare plants, and recreational opportunities should be protected.

#### **b. Form letters**

Many commenters, 92%, submitted form emails to DEQ, all in support of the ORW designation. There were two form letters submitted from a website called ‘every action custom’ although their affiliation was not identified.

- Form letter one:** 371 commenters submitted a form letter in support of the ORW designation stating that the designation would extend stronger environmental protections to water quality, ecological values, and critical habitat areas. These commenters mentioned the importance of the clear waters of Crater Lake for visitors and researchers and state the importance of designating Crater Lake an ORW.
- Form letter two:** 302 commenters submitted a form letter in support of the ORW designation stating the designation would establish policies that reduce pollution to ensure the health and protection of Waldo and Crater Lakes’ high quality waters. These commenters mentioned the importance of protecting the water quality of both lakes for research and recreation. The commenters also stated the important cultural significance of Crater Lake to Native American tribes.

**DEQ Response:** DEQ acknowledges the large number of comments in support of the proposed rule.

#### **Topic 2: General Comments in Opposition of ORW Designation**

DEQ received no comments in this category.

#### **Topic 3. Comments Requesting Revisions to the Crater Lake ORW Rule Language**

DEQ received comments in support of the ORW designation but with suggestions to the rule language from Crater Lake National Park (commenter 440), the U.S. Environmental Protection Agency (commenter 452) and Rouge Riverkeeper (commenter 487).

##### **a. General comment on rule language for Crater Lake.**

Crater Lake National Park Superintendent Craig Ackerman explained that he consulted with the NPS regional office and the U.S. Department of Interior to suggest rule language modifications that include how NPS policies will contribute toward upholding the ORW designation.

**DEQ Response:** DEQ appreciates the efforts of CLNP to support the ORW designation and to consult with the NPS and DOI to provide specific comments that clarify the park’s statutory direction and authority to manage Crater Lake and surrounding lands. DEQ accepted some of the recommended revisions, while modifying others in order to ensure the rules are clear, concise and consistent with the Waldo Lake ORW rule.

**b. Specific comments on the proposed rule language at OAR 340-041-0185(6)(b):**

*(6) Outstanding Resource Waters of Oregon (ORWs)*

...

*(b) The current high water-quality, exceptional ecological values, and existing and designated uses of Crater Lake shall be maintained and protected, **except if altered by causes beyond the control of park management.***

EPA recommends that the phrase “except if altered by causes beyond the control of park management” be deleted or revised to read “except as altered by natural causes.” EPA is concerned that this language would make water quality impacts from illegal activities acceptable according to the rule. EPA suggests that even if NPS management cannot prevent such activities, the impacts that may occur to water quality and uses as a result of illegal activity should not be accepted in rule as being consistent with water quality standards.

Rogue Riverkeeper comments that the language in *(b)* creates an exception allowing for the potential degradation of Crater Lake’s high water quality due to the undefined statement: “altered by causes beyond the control of park management.” They comment that more information is needed to define this statement.

Both commenters note that the proposed language for the designation of Waldo Lake and the adopted language for the North Fork Smith River ORW rules require that the high water quality of these waterbodies be maintained and protected “except as altered by natural causes.”

**DEQ Response:** The proposed wording “beyond the control of park management” was intended to refer to potential impacts from climate change, atmospheric deposition of wildfire ash, or the presence of a non-native crayfish in the lake. Because Crater Lake is the subject of robust monitoring and ecological research, these types of impacts, even if slight, may be detected. They may result from the combined effect of natural processes and distant human actions, which can be difficult to attribute. Yet, these types of impacts are beyond the control of park management or the state. However, DEQ recognizes that the current proposed wording is not clear regarding what is and is not included.

The goal for an ORW according to state and federal policy, is to maintain the existing high water quality and ecological and recreation values. DEQ proposes to revise the language to establish a protective goal for Crater Lake consistent with state and federal ORW policy. At

the same time, DEQ acknowledges that there are processes that will act on the lake that are outside the control of the Park Service or the state.

Therefore, DEQ will revise the policy statement to state the desired goal for the waterbody. Concerns regarding limitations on the ability of the National Park Service or the state to fully prevent potential impacts that are beyond their control are acknowledged. See also the discussion of sub-section (d) below.

DEQ proposes to revise the proposed rule language in subsection (b), now subsection (a), as follows:

*(a) Crater Lake. The current high water-quality and exceptional ecological and recreation values ~~and existing and designated uses~~ of Crater Lake shall be maintained and protected, except if altered by causes beyond the control of park management as altered by natural processes or as authorized under (6)(a)(A)-(B), below.*

**c. Specific comments on the proposed rule language at OAR 340-041-0185(6)(c):**

*(6) Outstanding Resource Waters of Oregon (ORWs)*

...

*(c) No new NPDES discharge or expansion of an existing NPDES discharge to Crater Lake shall be allowed **if such discharge would degrade the water quality within these waters**, except construction stormwater permits for limited duration projects.*

The National Park Service recommends adding the language shown in bold above.

**DEQ Response:** DEQ's precedence is to prohibit new or increased permitted discharges to ORWs. DEQ also limits permitted discharges to any natural lake with some exceptions. The rule already includes an exception for limited duration projects that would need a construction/stormwater permit. Therefore, DEQ does not accept the suggested addition to subsection (c).

**d. Specific comment on the proposed rule language at OAR 340-041-0185(6)(c):**

Rogue Riverkeeper expressed concerns with the exception for construction stormwater permits, stating that without clear sideboards to define this provision, the proposed language creates a potential loophole that could allow *de minimis* pollution and degradation of Crater Lake, contrary to the intent of the Clean Water Act. Rogue Riverkeeper notes the existing language for the North Fork Smith River and the proposed language for Waldo Lake do not include this exception.

**DEQ Response:** Unlike the NF Smith River, both Waldo Lake and Crater Lake have existing roads and facilities associated with recreation access that will likely need maintenance or improvement over time. Recreation use is one of the exceptional values of these waterbodies. These facilities should be maintained and improved in order to ensure that they contribute to protecting water quality while allowing public access and do not contribute to water quality degradation over time. In order to conduct road or facility maintenance or improvements, a stormwater construction permit may be required. The permit ensures that best management practices are used during construction to prevent impacts to water quality.

DEQ revised the proposed rule to clarify that the permits may only authorize short term impacts.

**e. Specific comments on the proposed rule language at OAR 340-041-0185(6)(d):**

*(6) Outstanding Resource Waters of Oregon (ORWs)*

...

*(d) The National Park Service Organic Act (16 U.S.C. 1 et seq.) directs Crater Lake National Park to “conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.” This statutory direction is compatible with Outstanding Resource Water maintenance and protection as Crater Lake and surrounding lands and waters under National Park Service jurisdiction will be managed in manner that perpetuates their protection, including water quality, and precludes impairment in accordance with Department of the Interior and National Park Service management authorities. Activities regulated by DEQ will be managed to protect and maintain the existing water quality of Crater Lake. Exceptions to maintaining the existing water quality may be made on a short-term basis to respond to public health and welfare emergencies, or to obtain long-term restoration or water quality improvements.*

The National Park Service suggested the rule language additions and revisions shown above in bold.

**DEQ Response:** Subsection (d), now subsection (a)(B), of the rule states the policy regarding protection of the lake from non-permitted activities. The park’s statutory direction to also provide for public enjoyment of the park is meant to be acknowledged in subsection (e), now subsection (a)(C), of the rule. DEQ acknowledges the importance of recognizing the federal statutory directive tied to the establishment of the park. It is not DEQ’s practice to quote other regulations within our rules. Therefore, we propose instead to refer to the federal Act as shown in our revision to subsection (a)(C) shown below.

DEQ strives to propose rule language that is clear and concise, and to be consistent between rules intended to have the same meaning where possible. Another revision to the rule language, therefore, is intended clarify that DEQ regulates discharges but not the activities themselves within the park. Other revisions to this rule language and the Waldo Lake ORW rule are made to bring the two into alignment with each other. If the rule language is different, that can create uncertainty about whether the meaning was intended to be different as well, which in this case it is not.

DEQ proposes the following revised rule revisions to the rule language in subsection (a)(B) and (C).

*(6) Outstanding Resource Waters of Oregon (ORWs)*

...

*(a)(B). Any other new discharge to Crater Lake is prohibited if such discharge would degrade the water quality or ecological or recreation values of Crater Lake, except in the following circumstances:*

(i) As needed to respond to a public health or safety emergency, including but not limited to wildfire response. The water quality impacts of such responses shall be short term and will be mitigated or rehabilitated to the extent practicable; or  
(ii) As needed in connection with ecological restoration or water quality improvement activities where short term water quality impacts are necessary to obtain long-term restoration or water quality improvements.

(a)(C) The Environmental Quality Commission acknowledges the mandate of Crater Lake National Park to also manage the park for the purpose of providing public access and enjoyment, as directed by the National Park Service Organic Act (16U.S.C. 1 et seq.).

**f. Specific comments on the proposed rule language at OAR 340-041-0185(6)(d).**

Rogue Riverkeeper expressed concern that without clear definitions, the exception in subsection (d) (shown below in bold), creates potential loopholes that could allow the degradation of Crater Lake's water quality.

*(d) Activities in and on Crater Lake and in the watershed shall be managed to protect and maintain the existing water quality, **except on a short-term basis to respond to public health and welfare emergencies, or to obtain long-term restoration or water quality improvements.***

In addition, Rogue Riverkeeper is concerned that the language in subsection (d) is less protective than the language adopted for the NF Smith River and proposed for Waldo Lake, shown here:

*(e) No activities may be allowed that would degrade the existing water quality and ecological characteristics and values of these waters.*

**DEQ Response:** The exception included in the Crater Lake rule is provided in the ORW policy at OAR 40-041-0004(8). It was not included in the NF Smith rule language under the assumption that it was not needed because it is included in the ORW rule and is therefore effective for all ORWs. However, DEQ finds that it is clearer to include the exceptions in the specific ORW rule rather than rely on the language at OAR 40-041-0004(8). Therefore, DEQ proposes including it in the Crater Lake rule and in the final proposed Waldo Lake rule.

DEQ revised the proposed rule language in subsection (d), now subsection (a)(B), as shown above. The new language clarifies that DEQ regulates discharges, rather than activities, in order to achieve the criterion. The language used in the NF Smith River is not clear that the ORW rule is not intended to reduce or remove recreation activity, but rather prevent degradation from the existing high water quality conditions. Recreation is one of the exceptional values of Crater Lake and is part of the baseline of the existing condition. It is the role of the National Park Service to manage recreation activities to implement the ORW policy.

**g. Specific comments on the proposed rule language at OAR 340-041-0185(6)(e).**

The National Park Service suggested adding the phrase shown in red below.

*(e) The Environmental Quality Commission acknowledges the mandate of Crater Lake National Park to also manage the park for the purpose of providing public access and enjoyment. Existing and designated uses will be maintained, and new uses will be considered in accordance with (c) and (d) above.*

**DEQ Response:** The last sentence added to subsection (e) appears to be redundant with subsection (d) and therefore unnecessary. Subsection (d) is intended to be the statement about management to protect existing water quality and, therefore, designated uses. Subsection (e) is intended to recognize the mandate of the park to also provide for the enjoyment of the public. It is unclear what the NPS means regarding “new uses.” DEQ does not accept this addition to subsection (e).

#### **Topic 4. Additional Comments**

DEQ received six comments in this category from commenters (commenters 6, 220, 451, 491, 502, 671).

##### **a. Comments relating to recreational user impacts including human waste and introduction of non-native (invasive) species**

Four commenters noted that specific management practices and protections need to be enacted to address impacts from recreational users including how to deal with human waste (commenters 220, 451, and 671), allowing dogs into the water (commenter 220), and accidental introduction of non-native (invasive) species (commenters 220, 451, and 491).

**DEQ Response:** DEQ acknowledges and appreciates the comments related to the importance of addressing recreational user impacts including human waste and the introduction of non-native organisms when managing recreation and monitoring water quality around Crater Lake. This ORW Rulemaking does not specifically address management practices; however, DEQ will forward these concerns to the Forest Service and the National Park Service.

##### **b. Lack of required Screening Process for ORW Designation**

One commenter stated that DEQ did not utilize the screening process required by OAR 340-041-0004(8)(a) in recommending that Waldo and Crater Lakes be designated as ORWs (commenter 502).

**DEQ Response:** DEQ acknowledges that Oregon rules related to ORW designation require DEQ to develop and use a screening process to nominate waterbodies for ORW designation under OAR 340-041-0004(8). The Oregon Department of Justice advised the EQC that the screening and nomination process was not required prior to designating an ORW if the proposed rule was done through a petition process. Furthermore, both lakes are candidates according to the categories listed in OAR 340-041-0004(8)(a). Specifically, Crater Lake qualifies because it is in a National Park OAR [340-041-0004(8)(a)(A)]. Waldo Lake qualifies because it is the headwaters of a National Wild and Scenic River [OAR 340-041-0004(8)(a)(B)] and is partially surrounded by federally designated wilderness area [OAR 340-041-0004(8)(a)(E)].

##### **c. DEQ has not indicated the water quality values to be protected**

One commenter noted that DEQ has not indicated the water quality values to be protected, as required in OAR 340-041-0004(8)(c) (commenter 502).

**DEQ Response:** The rules state that the existing water quality conditions of Crater Lake shall be protected. Data included in the support document and data from the National Park Service describe the baseline existing water quality conditions. Water quality values to be protected specifically include: 1) the outstanding clarity and color, the low productivity and oligotrophic status of the lakes, and the pristine existing water quality; 2) the habitat qualities for the lakes endemic aquatic species, and 3) the importance of the lakes to tourism and recreational users.

# Implementation

## Notification

The proposed rules would become effective upon filing on approximately Jan. 25, 2021.

DEQ would notify affected parties by:

- Email to Crater Lake National Park Superintendent and staff from DEQ staff.

## Compliance and enforcement

Affected parties – Crater Lake National Park

DEQ staff – Office of Compliance and Enforcement

# Five-Year Review

## Requirement

Oregon law requires DEQ to review new rules within five years after EQC adopts them. The law also exempts some rules from review. DEQ determined whether the rules described in this report are subject to the five-year review. DEQ based its analysis on the law in effect when EQC adopted these rules.

## Exemption from five-year rule review

The Administrative Procedures Act exempts all of the proposed rules from the five-year review because the proposed rules would:

- Amend or repeal an existing rule. ORS 183.405(4).

# Accessibility Information

You may review copies of all documents referenced in this announcement at:  
Oregon Department of Environmental Quality  
700 NE Multnomah St., Ste. 600  
Portland, OR, 97232

To schedule a review of all websites and documents referenced in this announcement, call Debra Sturdevant in Portland at 800-452-4011 toll-free in Oregon.

DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email [deqinfo@deq.state.or.us](mailto:deqinfo@deq.state.or.us).



State of Oregon Department of Environmental Quality

# Oregon Environmental Quality Commission Meeting

Jan. 21-22, 2020

## Rulemaking, Action Item J

Waldo Lake Outstanding Resource Water Designation

### Table of Contents

DEQ Recommendation to EQC.....	2
Introduction .....	3
Statement of Need .....	6
Rules Affected, Authorities, Supporting Documents.....	7
Fee Analysis.....	8
Statement of Fiscal and Economic Impact .....	9
Federal Relationship .....	13
Land Use.....	14
EQC Prior Involvement.....	15
Advisory Committee .....	16
Public Engagement .....	18
Public Hearing.....	19
Implementation.....	27
Five-Year Review.....	28
Accessibility Information.....	29

# DEQ Recommendation to EQC

DEQ recommends that the Environmental Quality Commission adopt the proposed rule amendments in Attachment A as part of Chapter 340 of the Oregon Administrative Rules.

**Proposed EQC motion:**

*“I move that the commission adopt the proposed amendments to Oregon Administrative Rules 340-041-0004 and 340-041-0345, as shown in Attachment A.”*

# Introduction

Oregon DEQ proposes that the Environmental Quality Commission adopt rule amendments to designate Waldo Lake and its associated wetlands (here after “Waldo Lake”) as Outstanding Resource Waters and to adopt policies to protect the lake’s existing high quality and ecological and recreation values from degradation. The proposed rule amendments implement the Outstanding Resource Water policy contained in Oregon’s water quality standards rules.

## Short summary of proposed rule changes

The proposed rule amendments identify Waldo Lake as an Outstanding Resource Water in the antidegradation policy at OAR 340-041-0004(8). The amendments also add a policy to the water quality standards for the Willamette Basin (OAR 340-041-0345), where the lake is located, to protect the existing high water quality and ecological and recreation values of Waldo Lake. The proposed rules prohibit new or increased permitted discharges and any other new discharges that would degrade the existing water quality or ecological or recreation values of Waldo Lake. Limited duration activities to respond to public health or safety emergencies, and for long term benefits, such as restoration or enhancement activities, are allowed. The proposed rule amendments may be found in Attachment A.

## Background: reasons for doing this rulemaking

On April 22, 2019, the Northwest Environmental Defense Center petitioned the Oregon Environmental Quality Commission to adopt rules designating Waldo Lake and its associated wetlands as Outstanding Resource Waters of Oregon. The petition also proposed that the commission adopt a policy to protect the current high water quality and exceptional ecological values of Waldo Lake. In July 2019, the commission granted the petition and directed DEQ to initiate the requested rulemaking. The commission also directed DEQ to pursue rulemaking to designate Crater Lake an Outstanding Resource Water. The commission will consider the proposal for Crater Lake as a separate agenda item.

Outstanding Resource Waters are high quality waters that have extraordinary or unique character or ecological or recreational value, or are critical habitat areas, such that they constitute an outstanding state or national resource. The state has the discretion and authority to designate Outstanding Resource Waters. Once designated, the special water quality and ecological values of these waters must then be protected in accordance with Oregon’s antidegradation policy [OAR 340-041-0004(8)] and federal regulations under the Clean Water Act.

Waldo Lake is located in Lane County, Oregon, high in the Cascade Mountains. It is remote and has exceptionally high water quality. Waldo Lake is classified as an ultra-oligotrophic lake. This means the lake has outstanding water clarity and low productivity, or biological growth, due to low nutrient concentrations. The Waldo Lake watershed is entirely on public land in the Willamette National Forest. A large portion of the watershed is managed as wilderness and semi-primitive non-motorized dispersed recreation. There are also three developed campgrounds and one horse camping facility near the lake. Waldo Lake is the headwater of the North Fork of the Middle Fork Willamette River, which is a federal Wild and Scenic River. Protecting Waldo Lake will also help protect the quality of water in this river. Additional information on the lake,

including water quality data, may be found in the *Waldo Lake Outstanding Resource Water Support Document* (See Attachment B2).

### **How this rulemaking addresses the reasons for doing the rulemaking**

The rulemaking designates Waldo Lake an Outstanding Resource Water and establishes a policy in Oregon's water quality standards that the existing high water quality and ecological values of Waldo Lake shall be protected from degradation. The rule prohibits new or increased permitted discharges, with a short term exception for construction stormwater permits where needed for restoration or facility maintenance and improvements. The rules also states that any other new discharge is prohibited if such discharge would degrade the water quality or ecological or recreation values of Waldo Lake. Limited duration activities to respond to public health or safety emergencies, and for long term benefits, such as restoration or enhancement activities, are allowed. The Outstanding Resource Water status is expected to support the management goals of the U.S. Forest Service to protect the lake's water quality through its watershed and recreation management and lake monitoring programs.

### **Key policy and technical issues**

1. A key policy issue is how the rule language should address the need to balance public access to Waldo Lake for recreation and tourism with protecting the lake's high water quality and ecological values, and how to make the intended balance of these values clear in the rule. DEQ's proposed rule language is intended to recognize that current levels of recreation and tourism activity are part of the baseline and co-exist with the existing high water quality. Therefore, the proposed policy goal is to prevent degradation from the current water quality state due to additional activity or development. It is not DEQ's intent to reduce or remove recreation and tourism activity, which is also an exceptional value of the lake. Protecting the water quality of the lake will ensure that the exceptional recreational opportunities will persist through time.

The citizen petition for Waldo Lake proposed rule language, which was published for public comment. DEQ has revised that language in response to public comment, for clarity and for consistency between the ORW rules for Crater Lake and Waldo Lake.

The proposed rule establishes the policy goal and prohibits discharges permitted by DEQ under the Clean Water Act, with an exception for short term construction stormwater permits as necessary for operation and maintenance of facilities. The U.S. Forest Service manages activities on the lake and in the watershed to meet water quality standards, including the Outstanding Resource Water rule.

2. A key technical issue is whether Waldo Lake qualifies for the Outstanding Resource Water designation. DEQ concludes that it does. Waldo Lake is exceptionally clear and pristine, and stands out among other lakes in the state and in the region for its exceptional water quality and ecological values. In addition the lake provides unique opportunities for research and outdoor recreation. Supporting information for these conclusions is provided in the support document *Waldo Lake Outstanding Resource Water Support Document* (See Attachment B2).

3. A final key technical issue is how to determine whether activities managed by the Forest Service would be expected to cause a new or increased discharge that would degrade water

quality. The proposed ORW policy states the water quality goal, and the Forest Service, as the land manager, would use data and professional judgment to make such determinations through their management planning processes. In some cases it can be difficult to differentiate whether a water quality change is the result of a new or increased discharge as opposed to another influence, such as climate change, wildfire or atmospheric deposition. This challenge requires data and professional judgement, which is best evaluated by the federal land managers and their professional staff in cooperation with DEQ and other federal and state agencies or researchers who also have relevant expertise.

Related to this issue, is the understanding that some processes, such as climate change, wildfires, and atmospheric deposition may result from a combination of natural processes and distant human actions that are beyond the control of the forest service or the state. Therefore, while the proposed rule establishes a protective goal for Waldo Lake, DEQ also recognizes that neither the USFS nor the state alone can prevent changes to the lake that may result from these more global processes or a combination of these processes and natural processes.

### **Affected parties**

These rules may affect the U.S. Forest Service as the lake and watershed manager, recreation users and tourists, environmental Non-Governmental Organizations interested in maintaining the lake's pristine character, researchers, and businesses that provide recreation and tourism services to people visiting the lake.

### **Outreach efforts and public and stakeholder involvement**

DEQ formed a stakeholder advisory committee to review the fiscal impact statement and provide early input on the rule language options. Committee members provided information that DEQ used to draft the fiscal impact statement. Then DEQ met with the committee twice for discussion and input on draft materials. More information on the stakeholder advisory committee may be found under the sections on the advisory committee and the fiscal impact statement below.

DEQ offered to share information with Oregon tribes and discuss their support or concerns. No Tribes requested a meeting or additional information.

### **Brief summary of fiscal impact**

DEQ concluded that the proposed rules will not cause any negative fiscal or economic impact to businesses. Because the rules will help to protect the lake qualities that attract recreation users and tourists, they will also support businesses that provide recreation and tourism services. The tourism industry is a significant contributor to the local economy near Waldo Lake.

The rules are consistent with the management goals of the U.S. Forest Service. However, to the extent additional management measures or monitoring are needed to fully implement the ORW policy for Waldo Lake, it is possible additional resources will be needed.

# Statement of Need

## **What need would the proposed rule address?**

The proposed rule amendments respond to a rulemaking petition to designate Waldo Lake an Outstanding Resource Water. The rules also implement the state's outstanding resource water policy and address the need to protect the exceptional water quality of Waldo Lake.

## **How would the proposed rule address the need?**

The rules address the need by designating Waldo Lake an Outstanding Resource Water and adopting a policy to protect the existing water quality of the lakes in Oregon's water quality standards rules. The policy will be implemented by the U.S. Forest Service, which manages the lake and its watershed.

## **How will DEQ know the rule addressed the need?**

DEQ will know the rule addressed the need if the U.S. Forest Service manages Waldo Lake to protect its high water quality, and if water quality data demonstrates that the lake is maintaining its current baseline quality and not degrading due to activities within the U.S. Forest Service's control.

# Rules Affected, Authorities, Supporting Documents

## Lead division

Water Quality

## Program or activity

Water Quality Standards

## Chapter 340 action

Amend		
340-041-0004	340-041-0185	340-041-0345

Statutory Authority - ORS			
468.020	468B.030	468B.035	468B.048

Statutes Implemented - ORS		
468B.030	468B.035	468B.048

## Documents relied on for rulemaking

Document title	Document location
Petition to Designate Waldo Lake an Outstanding Resource Water	<a href="https://www.oregon.gov/deq/FilterDocs/orwo/WaldoPet.pdf">https://www.oregon.gov/deq/FilterDocs/orwo/WaldoPet.pdf</a>
Waldo Lake ORW Support Document	<a href="https://www.oregon.gov/deq/Regulations/rulemaking/Pages/rwaldoorw2020.aspx">https://www.oregon.gov/deq/Regulations/rulemaking/Pages/rwaldoorw2020.aspx</a>

# Fee Analysis

This rulemaking does not involve fees.

# Statement of Fiscal and Economic Impact

## Fiscal and Economic Impact

### Waldo Lake

DEQ expects that the proposed rules, by protecting the current water quality in Waldo Lake, are likely to have no negative fiscal impact to agencies, businesses, or the public. While adopting the proposed rules is unlikely to significantly change the number of visitors to the lake, it would support existing revenue associated with recreation and tourism.

The Willamette National Forest Land and Resource Management Plan has defined recreation objectives for Waldo Lake. Waldo Lake is an extremely popular destination for recreation in the region. There are an estimated 44,725 visitors to the Waldo Lake area per year. Most of Waldo Lake's shoreline has dispersed recreation that is semi-primitive and non-motorized. Waldo Lake's three developed campgrounds (North Waldo, Islet, and Shadow Bay) which have over 200 developed sites, are usually open starting in June or July. Typically the campgrounds are full in August and September. There are approximately 29,725 overnight campers estimated to use these three campgrounds per year.

Waldo Lake is partially surrounded by forest designated as Wilderness Area, which means no logging, development, agricultural activity, or grazing is allowed in this part of the watershed. Wilderness Area designation prohibits commercial enterprises, road development, and use of motorized vehicles or motorboats. Boats with internal combustion engines are currently prohibited on the lake.

Management goals under the USDA Forest Service's management plan for the lake include conserving the lake's unique geographical, topographical, biological, and ecological processes. The U.S. Forest Service goals for Waldo Lake management are consistent with the proposed Outstanding Resource Water designation.

The proposed rules are not expected to reduce regional revenue, and may positively effect the revenue if the recreation in the area is maintained or increases due to the ORW designation and by maintaining the current high water quality.

## Statement of Cost of Compliance

There is no expected cost of compliance with the rules because there are no current activities around Waldo Lake that do not currently comply with the rules.

## State and Federal agencies

### DEQ

There are no expected direct impacts to DEQ. The rules prevent new or increased wastewater discharges or regulated activities that would degrade the water quality of Waldo Lake and its associated wetlands from its current condition. Therefore, there should be no

need to develop permits, 401 certifications, or Total Daily Maximum Loads for these waterbodies.

### **U.S. Forest Service**

DEQ does not expect any direct fiscal impacts to the Willamette National Forest as a result of the proposed rules. The current management goals for Waldo Lake are consistent with the proposed designation. However, if additional lake management plans or additional monitoring are needed to implement the goals, these actions may have associated costs. The possible costs are unknown with available information.

## **Local governments**

### **Direct Impacts**

DEQ does not expect a direct fiscal impact to local governments as a result of this rule.

### **Indirect Impacts**

DEQ does not expect an indirect fiscal impact to local governments as a result of this rule. Rather, the rules are expected to support revenue related to recreation and tourism.

## **Public**

### **Direct Impacts**

DEQ does not expect a direct fiscal impact to the public as a result of this rule.

### **Indirect Impacts**

DEQ does not expect indirect fiscal impacts to the public as a result of this rule.

## **Large businesses - businesses with more than 50 employees**

### **Direct Impacts**

DEQ does not anticipate fiscal impacts to any large businesses as a result of the rule.

### **Indirect Impacts**

DEQ does not anticipate indirect impacts to any large businesses as a result of the rule.

## **Small businesses – businesses with 50 or fewer employees**

### **Direct Impacts**

DEQ does not expect that the proposed rule would directly impact small businesses.

### **Indirect Impacts**

The proposed rules may provide indirect benefits to businesses relying on revenue from recreational users and tourists in the area. Businesses may include: local hotels, gas stations, restaurants, campgrounds, grocery stores, camping supply stores, recreation related stores, and others that benefit from tourism and recreation. DEQ is unable to quantify such impacts with available information. But personal communication with the rulemaking advisory

committee does indicate that the rules may support benefits associated with recreation, including at least six small businesses located near Waldo Lake, specifically in the Crescent Lake area, Gilchrist, and Crescent. The businesses include a sporting goods center, a tavern, two restaurants, a grocery store, and a gas station. Local businesses involving lodging and overnight accommodations are also expected to benefit.

In addition, DEQ expects that the proposed rules will indirectly benefit groups that research the cultural and natural resources of Waldo Lake.

**1. Estimated number of small businesses and types of businesses and industries with small businesses subject to proposed rule.**

The proposed rules would not subject any small businesses operating in either area to meet new requirements.

**2. Projected reporting, recordkeeping and other administrative activities, including costs of professional services, required for small businesses to comply with the proposed rule.**

No additional activities are required to comply with the proposed rules.

**3. Projected equipment, supplies, labor and increased administration required for small businesses to comply with the proposed rule.**

No additional resources are required for compliance with the proposed rules.

**4. Describe how DEQ involved small businesses in developing this proposed rule.**

DEQ expects that the proposed rules will not negatively affect small businesses. Lynda Kamerrer, President of the Oakridge and Westfir Chamber of Commerce, provided information on small businesses in the Waldo Lake area. Jim Chadderton, the Executive Director of Discover Klamath, provided names of small businesses that may benefit from sustained or increased tourism in the area of Waldo Lake as a result of the proposed rule. These small businesses include: Odell Sportsman Center, Manley’s, The Café, Gilchrist Grocer and Deli, Mohawk Restaurant, and Crescent Shell. In addition, DEQ believes that businesses associated with lodging and accommodation may also benefit from increased tourism.

**Documents relied on for fiscal and economic impact**

Document title	Document location
U.S. Forest Service, Willamette National Forest. 2007. Decision notice and finding of no significant impact managing recreation use on Waldo Lake environmental assessment. Forest Plan Amendment No. 47.	<a href="#">Waldo Lake Environmental Assessment</a>
U.S. Forest Service, Pacific Northwest Region. 1990. Land and	<a href="#">Land and Resource Management Plan: Willamette National Forest</a>

resource management plan: Willamette National Forest.	
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## Advisory committee fiscal review

DEQ appointed an advisory committee.

As ORS 183.33 requires, DEQ asked for the committee's recommendations on:

- Whether the proposed rules would have a fiscal impact
- The extent of the impact
- Whether the proposed rules would have a significant adverse impact on small businesses; if so, then how DEQ can comply with ORS 183.540 reduce that impact

The committee reviewed the draft fiscal and economic impact statement. Its findings are available in the committee minutes on this rulemaking's web page: [Waldo and Crater Lakes ORW](#). Committee members provided DEQ with information about visitation and the contribution of recreation and tourism to local economies in the Waldo Lake area. They also identified the types of small businesses, with specific examples, that serve recreation users and tourists and should benefit from the protection of the exceptional qualities of Waldo Lake that attract tourists.

The committee determined the proposed rules would not have a negative impact on small businesses around Waldo Lake. Furthermore, the committee suggested there could be a positive impact on businesses associated with recreation and tourism in the Waldo Lake area.

## Housing cost

As ORS 183.534 requires, DEQ evaluated whether the proposed rules would have an effect on the development cost of a 6,000-square-foot parcel and construction of a 1,200-square-foot detached, single-family dwelling on that parcel.

DEQ determined the proposed rules would have no effect on development costs. Waldo Lake is on federal lands managed by the U.S. Forest Service. Residential and business development is not underway and is not a goal of the management plan for the lake. In addition, the proposed rules are not expected to significantly impact development in the surrounding areas. Visitation to the lakes is primarily driven by the recreation, natural beauty and research opportunities that currently exist.

# Federal Relationship

## Relationship to federal requirements

ORS 183.332, 468A.327 and OAR 340-011-0029 require DEQ to attempt to adopt rules that correspond with existing equivalent federal laws and rules unless there are reasons not to do so.

Federal regulations under the Clean Water Act require that waters constituting outstanding National resources, should be designated as Outstanding Resource Waters. The federal regulations suggest states should prioritize waters of national and state parks and wildlife refuges and waters of exceptional recreational or ecological significance for consideration. Oregon has corresponding state regulations at OAR 340-041-0004 (8) regarding designation of state waters as Outstanding Resource Waters. DEQ has concluded that Waldo Lake is an outstanding national resource due to its unique water quality, extreme clarity, and exceptional recreational and ecological significance. This proposal is consistent with federal requirements under the Clean Water Act.

# Land Use

## Considerations

In adopting new or amended rules, ORS 197.180 and OAR 340-018-0070 require DEQ to determine whether the proposed rules significantly affect land use. If so, DEQ must explain how the proposed rules comply with state wide land-use planning goals and local acknowledged comprehensive plans.

Under OAR 660-030-0005 and OAR 340 Division 18, DEQ considers that rules affect land use if:

- The statewide land use planning goals specifically refer to the rule or program, or
- The rule or program is reasonably expected to have significant effects on:
  - Resources, objects, or areas identified in the statewide planning goals, or
  - Present or future land uses identified in acknowledge comprehensive plans

DEQ determined whether the proposed rules involve programs or actions that affect land use by reviewing its Statewide Agency Coordination plan. The plan describes the programs that DEQ determined significantly affect land use. DEQ considers that its programs specifically relate to the following statewide goals:

<b>Goal</b>	<b>Title</b>
5	Natural Resources, Scenic and Historic Areas, and Open Spaces
6	Air, Water and Land Resources Quality
11	Public Facilities and Services
16	Estuarine Resources
19	Ocean Resources

Statewide goals also specifically reference the following DEQ programs:

- Nonpoint source discharge water quality program – Goal 16
- Water quality and sewage disposal systems – Goal 16
- Water quality permits and oil spill regulations – Goal 19

## Determination

DEQ determined that these proposed rules do not affect land use under OAR 340-018-0030 or DEQ’s State Agency Coordination Program.

## **EQC Prior Involvement**

The EQC was first involved in this issue in April 2019 when it received a rulemaking petition from National Environmental Defense Council requesting that they designate Waldo Lake an Outstanding Resource Water. In July 2019, EQC directed DEQ to conduct rulemaking in response the petition and a staff recommendation to also include Crater Lake in the rulemaking.

DEQ provided a status update to EQC through a director's report at the July 2020 meeting.

# Advisory Committee

## Background

DEQ convened the Waldo and Crater Lake Outstanding Resource Waters Advisory Committee. The committee's purpose was to provide information for and review of the fiscal impact statement, and to provide early input on rule language options and the Waldo and Crater lakes support documents.

The committee membership, shown in the table below, included representatives from the Forest Service, National Park Service, DEQ, environmental and recreational organizations, local government, and the public, and the committee met two times. The committee's web page is located at: [Waldo and Crater Lakes ORW](#).

Waldo and Crater Lakes ORW Advisory Committee	
Name	Representing
Rich Miller	PSU Center for Lakes and Reservoirs
Andy Schaedel	Oregon Lakes Assn.
Mark Riskedahl	Northwest Environmental Defense Center
Lynda Kamerrer, President	Oakridge / Westfir Area Chamber of Commerce
Kelly Minty Morris, Commissioner	Klamath County Commission
Agency Advisors	
Al Johnson	Willamette National Forest
Jennifer Gibson	Crater Lake National Park
Scott Girdner	Crater Lake National Park
Randy Jones	DEQ

## Meeting notifications

To notify people about the advisory committee's activities, DEQ:

- Sent GovDelivery bulletins, to the following lists:
  - Water Quality Standards
  - Rulemaking
- Posted meeting information and materials on the web page for this rulemaking
- Added advisory committee announcements to DEQ's calendar of public meetings at [DEQ Calendar](#).

## **Committee discussions**

In addition to the information included and conclusions described in the Statement of Fiscal and Economic Impact section above, the committee discussed the qualifications of the lakes for Outstanding Resource Water designation and rule language options. Presentations were given on the unique water quality characteristics of both lakes to explain the justification and rationale for considering the designation. Committee members agreed that the lakes are unique ecologically and provide excellent recreational opportunities for visitors and should be granted the designation. The committee discussed three rulemaking language options. DEQ explained the rulemaking language and committee members shared their questions, perspectives and preferences. For additional information on advisory committee presentations and meeting minutes, see the advisory committee section of the rulemaking page: [Waldo and Crater Lakes ORW](#).

# Public Engagement

## Public notice

DEQ provided notice of the proposed rulemaking and rulemaking hearing by:

- On July 15, 2020, filing notice with the Oregon Secretary of State for publication in the Aug. 1, 2020 Oregon Bulletin
- Posting the Notice, Invitation to Comment and Draft Rules on the web page for this rulemaking, located at: [Waldo and Crater Lakes ORW](#)
- Emailing interested parties on the following DEQ lists through GovDelivery
  - Rulemaking
  - Water quality standards
- Emailing the following key legislators required under [ORS 183.335](#)
  - Senator Jeff Golden, Chair, Senate Environment and Natural Resources Committee
  - Senator Alan Olsen, Vice-Chair, Senate Environment and Natural Resources Committee
  - Representative Ken Helm, Chair, House Water Committee
  - Representative Gary Leif, Vice-Chair, House Water Committee
  - Representative Jeff Reardon, Vice-Chair, House Water Committee
- Emailing advisory committee members,
- Posting on the DEQ event calendar: [DEQ Calendar](#)
- Publishing notice in the following newspaper:
  - Klamath Herald & News (Klamath Falls)

## How to comment on this rulemaking proposal

DEQ asked for public comment on the proposed rules. Anyone could submit comments and questions about this rulemaking. A person could submit comments through an online web page, by U.S. mail or at the public hearing.

## Comment deadline

DEQ only considered comments on the proposed rules that DEQ receives by 4 p.m., on Aug. 28, 2020.

## Submit comment online

Any person could submit a written comment at this web page:

[Waldo and Crater Lakes ORW](#)

## Note for public university students:

ORS 192.345(29) allows Oregon public university and OHSU students to protect their university email addresses from disclosure under Oregon's public records law. If you are an Oregon public university or OHSU student you may omit your email address when you submit a comment.

**By mail**

Oregon DEQ  
Attn: Debra Sturdevant  
700 NE Multnomah St., Room 600  
Portland, OR 97232-4100

**At hearing**

Aug. 18, 2020

**Public Hearing**

DEQ held one public hearing. The hearing was online and by teleconference only.

Date: Aug. 18, 2020

Start time: 3 p.m.

Instructions on how to join the webinar or teleconference: [Webinar instructions](#)

Click on this link to join online: [Zoom Meeting](#)

Meeting ID: 962 5269 9042

Meeting Password: 975644

Teleconference number: 888 475 4499

Meeting ID: 962 5269 9042

DEQ considered all comments and testimony received before the comment deadline. DEQ will summarize all comments and respond to comments in the Environmental Quality Commission staff report.

## Public Hearing

DEQ held one public hearing. Three people provided verbal comments at the hearing. Later sections of this document include a summary of the 730 comments received during the open public comment period, DEQ's responses, and a list of the commenters. Original comments are on file with DEQ.

## Presiding Officers' Record

### Hearing 1

Date	Aug. 18, 2020
Place	On-line, Zoom
Start Time	3 p.m.
End Time	3:47 p.m.
Presiding Officer	Michele Martin

### Presiding Officer's Report

The presiding officer convened the hearing, summarized procedures for the hearing, and explained that DEQ was recording the hearing. Debra Sturdevant gave an informational presentation and answered questions.

The presiding officer asked people who wanted to present verbal comments to sign up through the chat box, or if attending by phone, to indicate their intent to present comments. The presiding officer advised all attending parties interested in receiving future information about the rulemaking to sign up for GovDelivery email notices.

As Oregon Administrative Rule 137-001-0030 requires, the presiding officer summarized the content of the rulemaking notice.

Seventeen people attended by webinar. Three people commented orally and no one submitted written comments at the hearing.

## **Summary of Public Comments and DEQ Responses**

DEQ accepted public comment on the proposed rulemaking from July 15, 2020 until 4 p.m. on Aug. 28, 2020. DEQ received comments from 730 separate individuals or groups by the close of the comment period. Some of the individuals sent comments on behalf of multiple organizations. There were three individuals who provided both written and oral testimony. The majority of commenters (92%, or 673 comments) signed one of the two form letters of support. An indexed list of commenters, the organizations they represented if any, and the method through which DEQ received their input is included in Attachment C.

All commenters except one expressed support for designating Waldo and/or Crater Lake as Outstanding Resource Waters and for adopting the associated policies to ensure that the outstanding values and quality of these waters are maintained. Two commenters expressed support with suggested revisions to the rule language. Five commenters expressed support for the designation while also mentioning specific concerns they had about recreational user impacts and management of both lakes. The commenter representing the Oregon Farm Bureau Federation, Oregonians for Food and Shelter, and Oregon Forest and Industries Council, was neutral on the Crater Lake and Waldo Lake designations, but expressed concerns regarding the screening process for ORW designation, and whether water quality values were clearly stated. The specific reasons are discussed below in the summary of significant public comments.

The public comments received by the close of the public comment period are summarized below, followed by DEQ's responses. The comments are organized into four topic areas:

### **Topic 1. Comments in Support of ORW designation**

### **Topic 2. Comments in Opposition of ORW designation**

### **Topic 3. Comments Requesting Revisions to the Rule Language**

### **Topic 4. Additional Comments**

The summary includes cross references to the commenter number from the table of commenters in Attachment C. Original comments are on file with DEQ.

## **Topic 1: General Comments in Support of ORW Designation**

### **a. General statements of support**

DEQ received 729 comments supporting the ORW designations. Commenters expressed support for designating Waldo Lake (14 comments), Crater Lake (1 comment), or both lakes (715 comments) as Outstanding Resource Waters and for adopting the associated policies ensuring that the outstanding value and quality of these waters are maintained. The following reasons were commonly cited by those in support of the designation:

- The importance of protecting water quality for future generations (approximately 386 commenters for both lakes; 2 commenters for Waldo Lake).
- The importance and need to have wise stewardship of lake water quality (approximately 382 commenters for both lakes; 1 commenter for Waldo Lake).
- Protection is needed to maintain critical habitat areas (approximately 356 commenters for both lakes).

- The pristine nature and high quality of these waters as resources (approximately 718 commenters for both lakes; 9 commenters for Waldo Lake).
- The importance of both lakes for recreational use including camping, hiking, biking, swimming, and paddling (approximately 689 commenters for both lakes; 3 commenters for Waldo Lake).
- Steps have already been taken to protect Waldo Lake from pollution from motorized boats, float planes, and fish stocking (approximately 9 commenters).

**DEQ Response:** DEQ appreciates the large number of people who submitted comments in support of designating Waldo Lake and Crater Lake as Outstanding Resource Waters. DEQ agrees that both lakes qualify for ORW designation and that the outstanding values, including water clarity, low productivity, habitat for aquatic species, and recreational opportunities, should be protected.

**b. Sent form letters**

Many commenters, 92%, submitted form emails to DEQ, all in support of the ORW designation. There were two form letters submitted from a website called ‘every action custom’ although their affiliation was not identified.

- i. Form letter one: 371 commenters submitted a form letter in support of the ORW designation stating that the designation would extend stronger environmental protections to water quality, ecological values, and critical habitat areas. These commenters mentioned the characteristic deep blue color that dramatically enhances the scenic and recreational value of Waldo Lake and the importance of recreation in the Waldo Lake area.
- ii. Form letter two: 302 commenters submitted a form letter in support of the ORW designation stating the designation would establish policies that reduce pollution to ensure the health and protection of Waldo and Crater Lakes’ high quality waters. These commenters mentioned the importance of protecting the water quality of both lakes for research and recreation.

**DEQ Response:** DEQ appreciates the large number of comments in support of the proposed rule.

**Topic 2: Comments in Opposition of ORW Designation**

DEQ received no comments opposing the ORW designations. One commenter was neutral.

**Topic 3. Comments Requesting Revisions to the Waldo Lake ORW Rule Language**

DEQ received comments in support of the ORW designation but with revisions to the rule language from the U.S. Environmental Protection Agency (commenter 452) the U.S. Forest Service (commenter 468).

**a. General comments on Waldo Lake rule language**

Willamette National Forest Supervisor David Warnack expressed support for the ORW designation for Waldo Lake, with suggested modifications to the rule language. The Forest

Service proposed several changes to the rule language, which are included in the specific comments below.

**DEQ Response:** DEQ appreciates the support of the Willamette National Forest for the ORW designation. We also appreciate the specific comments to ensure that the rules are consistent with the Forest Service management goals for Waldo Lake and to clarify the provision regarding exceptions for restoration projects and emergency actions.

**b. Specific comments on the proposed rule language at OAR 340-041-0345(7)(d):**

*(7) Outstanding Resource Waters of Oregon (ORWs)*

...

*(d) No new NPDES discharge or expansion of an existing discharge to waters upstream of or tributary to Waldo Lake or its associated wetlands shall be allowed if such discharge would ~~significantly~~ degrade the water quality within these waters, except construction stormwater permits for limited duration projects.*

EPA recommends deleting the word “significantly” from subsection (d). EPA interprets the federal ONRW policy to mean that no new or increased discharges to ONRWs or to waters upstream or tributary to an ONRW are allowed if they would result in lower water quality in the designated waterbody. The federal policy does not provide an allowance for long term or permanent lowering of water quality, even if insignificant/*de minimis*, where there is an ONRW level of protection (63 FR 36,785-87 and EPA’s Water Quality Standards Handbook, section 4.7). The only exception is for “temporary” and “short term” lowering of water quality.

**DEQ Response:** DEQ will remove the word “significantly” from subsection (d).

For clarity about the ability to allow temporary or short term lowering of water quality, DEQ adds an exception to the prohibition on new NPDES permits so that DEQ may issue a construction stormwater permit for limited duration projects when necessary. This exception is also included in the proposed rule for Crater Lake. See DEQ’s response to Comment 4 above.

**c. Specific comments on the proposed rule language at OAR 340-041-0345(7)(e):**

*(7) Outstanding Resource Waters of Oregon (ORWs)*

...

*(e) Activities in and on Waldo Lake and in the watershed shall be managed to protect and maintain the existing water quality of Waldo Lake, except:*

*(i) As needed to respond to public health and welfare emergencies. Impacts of the response should be mitigated/rehabilitated if necessary.*

*(ii) When short term impacts are necessary to obtain long-term restoration or water quality improvements.*

The Forest Service suggests replacing the proposed language in subsection (e) with the alternative language shown above. This would allow for the implementation of restoration projects that would achieve long-term benefits, provide new and continuing recreation

opportunities that would not degrade water quality, and allow for emergency actions such as wildfire suppression.

**DEQ Response:** DEQ agrees that revisions are needed to the language proposed for public comment in subsection (e). First, the ORW rule is not intended to reduce or remove recreation activity, but rather to prevent degradation from the existing high water quality conditions. Recreation is one of the exceptional values of Waldo Lake and is part of the baseline of the existing condition. This issue did not arise for the NF Smith River because there is no road access and the level of recreation activity is very limited.

Second, non-permitted recreation activities are not regulated by DEQ. The Forest Service is the manager of the lake and the watershed. Therefore, the proposed language more clearly regulates discharges rather than the activities themselves. It is the role of the Forest Service to manage recreation and other activities in a manner that does not degrade water quality.

Third, the ORW rules for Waldo Lake and Crater Lake should be consistent. If the language for the Waldo Lake and Crater Lake rules differ from each other, that could create uncertainty about whether the meaning was intended to be different as well. In this case the meaning of the two rules is intended to be the same. The revised proposed language for Waldo Lake and the Crater Lake make the two rules consistent with each other.

The Forest Service also suggests adding provisions to paragraphs (i) and (ii) regarding short term exceptions. The exceptions are currently included in the ORW policy at OAR 40-041-0004(8). However, DEQ finds that it is clearer to include the exceptions in the specific Waldo Lake ORW rule rather than rely on the language at OAR 40-041-0004(8). In addition, the forest service added a statement that the impacts of an emergency response should be mitigated or rehabilitated if necessary. DEQ appreciates this addition, which furthers the goal to protect and/or restore the lake.

DEQ proposes the following revised rule language to subsection (e), now subsection (a)(C):

(C) Any other new discharge to Waldo Lake is prohibited if such discharge would degrade the water quality or ecological or recreation values of Waldo Lake, except in the following circumstances:

(i) As needed to respond to a public health or safety emergency, including but not limited to wildfire response. The water quality impacts from such responses shall be short term and will be mitigated to the extent practicable.

(ii) As needed in connection with ecological restoration or water quality improvement activities where short term water quality impacts are necessary to obtain long-term restoration or water quality improvements..

#### **Topic 4. Additional Comments**

DEQ received three additional comments from six commenters (commenters 6, 220, 451, 491, 502, 671).

##### **a. Comments relating to recreational user impacts, including human waste and introduction of non-native (invasive) species**

Four commenters noted that specific management practices and protections need to be enacted to address impacts from recreational users, including how to deal with human waste (commenters 220, 451, and 671), allowing dogs into the water (commenter 220), and accidental introduction of non-native (invasive) species (commenters 220, 451, and 491).

Two commenters noted that people who are not recreating in developed campgrounds around Waldo Lake should be required to pack out their human waste by using blue bags, as mountain climbers do, or portable river toilets, as river rafters do, because human waste can impact water quality through nutrient pollution (commenters 451 and 671).

**DEQ Response:** DEQ appreciates the comments related to the importance of addressing recreational user impacts, including human waste and the introduction of non-native species when managing recreation and monitoring water quality around Waldo Lake and Crater Lake. The proposed ORW rule does not specify management practices. Rather, the rule establishes the water quality standard to protect current water quality and avoid degradation. DEQ will forward these concerns to the Forest Service and the National Park Service, the agencies that manage the lakes and their watersheds.

##### **b. Lack of required Screening Process for ORW Designation**

One commenter stated that DEQ did not utilize the screening process required by OAR 340-041-0004(8)(a) in recommending that Waldo and Crater Lakes be designated as ORWs (commenter 502).

**DEQ Response:** DEQ acknowledges that Oregon rules related to ORW designation require DEQ to develop and use a screening process to nominate waterbodies for ORW designation under OAR 340-041-0004(8). The Oregon Department of Justice has advised the EQC that the screening and nomination process was not required prior to designating an ORW if the proposed rule was in response to a citizen rulemaking petition. Furthermore, both lakes belong to a priority category for ORW designation already identified in the ORW rule at OAR 340-041-0004(8)(a). Specifically, Crater Lake qualifies because it is in a National Park [OAR 340-041-0004(8)(a)(A)]. Waldo Lake qualifies because it is a state scenic waterway [OAR 340-041-0004(8)(a)(C)], the headwaters of a National Wild and Scenic River [OAR 340-041-0004(8)(a)(B)], and is partially surrounded by federally designated wilderness area [OAR 340-041-0004(8)(a)(E)].

##### **c. DEQ has not indicated the water quality values to be protected**

One commenter noted that DEQ has not indicated the water quality values to be protected, as required in OAR 340-041-0004(8)(c) (commenter 502).

**DEQ Response:** The rules state that the current high water quality, exceptional ecological values, and existing and designated uses, which include recreational activity, shall be

protected. Data included in the support document and additional data that the Forest Service has collected provide baseline existing water quality conditions. The outstanding resource values to be protected include: 1) the outstanding clarity and color, the low productivity and oligotrophic status of the lake, and the pristine existing water quality; 2) the ecological value that includes habitat for endemic species, and 3) the exceptional recreational opportunities.

# Implementation

## Notification

The proposed rules would become effective upon filing on approximately Jan. 25, 2021.

DEQ would notify affected parties by:

- Email to the Willamette National Forest from DEQ staff.

## Compliance and enforcement

Affected parties –Willamette National Forest

DEQ staff – Office of Compliance and Enforcement

# Five-Year Review

## Requirement

Oregon law requires DEQ to review new rules within five years after EQC adopts them. The law also exempts some rules from review. DEQ determined whether the rules described in this report are subject to the five-year review. DEQ based its analysis on the law in effect when EQC adopted these rules.

## Exemption from five-year rule review

The Administrative Procedures Act exempts all of the proposed rules from the five-year review because the proposed rules would:

- Amend or repeal an existing rule. ORS 183.405(4).

# Accessibility Information

You may review copies of all documents referenced in this announcement at:  
Oregon Department of Environmental Quality  
700 NE Multnomah St., Suite 600  
Portland, OR 97232

To schedule a review of all websites and documents referenced in this announcement, call Debra Sturdevant in Portland at 800-452-4011, ext. 5622 toll-free in Oregon.

DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email [deqinfo@deq.state.or.us](mailto:deqinfo@deq.state.or.us).

# Draft Rules – Edits Highlighted

## Key to Identifying Changed Text:

~~Strikethrough: Deleted Text~~

Underline: New/inserted text

*NOTE: The proposed rule amendment designates Waldo and Crater Lakes as Outstanding Resource Waters of Oregon*

### **340-041-0004 Antidegradation**

(1) Purpose. The purpose of the Antidegradation Policy is to guide decisions that affect water quality to prevent unnecessary further degradation from new or increased point and nonpoint sources of pollution, and to protect, maintain, and enhance existing surface water quality to ensure the full protection of all existing beneficial uses. The standards and policies set forth in OAR 340-041-0007 through 340-041-0350 supplement the Antidegradation Policy.

(2) Growth Policy. In order to maintain the quality of waters in the State of Oregon, it is the commission's general policy to require that more efficient and effective waste treatment and control accommodate growth and development such that measurable future discharged waste loads from existing sources do not exceed presently allowed discharged loads except as provided in section (3) through (9) of this rule.

(3) Nondegradation Discharges. The following new or increased discharges are subject to this division. However, because they are not considered degradation of water quality, they are not required to undergo an antidegradation review under this rule:

(a) Discharges Into Existing Mixing Zones. Pollutants discharged into the portion of a water body that has been included in a previous mixing zone for a permitted source, including the zones of initial dilution, are not considered a reduction in water quality, so long as the mixing zone is established in accordance with OAR 340-041-0053, there are no other overlapping mixing zones from other point sources, and the discharger complies with all effluent limits set out in its National Pollutant Discharge Elimination System (NPDES) permit.

(b) Water Conservation Activities. An increase in a pollutant concentration is not considered a reduction in water quality so long as the increase occurs as the result of a water conservation activity, the total mass load of the pollutant is not increased, and the concentration increase has no adverse effect on either beneficial uses or threatened or endangered species in the water body.

(c) Temperature. Insignificant temperature increases authorized under OAR 340-041-0028(11) and (12) are not considered a reduction in water quality.

(d) Dissolved Oxygen. Up to a 0.1 mg/l decrease in dissolved oxygen from the upstream end of a stream reach to the downstream end of the reach is not considered a reduction in water quality so long as it has no adverse effects on threatened and endangered species.

(4) Recurring Activities. Since the baseline for applying the antidegradation policy to an individual source is the water quality resulting from the source's currently authorized discharge, and since regularly-scheduled, recurring activities remain subject to water quality standards and the terms and conditions in any applicable federal and state permits, certifications and licenses, the following activities will not be considered new or increasing discharges and will therefore not trigger an antidegradation review under this rule, so long as they do not increase in frequency, intensity, duration or geographical extent:

(a) Rotating grazing pastures,

(b) Agricultural crop rotations, and

(c) Maintenance dredging.

(5) Exemptions to the Antidegradation Requirement. Some activities may, on a short term basis, cause temporary water quality degradation. However, these same activities may also have substantial and desirable environmental benefits. The following activities and situations fall into this category. Such activities and situations remain subject to water quality standards and must demonstrate that they have minimized adverse effects to threatened and endangered species in order to be exempt from the antidegradation review under this rule:

(a) Riparian Restoration Activities. Activities that are intended to restore the geomorphology or riparian vegetation of a water body, or control invasive species need not undergo an antidegradation review so long as the department determines that there is a net ecological benefit to the restoration activity. Reasonable measures that are consistent with the restoration objectives for the water body must be used to minimize the degradation;

(b) Emergency Situations. The director or a designee may, for a period of time no greater than 6 months, allow lower water quality without an antidegradation review under this rule in order to respond to public health and welfare emergencies (for example, a significant threat of loss of life, personal injury or severe property damage); and

(c) Exceptions. Exceptions authorized by the commission or department under (9) of this rule.

(6) High Quality Waters Policy: Where the existing water quality meets or exceeds those levels necessary to support fish, shellfish, and wildlife propagation, recreation in and on the water, and other designated beneficial uses, that level of water quality must be maintained and protected. However, the commission, after full satisfaction of the intergovernmental coordination and public participation provisions of the continuing planning process, and with full consideration of sections (2) and (9) of this rule, and 340-041-0007(4), may allow a lowering of water quality in these high quality waters if it finds:

- (a) No other reasonable alternatives exist except to lower water quality; and
  - (b) The action is necessary and benefits of the lowered water quality outweigh the environmental costs of the reduced water quality. This evaluation will be conducted in accordance with DEQ's "Antidegradation Policy Implementation Internal Management Directive for NPDES Permits and section 401 water quality certifications," pages 27, and 33-39 (March 2001) incorporated herein by reference;
  - (c) All water quality standards will be met and beneficial uses protected; and
  - (d) Federal threatened and endangered aquatic species will not be adversely affected.
- (7) Water Quality Limited Waters Policy: Water quality limited waters may not be further degraded except in accordance with paragraphs (9)(a)(B), (C) and (D) of this rule.
- (8) Outstanding Resource Waters Policy. Where existing high quality waters constitute an outstanding State or national resource such as those waters designated as extraordinary resource waters, or as critical habitat areas, the existing water quality and water quality values must be maintained and protected, and classified as "Outstanding Resource Waters of Oregon."
- (a) The commission may specially designate high quality water bodies to be classified as Outstanding Resource Waters in order to protect the water quality parameters that affect ecological integrity of critical habitat or special water quality values that are vital to the unique character of those water bodies. The department will develop a screening process and establish a list of nominated water bodies for Outstanding Resource Waters designation in the Biennial Water Quality Status Assessment Report (305(b) Report). The priority water bodies for nomination include:
    - (A) Those in State and National Parks;
    - (B) National Wild and Scenic Rivers;
    - (C) State Scenic Waterways;
    - (D) Those in State and National Wildlife Refuges; and
    - (E) Those in federally designated wilderness areas.
  - (b) The department will bring to the commission a list of water bodies that are proposed for designation as Outstanding Resource Waters at the time of each triennial Water Quality Standards Review; and
  - (c) When designating Outstanding Resource Waters, the commission may establish the water quality values to be protected and provide a process for determining what activities are allowed that would not affect the outstanding resource values. After the designation, the

commission may not allow activities that may lower water quality below the level established except on a short term basis to respond to public health and welfare emergencies, or to obtain long-term water quality improvements.

(d) The following are Outstanding Resource Waters of Oregon: ~~The North Fork Smith River and its tributaries and associated wetlands, South Coast Basin. See OAR 340-041-0305(4).~~

(A) The North Fork Smith River and its tributaries and associated wetlands, South Coast Basin. See OAR 340-041-0305(4).

(B) Waldo Lake and its associated wetlands, Willamette Basin. See OAR 340-041-0345(7)

(C) Crater Lake, Klamath Basin. See OAR 340-041-0185(6)

(9) Exceptions. The commission or department may grant exceptions to this rule so long as the following procedures are met:

(a) In allowing new or increased discharged loads, the commission or department must make the following findings:

(A) The new or increased discharged load will not cause water quality standards to be violated;

(B) The action is necessary and benefits of the lowered water quality outweigh the environmental costs of the reduced water quality. This evaluation will be conducted in accordance with DEQ's "Antidegradation Policy Implementation Internal Management Directive for NPDES Permits and section 401 water quality certifications," pages 27, and 33-39 (March 2001) incorporated herein by reference; and

(C) The new or increased discharged load will not unacceptably threaten or impair any recognized beneficial uses or adversely affect threatened or endangered species. In making this determination, the commission or department may rely on the presumption that, if the numeric criteria established to protect specific uses are met, the beneficial uses they were designed to protect are protected. In making this determination the commission or department may also evaluate other state and federal agency data that would provide information on potential impacts to beneficial uses for which the numeric criteria have not been set;

(D) The new or increased discharged load may not be granted if the receiving stream is classified as being water quality limited under sub-section (a) of the definition of "Water Quality Limited" in OAR 340-041-0002, unless:

(i) The pollutant parameters associated with the proposed discharge are unrelated either directly or indirectly to the parameter(s) causing the receiving stream to violate water quality standards and being designated water quality limited; or

(ii) Total maximum daily loads (TMDLs), waste load allocations (WLAs) load allocations (LAs), and the reserve capacity have been established for the water quality limited receiving stream, compliance plans under which enforcement action can be taken have been established, and there will be sufficient reserve capacity to assimilate the increased load under the established TMDL at the time of discharge; or

(iii) Effective July 1, 1996, in water bodies designated water-quality limited for dissolved oxygen, when establishing WLAs under a TMDL for water bodies meeting the conditions defined in this rule, the department may at its discretion provide an allowance for WLAs calculated to result in no measurable reduction of dissolved oxygen (DO). For this purpose, "no measurable reduction" is defined as no more than 0.10 mg/L for a single source and no more than 0.20 mg/L for all anthropogenic activities that influence the water quality limited segment. The allowance applies for surface water DO criteria and for Intergravel dissolved oxygen (IGDO) if a determination is made that the conditions are natural. The allowance for WLAs applies only to surface water 30-day and seven-day means; or

(iv) Under extraordinary circumstances to solve an existing, immediate and critical environmental problem, the commission or department may, after completing a TMDL but before the water body has achieved compliance with standards, consider a waste load increase for an existing source on a receiving stream designated water quality limited under sub-section (a) of the definition of "Water Quality Limited" in OAR 340-041-0002. This action must be based on the following conditions:

(I) That TMDLs, WLAs and LAs have been set; and

(II) That a compliance plan under which enforcement actions can be taken has been established and is being implemented on schedule; and

(III) That an evaluation of the requested increased load shows that this increment of load will not have an unacceptable temporary or permanent adverse effect on beneficial uses or adversely affect threatened or endangered species; and

(IV) That any waste load increase granted under subparagraph (iv) of this paragraph is temporary and does not extend beyond the TMDL compliance deadline established for the water body. If this action will result in a permanent load increase, the action must comply with sub-paragraphs (i) or (ii) of this paragraph.

(b) The activity, expansion, or growth necessitating a new or increased discharge load is consistent with the acknowledged local land use plans as a statement of land use compatibility from the appropriate local planning agency establishes.

(c) Oregon's water quality management policies and programs recognize that Oregon's water bodies have a finite capacity to assimilate waste. Unused assimilative capacity is an exceedingly valuable resource that enhances in-stream values and environmental quality in general. Allocation of any unused assimilative capacity should be based on explicit criteria.

In addition to the conditions in subsection (a) of this section, the commission or department may consider the following:

(A) Environmental Effects Criteria:

(i) Adverse Out-of-Stream Effects. There may be instances where the non-discharge or limited discharge alternatives may cause greater adverse environmental effects than the increased discharge alternative. An example may be the potential degradation of groundwater from land application of wastes;

(ii) Instream Effects. Total stream loading may be reduced through elimination or reduction of other source discharges or through a reduction in seasonal discharge. A source that replaces other sources, accepts additional waste from less efficient treatment units or systems, or reduces discharge loadings during periods of low stream flow may be permitted an increased discharge load year-round or during seasons of high flow, so long as the loading has no adverse effect on threatened and endangered species;

(iii) Beneficial Effects. Land application, upland wetlands application, or other non-discharge alternatives for appropriately treated wastewater may replenish groundwater levels and increase streamflow and assimilative capacity during otherwise low streamflow periods.

(B) Economic Effects Criteria. When assimilative capacity exists in a stream, and when it is judged that increased loadings will not have significantly greater adverse environmental effects than other alternatives to increased discharge, the economic effect of increased loading will be considered. Economic effects will be of two general types:

(i) Value of Assimilative Capacity. The assimilative capacity of Oregon's streams is finite, but the potential uses of this capacity are virtually unlimited. Thus it is important that priority be given to those beneficial uses that promise the greatest return (beneficial use) relative to the unused assimilative capacity that might be utilized. In-stream uses that will benefit from reserve assimilative capacity, as well as potential future beneficial use, will be weighed against the economic benefit associated with increased loading;

(ii) Cost of Treatment Technology. The cost of improved treatment technology, non-discharge and limited discharge alternatives may be evaluated.

**Statutory/Other Authority:** ORS 468.020, 468B.030, 468B.035 & 468B.048

**Statutes/Other Implemented:** ORS 468B.030, 468B.035 & 468B.048

**History:**

DEQ 8-2017, f. & cert. ef. 7-18-17

DEQ 2-2007, f. & cert. ef. 3-15-07

DEQ 17-2003, f. & cert. ef. 12-9-03

**340-041-0345**

**Basin-Specific Criteria (Willamette): Water Quality Standards and Policies for this Basin**

[Note: The rule amendment establishes a policy to protect the water quality of Waldo Lake from degradation.]

(1) pH (hydrogen ion concentration). pH values may not fall outside the following ranges:

(a) All basin waters, except main stem Columbia River and Cascade lakes: 6.5 to 8.5;

(b) Cascade lakes above 3,000 feet altitude: 6.0 to 8.5.

(2) Total Dissolved Solids. Guide concentrations listed may not be exceeded unless DEQ specifically authorizes otherwise upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0340: Willamette River and Tributaries — 100.0 mg/l.

(3) Minimum Design Criteria for Treatment and Control of Sewage Wastes:

(a) Willamette River and tributaries except Tualatin River Subbasin:

(A) During periods of low stream flows (approximately May 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 10 mg/l of BOD and 10 mg/l of SS or equivalent control;

(B) During the period of high stream flows (approximately November 1 to April 30): A minimum of secondary treatment or equivalent control and, unless DEQ otherwise specifically authorizes, operating all waste treatment and control facilities at maximum practical efficiency and effectiveness so as to minimize waste discharges to public waters.

(b) Main stem Tualatin River from mouth to Gaston (river mile 0 to 65):

(A) During periods of low stream flows (approximately May 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 10 mg/l of BOD and 10 mg/l of SS or equivalent control;

(B) During the period of high stream flows (approximately November 1 to April 30): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 mg/l of SS or equivalent control.

(c) Main stem Tualatin River above Gaston (river mile 65) and all tributaries to the Tualatin River: Treatment resulting in monthly average effluent concentrations not to exceed 5 mg/l of BOD and 5 mg/l of SS or equivalent control;

(d) Tualatin River Subbasin: The dissolved oxygen level in the discharged effluents may not be less than 6 mg/l;

(4) Nonpoint source pollution control in the Tualatin River subbasin and lands draining to Oswego Lake:

(a) Subsection (5)(b) of this rule applies to any new land development within the Tualatin River and Oswego Lake subbasins except those developments with application dates before January 1, 1990. The application date is the date on which the local jurisdiction receives a complete application for development approval as the local jurisdiction's regulations require;

(b) For land development, no jurisdiction in these subbasins may approve any preliminary plat, site plan, permit, or public works project unless the conditions of the plat permit or plan approval include an erosion control plan containing methods or interim facilities, or both, to be constructed or used concurrently with land development and to be operated during construction to control the discharge of sediment in the stormwater runoff. The erosion control plan must include the following elements:

(A) Protection techniques to control soil erosion and sediment transport to less than one ton per acre per year, as calculated using the Natural Resources Conservation Service's Universal Soil Loss Equation or other equivalent methods (see Figures 1 to 6 in Appendix 1 for examples). The erosion control plan must include temporary sedimentation basins or other sediment control devices when, because of steep slopes or other site specific considerations, other on-site sediment control methods will not likely keep the sediment transport to less than one ton per acre per year. The local jurisdictions may establish additional requirements for meeting an equivalent degree of control. Any sediment basin constructed must be sized using 1.5 feet minimum sediment storage depth plus 2.0 feet storage depth above for a settlement zone. The storage capacity of the basin must be sized to store all of the sediment that is likely to be transported and collected during construction while the erosion potential exists. When the erosion potential has been removed, the sediment basin, or other sediment control facilities, can be removed and the site restored as per the final site plan. All sediment basins must be constructed with an emergency overflow to prevent erosion or failure of the containment dike; or

(B) A soil erosion control matrix derived from and consistent with the universal soil equation the jurisdiction or DEQ approves.

(c) The Director may modify Appendix 1 as necessary without approval from the Environmental Quality Commission. The Director may modify Appendix 1 to simplify it and to make it easier for people to apply;

(d) Subsection (5)(e) of this rule applies to any new land development within the Tualatin River and Oswego Lake subbasins, except:

(A) Those developments with application dates before June 1, 1990. The application date is the date on which the local jurisdiction receives a complete application for development approval as that jurisdiction's regulations require;

(B) One and two family dwellings on existing lots of record;

(C) Sewer lines, water lines, utilities, or other land development that will not directly increase nonpoint source pollution once construction has been completed and the site is either restored to, or not altered from, its approximate original condition;

(D) If the Environmental Quality Commission determines that a jurisdiction does not need to require stormwater quality control facilities for new development;

(E) When a jurisdiction adopts ordinances that provide for a stormwater quality program equivalent to subsection (e) of this section. Ordinances adopted to implement equivalent programs must:

(i) Encourage on-site retention of stormwater, require phosphorus removal equivalent to the removal efficiency required by subsection (e) of this section, provide for adequate operation and maintenance of stormwater quality control facilities, and require financial assurance, or equivalent security, that assures construction of the stormwater quality control facilities the ordinance requires;

(ii) If the ordinances provide for exemptions other than those allowed for by paragraphs (B) and (C) of this subsection, the ordinances must provide for collecting in-lieu fees, or other equivalent mechanisms, that assure financing for, and construction of, associated, off-site stormwater quality control facilities. No exemption may be allowed if the jurisdiction is not meeting an approved schedule for identifying location of the off-site stormwater quality control facility to serve the development requesting an exemption.

(e) For new development, no jurisdiction may approve any plat, site plan, building permit or public works project in these subbasins unless the conditions of the plat, permit, or plan approval require permanent stormwater quality control facilities to control phosphorus loadings associated with stormwater runoff from the development site. Jurisdictions must encourage and provide preference to techniques and methods that prevent and minimize pollutants from entering the storm and surface water systems. Permanent stormwater quality control facilities for phosphorus must meet the following requirements:

(A) The stormwater quality control facilities must be designed to achieve a phosphorus removal efficiency as calculated from the following equation:

$$R_p = 100 - 24.5/R_v$$

Where:

*R<sub>p</sub>* = Required phosphorus removal efficiency

*R<sub>v</sub> = Average site runoff coefficient*

*The average site runoff coefficient can be calculated from the following equation:*

$$R_v = (0.7 \times A1) + (0.3 \times A2) + (0.7 \times A3) + (0.05 \times A4) + (A5 \times 0.0)$$

*Where:*

*A1 = fraction of total area that is paved streets with curbs and that drain to storm sewers or open ditches.*

*A2 = fraction of total area that is paved streets that drain to water quality swales located on site.*

*A3 = fraction of total area that is building roof and paved parking that drains to storm sewers.*

*A4 = fraction of total area that is grass, trees and marsh areas.*

*A5 = fraction of total area for which runoff will be collected and retained on site with no direct discharge to surface waters.*

(B) A jurisdiction may modify the equation for  $R_v$  to allow applying additional runoff coefficients associated with land surfaces not identified in this subsection. DEQ must be notified in writing whenever an additional runoff coefficient is used. The use of additional runoff coefficients must be based on scientific data. The jurisdiction must discontinue using an additional runoff coefficient if DEQ objects to its use in writing within ten days of receiving notification;

(C) The stormwater quality control facilities must be designed to meet the removal efficiency specified in paragraph (A) of this subsection for a mean summertime storm event totaling 0.36 inches of precipitation with an average return period of 96 hours;

(D) The removal efficiency specified in paragraph (A) of this subsection specify only design requirements and are not intended to be used as a basis for performance evaluation or compliance determination of the stormwater quality control facility installed or constructed pursuant to this subsection;

(E) A jurisdiction may approve stormwater quality control facilities this subsection requires only if the following are met:

(i) For developments larger than one acre, the plat or site plan must include plans and a certification prepared by an Oregon registered, professional engineer, that the proposed stormwater control facilities have been designed in accordance with criteria expected to achieve removal efficiencies for total phosphorus required by paragraph (A) of this subsection;

(ii) The plat or site plan must be consistent with the area and associated runoff coefficients used to determine the removal efficiency required in paragraph (A) of this subsection;

(iii) The developer must provide a financial assurance, or equivalent security acceptable to the jurisdiction, with the jurisdiction that assures that the stormwater control facilities are constructed according to the plans established in the plat or site plan approval. Where practicable, the jurisdiction must combine the financial assurance this rule requires with other financial assurance requirements imposed by the jurisdiction;

(iv) Each jurisdiction that constructs or authorizes construction of permanent stormwater quality control facilities must file with DEQ an operation and maintenance plan for the stormwater quality control facilities within its jurisdiction. The operation and maintenance plan must allow for public or private ownership, operation, and maintenance of individual permanent stormwater quality control facilities. The jurisdiction or private operator must operate and maintain the permanent stormwater control facilities as the operation and maintenance plan specifies.

(f) Except as paragraph (D) of this subsection requires, the jurisdiction may grant an exception to subsection (e) of this section if the jurisdiction chooses to adopt and, on a case-by-case basis, impose a one time in-lieu fee. The fee will be an option where, because of the size of the development, topography, or other factors, the jurisdiction determines that the construction of on-site permanent stormwater treatment systems is impracticable or undesirable:

(A) The in-lieu fee will be based upon a reasonable estimate of the current, prorated cost for the jurisdiction to provide stormwater quality control facilities for the land development being assessed the fee. Estimated costs include costs associated with off-site land and rights-of-way acquisition, design, construction, and construction inspection;

(B) The jurisdiction must deposit any in-lieu fees collected under this paragraph in an account dedicated only to reimbursing the jurisdiction for expenses related to off-site land and rights-of-way acquisition, design, construction, and construction inspection of stormwater quality control facilities;

(C) The ordinance establishing the in-lieu fee must include provisions that reduce the fee in proportion to the ratio of the site's average runoff coefficient ( $R_v$ ), as established according to the equation in paragraph (6)(e)(A) of this rule;

(D) No new development may be granted an exemption if the jurisdiction is not meeting an approved time schedule for identifying the location for the off-site stormwater quality control facilities that would serve that development.

(g) DEQ may approve other mechanisms that allow jurisdictions to grant exemptions to new development. DEQ may only approve those mechanisms that assure financing for off-site stormwater quality control facilities and that encourage or require on-site retention where feasible;

(h) Subsection (b) of this section applies until a jurisdiction adopts ordinances that provide for a program equivalent to subsection (b) of this section, or the Environmental Quality Commission determines such a program is not necessary when it approves the jurisdiction's program plan required by OAR 340-041-0470(2)(g).

(5) In order to improve water quality within the Yamhill River subbasin to meet the existing water quality standard for pH, the following special rules for total maximum daily loads, waste load allocations, load allocations and program plans are established:

(a) After wastewater control facilities and program plans the EQC approved under this rule are completed, and no later than June 30, 1994, no activities may be allowed, and no wastewater may be discharged to the Yamhill River or its tributaries, without the EQC's authorization, that cause the monthly median concentration of total phosphorus to exceed 70 ug/l as measured during the low flow period between approximately May 1 and October 31 of each year;

*[NOTE: DEQ may condition precise dates for complying with this rule on the receiving water's physical conditions (i.e., flow temperature). DEQ may specify the compliance dates in individual permits or memorandums of understanding. DEQ may consider design flows, river travel times, and other relevant information, when establishing the specific conditions it inserts in the permits or memorandums of understanding.]*

(b) Within 90 days of adoption of these rules, the Cities of McMinnville and Lafayette must submit a program plan and time schedule to DEQ describing how and when they will modify their sewerage facility to comply with this rule;

(c) The commission will review and approve final program plans. The commission may define alternative compliance dates as program plans are approved. All proposed final program plans must be subject to public hearing before the commission considers them for approval;

(d) DEQ will, within 60 days of adoption of these rules, distribute initial waste load allocations and load allocations to the point and nonpoint sources in the basin. These allocations are considered interim and may be redistributed based upon the conclusions of the approved program plans.

(6) Multiple Discharger Variance for Mercury. The following rule is a multiple discharger variance to the fish-tissue based human health criterion for methylmercury. The variance applies to the following facilities:

Albany-Millersburg WRF (Willamette River); Canby STP (Willamette River); Cascade Pacific – Halsey Mill (Willamette River); City of Molalla (Molalla River); City of Portland Tryon Creek WWTP (Willamette River); City of Sandy (Tickle Creek); Clean Water Services Durham STP (Tualatin River); Clean Water Services Forest Grove STP (Tualatin River), Clean Water Services Hillsboro STP (Tualatin

River), Clean Water Services Rock Creek STP (Tualatin River); Corvallis STP (Willamette River), Cottage Grove STP (Coast Fork Willamette River); Dallas STP (Rickreall Creek); Georgia-Pacific Halsey Mill (Willamette River); Gervais STP (Pudding River); International Paper Springfield Paper Mill (McKenzie River); Kellogg Creek WWTP (Willamette River); Lebanon WWTP (South Santiam River); McMinnville WRF (South Yamhill River); Metropolitan Wastewater Management Commission Eugene/Springfield STP (Willamette River); Newberg STP (Willamette River); Oak Lodge Services WRF (Willamette River); Saint Helens/Boise Cascade STP (Multnomah Channel); Salem Willow Lake STP (Willamette River); Siltronic Corporation (Willamette River); Silvertown STP (Silver Creek); Stayton STP (North Santiam River); Sweet Home STP (South Santiam River); Teledyne Wah Chang (Willamette River); Tri-City Service District – Blue Heron (Willamette River); Tri-City Water Pollution Control Plant (Willamette River); West Linn Paper Company (Willamette River); Westrock, Newberg Mill (Willamette River); Wilsonville STP (Willamette River); Woodburn WWTP (Pudding River);

The variance will also apply to any of the following facilities for which DEQ would otherwise be required to establish mercury effluent limits during the term of the variance:

Amity STP (Salt Creek); Aumsville STP (Beaver Creek); Brooks STP (Willamette River); Brownsville STP (Calapooia River); Carlton STP (North Yamhill River); City of Estacada (Clackamas River); City of Scappoose (Multnomah Channel); Coburg WWTP (Unnamed tributary to Muddy Creek); Creswell STP (Unnamed tributary to Camas Swale Creek); Dayton STP (Yamhill River); Dundee STP (Willamette River); Halsey STP (Muddy Creek); Harrisburg Lagoon Treatment Plant (Willamette River); Hubbard STP (Mill Creek); Independence STP (Middle Willamette River); Jefferson STP (Santiam River); Junction City STP (Flat Creek); Lafayette STP (Yamhill River); Lane Community College (Russel Creek); Lowell STP (Middle Fork Willamette River); Monmouth STP (Willamette River); Mt. Angel STP (Pudding River); Oakridge STP (Middle Fork Willamette River); Philomath STP (Mary's River); Tangent STP (Calapooia River); Sheridan STP (South Yamhill River); USDA Forest Service (Clackamas River); Veneta STP (Long Tom River); Willamina STP (South Yamhill River); Yamhill STP (North Yamhill River).

(a) Findings. The EQC finds the following:

(A) The fishing use and fish-tissue based human health criterion for methyl-mercury cannot be attained within the next 20 years due to mercury from atmospheric deposition and naturally occurring mercury in native soils. Neither the sources of mercury nor the processes by which the mercury is transported to waterbodies can be remedied to meet the underlying designated use and criterion within the next 20 years.

(B) There is no currently feasible mercury treatment technology that would result in achieving water quality-based effluent limits based on the human health criterion for mercury.

(C) The requirements of the variance will not result in degrading the currently attained ambient water quality for methyl-mercury in the Willamette Basin.

(b) Term of the variance. The term of this variance is 20 years from the date of EPA approval.

(c) Application requirements. To implement the variance, a facility must provide to DEQ the following information:

(A) All mercury effluent data from the previous five years, including a minimum of two years of quarterly effluent data.

(B) A facility-specific mercury minimization program with minimum elements described in subsection (6)(f) of this rule for municipal facilities or subsection (6)(g) of this rule for industrial facilities.

(d) Highest attainable condition. Permit requirements will reflect the highest attainable condition specified in this variance. The highest attainable condition for this variance is the level currently achievable, as described in subsection (6)(e) below, for all dischargers, and a requirement to develop and implement a mercury minimization program with elements described in subsection (6)(f) of this rule for municipal dischargers and subsection (6)(g) of this rule for industrial dischargers.

(e) Highest attainable condition – level currently achievable (LCA). The highest attainable condition for all facilities covered under this variance will include the level currently achievable. This is a quantifiable expression of the effluent condition achievable with the pollutant control technologies in place at the time this variance is granted when those technologies are well maintained and operated. The LCA for this variance is the 95th percentile value of recent (e.g., two to five years) total mercury effluent data or a previously applicable LCA, whichever is lower.

(f) Highest attainable condition – mercury minimization program for municipal dischargers. The highest attainable condition for municipal dischargers will include implementing a mercury minimization program covering the term of the variance, which must contain the following minimum elements:

(A) A monitoring plan to include influent, effluent and biosolids monitoring;

(B) Regulating dental offices to ensure installation and maintenance of amalgam separators, including inspection of dental facilities for proper management and disposal of dental waste;

(C) Identifying mercury-containing materials at facilities and offices each municipal wastewater treatment facility operates and implementing any recommendations for removing mercury-containing materials;

(D) Identifying and inspecting commercial laboratories, schools and healthcare facilities that may have mercury and providing recommendations and outreach materials to these facilities;

(E) Distributing outreach materials to commercial and residential sectors;

(F) Evaluating new facilities as potential sources of mercury, regulatory oversight of such sources of mercury under the municipality's pre-treatment program where such sources are significant industrial users, and outreach to provide recommendations on activities that would reduce mercury in the facilities' discharges. Priority facilities should include those in the timber, paper, glass, clay, cement, concrete, gypsum, primary and fabricated metal, and electronic instrument sectors;

(G) Cleanup of legacy mercury from collection systems;

(H) Facility-specific activities to reduce mercury loading into the waterbody. These may include cost-effective and reasonable best management practices for nonpoint source controls under the control of the discharger that would make progress towards attaining the underlying designated use and criterion; and

(I) If a facility has accomplished all activities within its control, the facility may implement or fund mercury reduction activities outside the discharger's control that will make progress toward attaining the underlying designated use and criterion.

(g) Highest attainable condition – mercury minimization program for industrial dischargers. The highest attainable condition for industrial dischargers will include implementing a mercury minimization program covering the term of the variance, with the following minimum elements:

(A) A monitoring plan to include influent, effluent and biosolids monitoring;

(B) Identifying mercury-containing materials used in the facility, offices and testing laboratories the discharger operates, and developing and implementing recommendations for using substitute materials with less or no mercury;

(C) Identifying other potential sources of mercury within the facility and developing and implementing recommendations for reducing these sources;

(D) Identifying other activities within discharger's control discharger to reduce mercury loading into the waterbody. These may include cost-effective and reasonable best management practices for nonpoint source controls under the discharger's control that would make progress towards attaining the underlying designated use and criterion; and

(E) If a facility has accomplished all activities within its control, the facility may implement or fund mercury reduction activities outside the discharger's control that will make progress toward attaining the underlying designated use and criterion.

(h) State mercury reduction activities in Oregon. The state implements numerous programs that will, over time, including over the 20-year term of this variance, reduce mercury loads to Willamette Basin waterbodies, including such programs as:

(A) Oregon's Dental Amalgam Law and associated practices as required under ORS 679.520 and ORS 679.525, and subsequent federal regulations.

(B) Airborne toxic contaminant reduction from existing or newly permitted industrial sources through the Cleaner Air Oregon program and other DEQ Air Quality permitting requirements.

(C) DEQ coordination with the Oregon Department of Forestry on implementing the Forest Practices Act.

(D) DEQ coordination with the Oregon Department of Agriculture on implementing the Oregon Agriculture Water Quality Management Act.

(E) DEQ issuing general discharge permits, such as Phase I and Phase II municipal separate storm sewer system permits, industrial stormwater permits, and suction dredge mining permits, in addition to individual wastewater discharge permits.

(F) DEQ in-water and upland remediation under state laws and rules, and coordination with US EPA on Portland Harbor, Gould, and Black Butte Mine Superfund site cleanups.

(G) Regulatory and voluntary programs to reduce or recycle products containing mercury, such as automotive light switches, thermostats, and LCD screens and monitors.

(i) Re-evaluating the Highest Attainable Condition. DEQ will re-evaluate the highest attainable condition for this multiple discharger variance every five years from the date that EPA approves this variance. DEQ will provide a written summary of this re-evaluation to EPA within 30 days of completing the re-evaluation. If DEQ fails to submit the re-evaluation to EPA within the specified timeframe, the variance will no longer be the applicable water quality standard until DEQ completes the re-evaluation and submits it to EPA.

(A) The re-evaluation will include the following elements:

(i) A summary of the mercury reduction activities completed and an analysis of mercury reductions facilities covered under this variance achieved, using the data and information provided in their annual reports; and

(ii) A determination of the feasibility of wastewater treatment technology to attain the water quality standard.

(B) DEQ will provide public notice on the availability of its draft re-evaluation and provide at least 30 days opportunity for the public to comment on the draft re-evaluation.

(C) Upon permit renewal for each facility covered under the variance, DEQ will update conditions in the permit based on the re-evaluation of the Highest Attainable Condition, as follows:

(i) DEQ will re-calculate each facility's level currently achievable, as described in OAR 340-041-0345(6)(e), utilizing the previous five years of data provided by each facility, at the time of their permit renewal. DEQ will adjust permit limits if the data shows that the level currently achievable is lower than the LCA in the previous permit.

(ii) DEQ will review updates to the facility's site-specific mercury minimization plan and, if necessary, request revisions to ensure that it is consistent with variance requirements.

(7) Outstanding Resource Waters of Oregon (ORWs)

(a) Waldo Lake and associated wetlands (hereafter, "Waldo Lake"). The current high water quality and exceptional ecological and recreation values of Waldo Lake shall be maintained and protected, except as altered by natural processes or as authorized under (7)(a)(A)-(C), below.

(A) No new NPDES discharge or increase of an existing NPDES discharge to Waldo Lake shall be allowed, except a construction stormwater permit may be authorized for projects that will not have more than a short-term water quality impact.

(B) No new NPDES discharge or increase of an existing NPDES discharge to waters upstream of or tributary to Waldo Lake shall be allowed if such discharge would degrade the water quality of Waldo Lake, except a construction stormwater permit may be authorized for projects that will not have more than a short-term water quality impact.

(C) Any other new discharge to Waldo Lake is prohibited if such discharge would degrade the water quality or ecological or recreation values of Waldo Lake, except in the following circumstances:

(i) As needed to respond to a public health or safety emergency, including but not limited to wildfire response. The water quality impacts from such responses shall be short term and will be mitigated to the extent practicable.

(ii) As needed in connection with ecological restoration or water quality improvement activities where short term water quality impacts are necessary to obtain long-term restoration or water quality improvements.

**Statutory/Other Authority:** ORS 468.020, 468B.030, 468B.035 & 468B.048

**Statutes/Other Implemented:** ORS 468B.030, 468B.035 & 468B.048

**History:**

[DEQ 4-2020, minor correction filed 01/27/2020, effective 01/27/2020](#)

[DEQ 3-2020, amend filed 01/24/2020, effective 01/24/2020](#)

[DEQ 13-2019, amend filed 05/16/2019, effective 05/16/2019](#)

### **340-041-0185**

#### **Basin-Specific Criteria (Klamath): Water Quality Standards and Policies for this Basin**

[Note: The rule amendment establishes a policy to protect the water quality of Crater Lake from degradation.]

(1) pH (hydrogen ion concentration). pH values may not fall outside the following ranges:

(a) Fresh waters except Cascade lakes: pH values may not fall outside the range of 6.5-9.0. When greater than 25 percent of ambient measurements taken between June and September are greater than pH 8.7, and as resources are available according to priorities set by the Department, the Department will determine whether the values higher than 8.7 are anthropogenic or natural in origin;

(b) Cascade lakes above 5,000 feet altitude: pH values may not fall outside the range of 6.0 to 8.5.

(2) Temperature. From June 1 to September 30, no NPDES point source that discharges to the portion of the Klamath River designated for cool water species may cause the temperature of the water body to increase more than 0.3°C above the natural background after mixing with 25% of the stream flow. Natural background for the Klamath River means the temperature of the Klamath River at the outflow from Upper Klamath Lake plus any natural warming or cooling that occurs downstream. This criterion supersedes OAR 340-041-0028(9)(a) during the specified time period for NPDES permitted point sources.

(3) Total Dissolved Solids. Guide concentrations listed below may not be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in OAR 340-041-0180: main stem Klamath River from Klamath Lake to the Oregon-California Border (river miles 255 to 208.5): The specific conductance may not exceed 400 micro-ohms at 77°F when measured at the Oregon-California Border (river mile 208.5).

(4) Minimum Design Criteria for Treatment and Control of Sewage Wastes:

(a) During periods of low streams flows (approximately May 1 to October 31): Treatment resulting in monthly average effluent concentrations not to exceed 20 mg/l of BOD and 20 of suspended solids or equivalent control;

(b) During the period of high stream flows (approximately November 1 to April 30): A minimum of secondary treatment or equivalent control and unless otherwise specifically authorized by the Department, operation of all waste treatment and control facilities to

maximum practicable efficient and effectiveness so as to minimize waste discharge to public waters.

(5) Time Schedule for Dam Removal.

(a) DEQ may issue a 401 Water Quality Certification for the federal license or permit authorizing the removal of J.C. Boyle Dam on the Klamath River that includes a time schedule for compliance with water quality standards, if DEQ makes the following findings:

(A) The dam removal and its associated water quality impacts will be of limited duration;

(B) The dam removal and related restoration activities will provide a net ecological benefit;

(C) The dam removal will be performed in a manner minimizing, to the maximum extent practicable, adverse impacts to water quality, threatened and endangered species, and beneficial uses of the Klamath River; and

(D) The dam removal, by the end of a specified time schedule, is not expected to cause an exceedance of a water quality standard set forth in this Division.

(b) Any 401 Water Quality Certification issued by DEQ for removal of J.C. Boyle Dam must:

(A) Be based on an application, evaluation, and public participation complying with OAR chapter 340 division 48; and

(B) Contain conditions ensuring that the dam removal:

(i) ~~W~~will be performed in accordance with interim milestones and a time schedule specified in the certification;

(ii) ~~W~~will be performed in a manner that, to the maximum practicable extent, minimizes adverse impacts to water quality, threatened and endangered species, and beneficial uses of the Klamath River (including the use of best practices and interim and post-removal protection, mitigation, and monitoring measures); and

(iii) ~~W~~will not cause an exceedance of a water quality standard set forth in this Division by the end of the maximum period for meeting standards specified in the certification.

(6) Outstanding Resource Waters of Oregon (ORWs)

(a) Crater Lake. The current high water quality and exceptional ecological and recreation values of Crater Lake shall be maintained and protected, except as altered by natural processes or as authorized under (6)(a)(A)-(B), below.

(A) No new NPDES discharge or increase of an existing NPDES discharge to Crater Lake shall be allowed, except a construction stormwater permit may be authorized for projects that will not have more than a short-term water quality impact.

(B) Any other new discharge to Crater Lake is prohibited if such discharge would degrade the water quality or ecological or recreation values of Crater Lake, except in the following circumstances:

(i) As needed to respond to a public health or safety emergency, including but not limited to wildfire response. The water quality impacts of such responses shall be short term and will be mitigated or rehabilitated to the extent practicable.

(ii) As needed in connection with ecological restoration or water quality improvement activities where short term water quality impacts are necessary to obtain long-term restoration or water quality improvements.

(C) The Environmental Quality Commission acknowledges the mandate of Crater Lake National Park to also manage the park for the purpose of providing public access and enjoyment, as directed by the National Park Service Organic Act (16U.S.C. 1 et seq.).

**Statutory/Other Authority:** ORS 468.020, 468B.030, 468B.035 & 468B.048

**Statutes/Other Implemented:** ORS 468B.030, 468B.035 & 468B.048

**History:**

DEQ 2-2012, f. & cert .ef. 5-21-12

DEQ 1-2007, f. & cert. ef. 3-14-07

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# Crater Lake Outstanding Resource Water Designation Support Document

Date: July 1, 2020



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# Table of Contents

<b>Executive Summary .....</b>	<b>1</b>
<b>1. Introduction and Background .....</b>	<b>2</b>
1.1 Brief History .....	2
1.2 Outstanding Resource Waters.....	2
<b>2. Crater Lake .....</b>	<b>3</b>
2.1 Description and Location.....	3
2.2 Water Quality.....	5
2.3 Water Quality of Oregon Lakes .....	7
2.3 Ecological and Research Value .....	11
2.4 Recreational Value.....	12
2.5 Importance to Native American Tribes.....	13
<b>3. Lake Management .....</b>	<b>13</b>
<b>4. Proposed Rule.....</b>	<b>14</b>
<b>5. References.....</b>	<b>14</b>
<b>Appendix A, Federal ORW Regulations.....</b>	<b>15</b>

# List of Figures

Figure 1: Location of Crater Lake in Oregon.....	3
Figure 2: Location of Crater Lake in Oregon. [Source: National Park Service brochure].....	4
Figure 3. Detail of Crater Lake in Oregon. [Source: <a href="http://www.craterlakeinstitute.com/what-to-do/directions-and-maps/more-of-crater-lake/">http://www.craterlakeinstitute.com/what-to-do/directions-and-maps/more-of-crater-lake/</a> ] .....	4
Figure 4 Crater Lake Secchi depths from 1978-2018. Figure taken from the State of the Lake .....	5
Figure 5: Nitrate dynamics in Crater Lake: Concentration throughout the water column. Figure taken from the State of the Lake Report, 2018 (NPS, 2019).....	6
Figure 6: Chlorophyll fluorescence in Crater Lake from January 2017 until January 2018. Stratification is represented by the vertical dotted white line. ....	7
Figure 7: Secchi Depths of Selected Oregon Lakes.....	A-10
Figure 8:. Secchi Depths from the 2007 National Lakes Assessment .....	A-10
Figure 9:. Endemic Mazama newt in Crater Lake (NPS photos).....	A-12

# List of Table

Table 1: Trophic Status of Significant Publicly Owned Lakes.....	7
Table 2: Water Quality Data for Selected Oregon Lakes (median values unless otherwise indicated).....	9

# Executive Summary

Crater Lake is located in Klamath County, in south central Oregon. Crater Lake is the centerpiece of Oregon's only national park. Located in a volcanic caldera, it is the deepest lake in the United States and is exceptionally clear and pristine. In addition to its outstanding water quality, the lake is important for long-term research and recreation, and has great cultural significance to local Native American tribes.

The Northwest Environmental Defense Center (NEDC) submitted a petition to the Oregon Environmental Quality Commission (the commission) and Oregon Department of Environmental Quality Director Richard Whitman, dated April 22, 2019. The petition asked the commission to adopt rules designating Waldo Lake, another extremely clear lake in Oregon, an Outstanding Resource Water (ORW). In July 2019, the commission granted the petition and directed DEQ to initiate the requested rulemaking. At the same time, the commission directed DEQ to also initiate rulemaking to designate Crater Lake an Outstanding Resource Water.

Outstanding Resource Waters are high quality waters that have extraordinary or unique character or ecological value, or are critical habitat areas, such that they constitute an outstanding state or national resource. Oregon must protect the special water quality and ecological values of these waters under its antidegradation policy. Therefore, the proposed rules include a policy to protect Crater Lake's current high water quality and exceptional ecological values. The proposed rule amendments would prohibit new or expanded permitted wastewater discharges and limit activities that would degrade the current water quality. Exceptions are allowed to respond to emergencies and for restoration or enhancement activities.

# 1. Introduction and Background

This document provides supporting information for the Oregon Department of Environmental Quality's proposal to designate Crater Lake an Outstanding Resource Water and adopt a rule to protect Crater Lake's existing high water quality, ecological and recreational values.

Crater Lake, the centerpiece of Oregon's only national park, is unique. Located in a volcanic caldera, Crater Lake is the deepest lake in the United States and is exceptionally clear and pristine. Based on the outstanding quality of its water, the importance of the lake for long-term research and recreation, and the lake's cultural significance, the Oregon Environmental Quality Commission directed DEQ to initiate a rulemaking to designate Crater Lake an ORW.

DEQ is working with the Crater Lake National Park staff and other stakeholders to develop proposed rules and supporting information. In adopting the rules, DEQ must consider the statutory mandates and General Management Plan for Crater Lake National Park, in addition to federal and state water quality regulations.

DEQ is making this support document, together with the proposed rule language and the fiscal impact statement, available for public comment. Following public comment, DEQ will make a recommendation to the commission about whether to designate Crater Lake an ORW and about the proposed water quality protection rule to accompany the designation.

## 1.1 Brief History

In April 2019, NEDC and several co-petitioners submitted a petition to the commission requesting that the commission designate Waldo Lake, another extremely clear Oregon lake, an ORW. There was a large amount of public support for the Waldo Lake ORW designation. In July 2019, the commission granted the petition and directed DEQ to initiate a rulemaking process to consider the proposed rules. At the same time, the commission directed DEQ to include the designation of Crater Lake as an ORW in the rulemaking process. The citizen petition and the DEQ Staff Reports for Waldo Lake and Crater Lake may be found on the following website: <https://www.oregon.gov/deq/wq/Pages/WQ-Standards-ORWO.aspx>.

Oregon's first, and only ORW to date, is the North Fork Smith River in southwest Oregon. The commission designated this ORW in 2017 in response to a citizen rulemaking petition. The rule language proposed for Crater Lake is similar to the language adopted for the North Fork Smith River and proposed for Waldo Lake, but has been revised.

## 1.2 Outstanding Resource Waters

Oregon's water quality standards define three classifications of state waters: water quality limited, high quality, and outstanding resource waters. As stated in [Oregon Administrative Rules 340-041-0004\(8\)](#) and the associated definition in OAR [340-041-0002\(45\)](#), Outstanding Resource Waters (ORW) are high quality waters that have extraordinary or unique character or ecological value, or are critical habitat areas, such that they constitute an outstanding state or national resource. Oregon rules identify waters in national parks as a priority for ORW consideration.

Federal regulations also identify waters in national parks as a priority for state protection from water quality degradation:

40 Code of Federal Regulations §131.12(a)(3): Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

The ORW designation may only be granted by the EQC through rulemaking. Along with the designation, the rules must also include a policy to protect and maintain the exceptional qualities and values of the waterbody.

## 2. Crater Lake

### 2.1 Description and Location

Crater Lake, the centerpiece of Oregon's only national park, is uniquely located in a volcanic caldera formed by the eruption of Mount Mazama roughly 7,700 years ago. Crater Lake is the deepest lake in the United States at 1,949 feet and is exceptionally clear and pristine. The following sections provide additional information on the lake's water quality and ecology.

Crater Lake is located in Klamath County, in south central Oregon, as shown in the following figures.



**Figure 1: Location of Crater Lake in Oregon.**

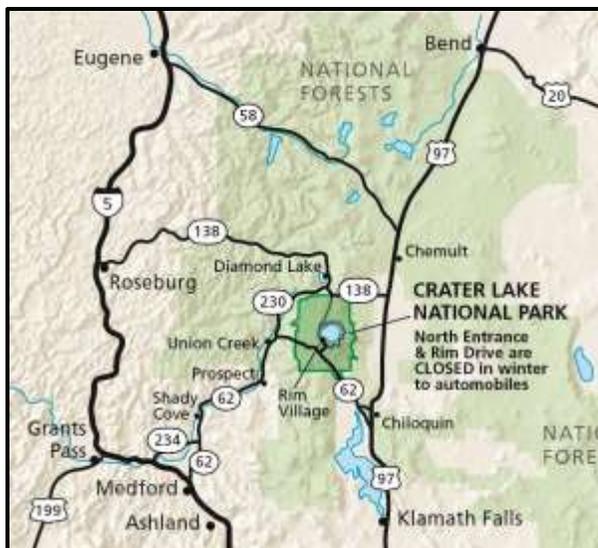


Figure 2: Location of Crater Lake in Oregon. [Source: National Park Service brochure]



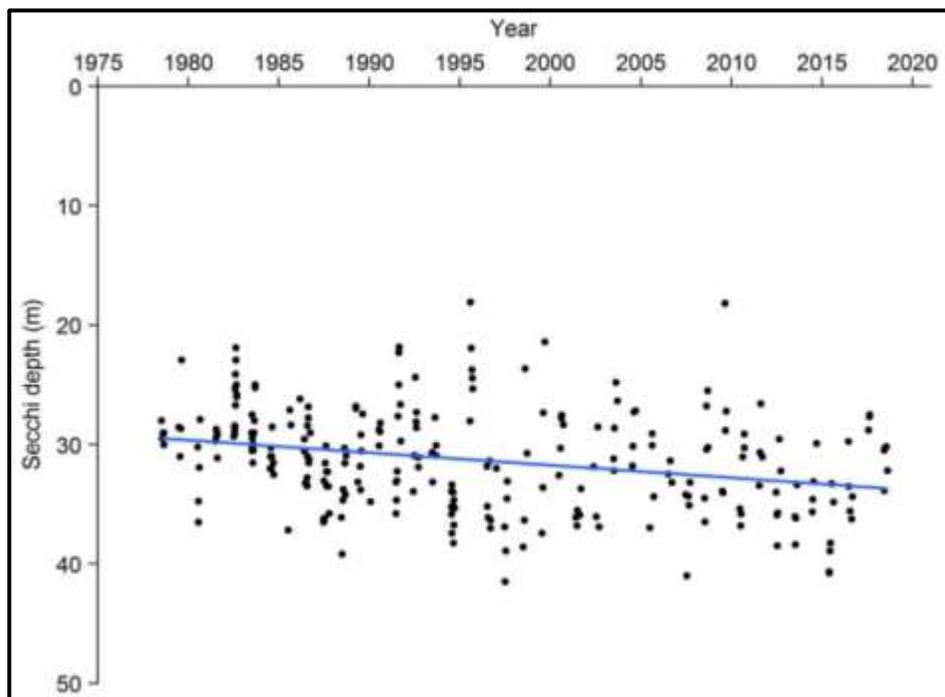
Figure 3. Detail of Crater Lake in Oregon. [Source: <http://www.craterlakeinstitute.com/what-to-do/directions-and-maps/more-of-crater-lake/>]

## 2.2 Water Quality

Crater Lake is a very clear, deep lake contained within a volcanic caldera. No streams flow into or out of Crater Lake. All water entering the lake is from direct precipitation and snowmelt, and is eventually lost through evaporation or subsurface seepage. This means that very little sediment or organic matter is transported into the lake, making it extraordinarily clear, with low levels of nutrients and low productivity (i.e. ultra-oligotrophic). According to the U.S. National Park Service, the lake is one of the clearest, bluest, deepest, and most pristine lakes in the world.

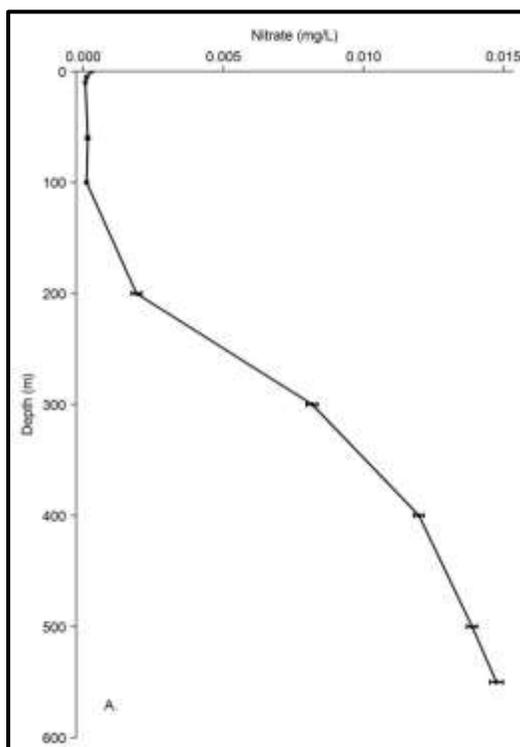
Crater Lake maintains a long-term limnological monitoring program. The data from this monitoring program are summarized in the Crater Lake Long-term Limnological Monitoring Program *State of the Lake Report: 2018* (NPS, 2019). Some highlights of the water quality data and information from this report are provided here.

The clarity and color of Crater Lake is due to the lack of particles suspended in the water column. One measure of water clarity is Secchi depth, a measurement of how deep an object (the Secchi disk) can be seen through the water. A large Secchi depth value is highly correlated with low particle density. Data from the NPS long-term limnological monitoring program (NPS, 2019) show the average summer Secchi depth is 30 meters (98 feet), and maximum Secchi depth is 41.5 meters (136 feet). Results of the long term-monitoring program show that water clarity has not declined through time and has even shown a slight improvement since monitoring began in 1978 (See Figure 4). Table 2 and Figures 7 and 8 show Secchi depth values for several Oregon lakes.



**Figure 4 Crater Lake Secchi depths from 1978-2018. Figure taken from the State of the Lake Report, 2018 (NPS, 2019).**

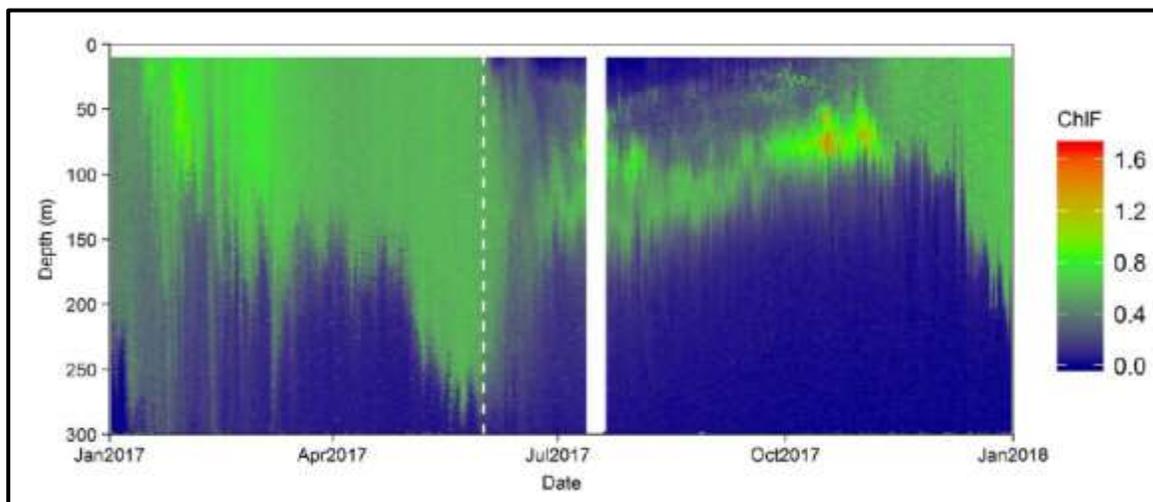
Particles can be biotic (e.g. phytoplankton, zooplankton, pine pollen) or abiotic (e.g. dust, minerals, soil). Phytoplankton are the primary source of particles in Crater Lake. Phytoplankton are usually found in higher densities below 30 meters. Because nitrate concentrations are typically low at shallow depths in summer, the algae do not grow near the surface, which helps to maintain water clarity (see Figure 5). Total nitrogen values are also shown on Table 2. The clarity can be variable, however, due to variability in nitrate concentrations, which are closely linked to mixing events with the deep water. The vertical movement and storage of nitrate is closely monitored by the Park Service because it plays such a critical role in water clarity.



**Figure 5: Nitrate dynamics in Crater Lake: Concentration throughout the water column. Figure taken from the State of the Lake Report, 2018 (NPS, 2019).**

Crater Lake has periods of vertical mixing of the water column in fall and spring, thermal stratification in summer, and reverse stratification in winter. Thermal stratification in summer means there is warmer water floating on the lake's surface because warm water is less dense than the cold water below. This is important ecologically because surface waters are separated from the deeper waters where phytoplankton and zooplankton grow. Water clarity is typically highest after stratification begins when phytoplankton are limited to deeper depths. This is illustrated in Figure 6 below. The green color on the far left side of the graph indicates higher levels of chlorophyll at the lake's surface. When thermal stratification occurs in early July (shown by the white dotted line), algal concentrations shift to below 100 meters of depth. This contributes to the extreme clarity of the lake in the top 100 meters.

The lake's thermal structure is very important to chemical, physical, and biological processes in the lake's ecosystem and is impacted by air temperature. The Park Service's long term monitoring program has detected an increase in summer surface water temperature, earlier onset of stratification, and a reduction in the depth of the thermocline. Research is underway to investigate how increases in air temperature and other climate changes may influence the mixing processes critical to Crater Lake's water quality and ecology.



**Figure 6: Chlorophyll fluorescence in Crater Lake from January 2017 until January 2018. Stratification is represented by the vertical dotted white line.**  
 Figure taken from the State of the Lake Report, 2018.

## 2.3 Water Quality of Oregon Lakes

There are over 6,000 lakes in Oregon, with a combined surface area of over 500,000 acres. There are more than 1,400 named lakes in the state and thousands of unnamed lakes, reservoirs, farm ponds, mill ponds, marshes and sloughs ranging in size from less than 1 acre to more than 90,000 acres (Klamath Lake). Oregon's lakes are found in a wide variety of geographic settings ranging from coastal dunes, river oxbows, mountain settings and high desert locations.

The classification system most widely applied to lakes and reservoirs is the trophic classification system. Lakes are ranked according to their biological productivity: unproductive lakes are termed oligotrophic (“little nourished”) and productive lakes are termed eutrophic (“well nourished”). The productivity of a lake is determined by a number of physical, biological and chemical characteristics – including light transparency (secchi depth), algal growth (chlorophyll a) and nutrients (phosphorus and nitrogen). Listed in Table 1 is a summary of the trophic statuses for 201 of the larger lakes and reservoirs in Oregon based on data in the Atlas of Oregon Lakes.

**Table 1: Trophic Status of Significant Publicly Owned Lakes**

From Atlas of Oregon Lakes (Johnson and others, 1985)

	Number of Lakes	Acreage of Lakes
Lakes Assessed	201	491,255
<b>Ultra-Oligotrophic</b>	<b>12</b>	<b>8,752</b>
Oligotrophic	46	26,528
Mesotrophic	72	75,212
Eutrophic	60	191,310
Hypereutrophic	11	189,453

Most of the ultra-oligotrophic and oligotrophic lakes are found in the Cascade and Wallowa mountains. Of these high quality waters, Crater Lake and Waldo Lake stand out as being very unique, particularly for lakes of their size. Both are extremely clear (high secchi depths) with low productivity (see Figure 6 below). Waldo is further unique in its low ionic strength (specific conductivity), which is similar to distilled water.

Table 2 below shows specific conductivity data and other water quality data for a several Oregon lakes. The classifications for the lakes in this table are: Waldo = ultraoligotrophic, Crater = oligotrophic, Odell = mesotrophic, Diamond and Tenmile – eutrophic; and Klamath = hypereutrophic.

Figure 7 shows how the water clarity of selected Oregon lakes compare. This figure illustrates how extraordinarily clear Waldo and Crater Lakes compare even to other Cascade lakes, such as Odell and Diamond Lakes. The data are also shown in Table 3 below.

Figure 8 shows a histogram of Secchi data from the 2007 National Lakes Assessment, which includes 1184 lakes. This graph also shows how exceptional Waldo and Crater are in terms of clarity. The average secchi depth restoration target for Tahoe Lake is included for comparison. Tahoe Lake, in the Sierra Mountains in California is also known for its clarity and has been designated as an ORW by the state of California.



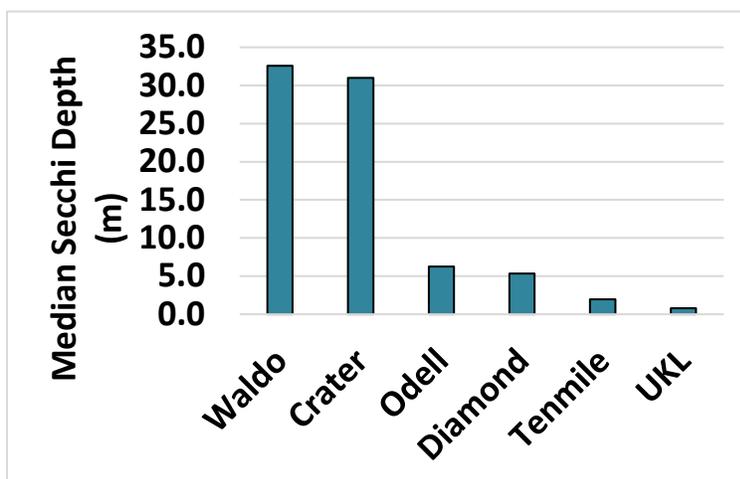
**Table 2: Water Quality Data for Selected Oregon Lakes  
 (median values unless otherwise indicated)**

Lake	Basin	Water Clarity (Secchi depth)		Total Nitrogen		Total Phosphorus		Chlorophyll-a		Specific Conductivity	
		meters	Samples <sup>1</sup>	ug/l	Samples <sup>1</sup>	ug/l	Samples <sup>1</sup>	ug/l	Samples <sup>1</sup>	ug/l	Samples <sup>1</sup>
Waldo	Middle Fork Willamette	32.6	N=82 1986-2019	40	N=47 2001-2014	0.5	N=104 2001-2014	0.1	N=72 2001-2014	3	N=379 1986-2019
Crater	Klamath	31.1 mean	N=222 1978-2019 Jul-Sep	12 mean	N= 412 1985-2004 Jul-Sept	25 mean	N=572 1985-2019 Jul-Sep	0.12	N=1218 1990-2018 Upper 200 meters	116 mean	N=1164 1983-2019 Jul-Sep
Odell	Deschutes	6.3	N=22 2004, 2019	183	N=11 2019	20	N=27 2004, 2019	6.2	N=27 2004, 2019	33	N=148 2004, 2019
Diamond	Umpqua	5.4	N=279 2007-2019	340	N=76 2007-2019	24	N=76 2007-2019	3.7	N=45 2007-2019	37	N=75 2007-2019
Upper Klamath	Klamath	0.8	N=11,660 1990-2015	1830	N=2699 1990-2015	136	N=2772 1990-2015	54	N=2486 1990-2015	111	N=9329 1990-2015
Ten Mile	South Coast	1.2-2.7	N unknown 2013-2014	51	N unknown 2013-2014	27	N unknown 2013-2014	1-260	N unknown 2013-2014	55-75	N unknown 2013-2014

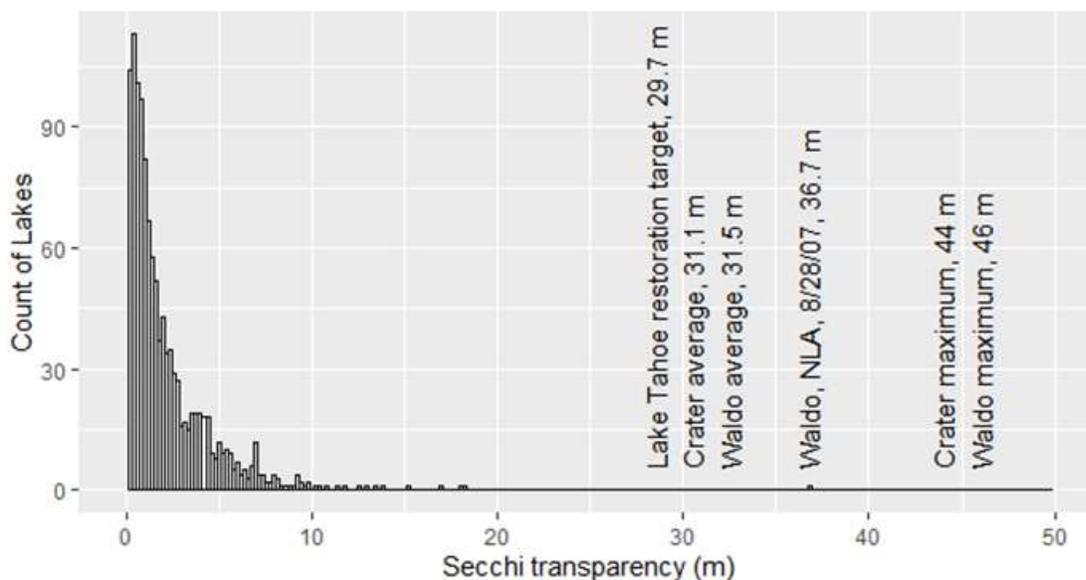
<sup>1</sup>Number of samples; date range of samples.

<sup>2</sup>Chlorophyll fluorescence

Data from: Rich Miller, PSU Center for Lakes; Scott Girdner, Crater Lake National Park.



**Figure 7: Secchi Depths of Selected Oregon Lakes.**  
 From data provided by Rich Miller, PSU Center for Lakes.



**Figure 8: Secchi Depths from the 2007 National Lakes Assessment**

From: Lahontan Regional Water Quality Control Board, Nevada Div. of Environmental Protection (NDEP). 2010. Final Lake Tahoe Total Maximum Daily Load Report, [http://www.waterboards.ca.gov/rwqcb6/water\\_issues/programs/tmdl/lake\\_tahoe/index.shtml](http://www.waterboards.ca.gov/rwqcb6/water_issues/programs/tmdl/lake_tahoe/index.shtml).  
 U.S. Environmental Protection Agency. 2010. National Aquatic Resource Surveys. National Lakes Assessment 2007. Available from U.S. EPA website: <http://www.epa.gov/national-aquatic-resource-surveys/data-national-aquatic-resource-surveys>.

## 2.3 Ecological and Research Value

The National Park Service long-term limnological monitoring program (LTLMP) at Crater Lake began in 1983 and includes four major goals:

1. Developing a reliable database for the lake to be used for comparisons of future conditions.
2. Developing a better understanding of physical, chemical, and biological processes occurring in the lake.
3. Investigating the possibility of short- and long-term changes in the lake.
4. And if changes are found, and human-caused (e.g., pollution), recommending mitigation techniques.

Because of the relative lack of anthropogenic land use impacts, the lake is an important laboratory for studying long-term baseline water quality conditions. Researchers often use Crater Lake as a barometer to measure and describe human impacts on the environment (e.g. air pollution, climate change, invasive species, etc.) because of its pristine quality.

The following is a summary from the Crater Lake Institute about the lake's importance for research:

“Crater lake is a world-class laboratory for studying lakes because of its pristine condition. Because it is preserved in a National Park it is expected that there will be minimal future onsite impacts from human activities. The lake provides scientists and park managers with a gauge for assessing changing environmental conditions external to the Park. Long-term monitoring of Crater Lake has been used to develop a baseline of information about the natural dynamics and complexity of the lake. This baseline will serve as a reference when studying the impacts of global climate change and human activities, such as agriculture and urban growth, on other lakes. Scientists working with the U.S. Geological Survey, the National Park Service, and Oregon State University have systematically studied Crater Lake for the last two decades. Long-term monitoring of this lake is a priority of Crater Lake National Park and will continue far into the future.”

<http://www.craterlakeinstitute.com/general-natural-history-articles/natural-history-flora-and-fauna-articles/two-decades-of-research-at-crater-lake/2/>

There have been 160 taxa of phytoplankton and 12 taxa of zooplankton documented within Crater Lake. Crater Lake is habitat for a rare endemic species of newt, the Mazama newt (*Taricha granulosa mazamae*) (Fig. 6), which has been genetically isolated within the caldera for generations. Researchers are very interested in studying their distribution within the Park and monitoring their population dynamics. Of particular interest is the effect of introduced species on the endemic species unique to the lake. Kokanee salmon, rainbow trout, and signal crayfish are larger non-native (i.e. introduced) organisms found within Crater Lake. There is also a deep-water moss community that exists between 26-140 meters which forms thickly on the slopes around Wizard Island and on the walls of the caldera.



**Figure 9: Endemic *Mazama* newt in Crater Lake (NPS photos).**  
Figure taken from the State of the Lake Report, 2018.

Phytoplankton generally form the base of the food chain in deep lakes. They support larger organisms like zooplankton which in turn support fish. During the summer, phytoplankton form two distinct communities defined by the thermal stratification. The first community lives in the warmer surface water and is predominately comprised of a few species of large diatoms and dinoflagellates. The second community, found in deeper water, has a higher diversity of species. Researchers have noted the zooplankton community in Crater Lake is unusual because there are so few taxa compared to other lakes.

The eruption of the volcano, Mount Mazama, created the caldera that holds Crater Lake. This eruption greatly influenced the region's landscape and ecology. The active hydrothermal features and volcanic activity over the last 400,000 years have contributed to the greater ecoregion. Crater Lake and its surrounding ecosystems are highly unique and largely unaltered by human activity. The park contains diverse communities of vegetation that are highly intact and provide a large degree of connectivity to surrounding areas. This encourages biological diversity and population growth for endemic aquatic and terrestrial species.

In addition to the lake itself, Crater Lake National Park also has several perennial (i.e. seasonal) lakes and ponds, about 250 wetlands, 24 year-round streams, one high elevation bog, and is the headwaters for more than one major river, including the Rogue River. These diverse aquatic habitats surrounding the lake contribute to the large amount of regional biological diversity.

## 2.4 Recreational Value

In 2019, there were 704,512 recreation visitors to the park and the park is considered a leading attraction in southern Oregon. Visits to Crater Lake contribute a significant amount of revenue to the regional economy. Recreational activities include hiking, biking, scenic vistas, camping, staying or dining at the historic Crater Lake Lodge, skiing, snow-shoeing, and boat tours on the lake.

There are three commercial services that operate in Crater Lake National Park, known as concessions. These include Crater Lake Hospitality LLC (providing lodging, scenic tours, retail operations, food service), Crater Lake Trolley (a shuttle company providing scenic and sightseeing tours), and Xanterra Parks and Resorts Inc. (providing retail, lodging, auto, gas and service

stations). In the 2016 fiscal year, revenues for concessions were \$13,413,607. In 2019, there were 54,223 overnight stays within or around the park.

## 2.5 Importance to Native American Tribes

Crater Lake is highly significant to Native American tribes. The Klamath Tribes, which include the Klamath, Modoc and Yahooskin band of the Snake, knew Crater Lake as *gii-was*, meaning "a sacred place." The Cow Creek Umpquas also knew and respected Crater Lake. Native Americans experienced the collapse of Mount Mazama about 7,700 years ago, and have many stories about the creation of Crater Lake and its features. Crater Lake was used as a place for vision quests and prayer, and the surrounding areas were important for their resources and cultural traditions.

## 3. Lake Management

Crater Lake is a unique and highly valued natural resource in Oregon fully contained within Crater Lake National Park, the state's only national park. While there are few threats to Crater Lake at this time, the state's proposed ORW designation will complement and reinforce the National Park Service management objective to maintain the lake's pristine nature while allowing the public to enjoy the lake.

The Foundation Document for Crater Lake (NPS, 2015) articulates the Crater Lake National Park's purpose statement. The purpose statement, shown below, identifies the specific reasons Congress established the park in 1902 and lays the foundation for understanding what is most important about the park.

*CRATER LAKE NATIONAL PARK forever preserves Crater Lake, scenic landscapes, volcanic features, and unique ecological and cultural heritage, and fosters understanding and appreciation through enjoyment, education, and inspiration.*

The Foundation Document also articulates the basis for the Park Service's management planning. The following is among the fundamental resource values for the park:

"Crater Lake National Park's world-renowned caldera holds one of the clearest, bluest, and deepest lakes in the world. Its clarity and color is due in great part to the lack of suspended particulates and extremely low organic productivity. It contains significant and active hydrothermal features, which, among other lake qualities, have made it one of the most extensively monitored lakes of its size in the world. Its impressive scale and geographic setting within the high Cascade Mountains create lasting memories and inspire visitors."

The ORW designation for Crater Lake will reinforce the importance of management planning and monitoring by the Park Service to ensure the lake is protected over time.

## 4. Proposed Rule

The proposed rule amendments would designate Crater Lake an ORW and establish a policy to protect the lake's high water quality and ecological values. The proposed rules amend the Outstanding Resource Water policy within the state's antidegradation policy at OAR 340-041-0004(8) and the basin specific rules for the Klamath Basin at OAR 340-041-0185. DEQ's proposed rule language is intended to recognize that current levels of recreation and tourism activity are part of the baseline and establishes a policy to prevent degradation of current conditions due to additional activity or development. It is not the intent to reduce or remove current recreation and tourism activities, which are themselves one of the exceptional values of these lakes.

The proposed rule establishes the policy goal and prohibits permitted discharges that would degrade water quality. DEQ could allow short term construction stormwater permits where needed to maintain and improve recreation facilities and roads. Discharge permits are issued by DEQ, so DEQ would implement this portion of the rule. The National Park Service manages activities on the lake and in the watershed. Therefore, the park service would meet the ORW policy through its lake and watershed management.

## 5. References

National Park Service, 2015. Foundation Document for Crater Lake National Park.  
[https://www.nps.gov/crla/getinvolved/upload/CRLA\\_Foundation-Document\\_emailsize-508.pdf](https://www.nps.gov/crla/getinvolved/upload/CRLA_Foundation-Document_emailsize-508.pdf)

National Park Service, March 2019. Crater Lake Long-term Limnological Monitoring Program  
*State of the Lake Report: 2018*. Scott Girdner, Mark Buktenica, Jeremy Mack.  
U.S. Department of the Interior National Park Service Crater Lake National Park Crater Lake,  
Oregon

# Appendix A, Federal ORW Regulations

Code of Federal Regulations §131.12 Antidegradation policy and implementation methods.

(a) The State shall develop and adopt a statewide antidegradation policy. The antidegradation policy shall, at a minimum, be consistent with the following:

...(3) Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected....

(b) The State shall develop methods for implementing the antidegradation policy that are, at a minimum, consistent with the State's policy and with paragraph (a) of this section. The State shall provide an opportunity for public involvement during the development and any subsequent revisions of the implementation methods, and shall make the methods available to the public.

[48 FR 51405, Nov. 8, 1983, as amended at 80 FR 51047, Aug. 21, 2015]



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# Table of Contents

<b>Executive Summary .....</b>	<b>1</b>
<b>1. Introduction and Background .....</b>	<b>2</b>
1.1 Brief History .....	2
1.2 Outstanding Resource Waters.....	2
1.3. Citizen Rulemaking Petition.....	3
<b>2. Waldo Lake.....</b>	<b>4</b>
2.1 Description and Location.....	4
2.2 Water Quality.....	6
2.3 Water Quality of Oregon Lakes.....	8
2.4 Ecological and Research Value .....	11
2.5 Recreational Value.....	11
2.6 Importance to Native American Tribes.....	12
<b>3. Lake Management .....</b>	<b>12</b>
<b>4. Proposed Rules.....</b>	<b>13</b>
<b>5. References.....</b>	<b>13</b>

## List of Figures

Figure 1: Location of Waldo Lake in Oregon.....	4
Figure 2: Waldo Lake depth and watershed maps. (From: Atlas of Oregon Lakes, PSU) .....	5
Figure 3: Detail of Waldo Lake, Oregon. (From: Willamette National Forest, online).....	5
Figure 4: pH by depth in Waldo Lake from 1998 to 2003.....	7
Figure 5: Comparison of water conductivity ( $\mu\text{S}/\text{cm}$ ) for different lakes in Oregon.....	7
Figure 6: Secchi Depths of Selected Oregon Lakes.....	10
Figure 7: Secchi Depths from the 2007 National Lakes Assessment .....	10

## List of Tables

Table 1: Secchi disk conditions of Waldo Lake between 1996 and 2003.....	6
Table 2: Trophic Status of Significant Publicly Owned Lakes.....	8
Table 3: Water Quality Data for Selected Oregon Lakes (median values unless otherwise indicated).....	9

# Executive Summary

On April 22, 2019, the Northwest Environmental Defense Center (NEDC) petitioned the Oregon Environmental Quality Commission (the commission) and Oregon Department of Environmental Quality Director Richard Whitman, requesting that the commission adopt rules designating Waldo Lake and its associated wetlands as Outstanding Resource Waters (ORW) of Oregon. In July 2019, the commission granted the petition and directed DEQ to initiate the requested rulemaking. The commission, which oversees the department, also directed DEQ to adopt rules designating Crater Lake an ORW.

The petition also proposed that DEQ adopt a policy to protect the current high water quality and exceptional ecological values of Waldo Lake. The proposed rule amendments would prohibit new or expanded wastewater discharges and limits other activities that would degrade water quality. Exceptions are allowed to respond to emergencies and for restoration or enhancement activities.

Outstanding Resource Waters are high quality waters that have extraordinary or unique character or ecological value, or are critical habitat areas, such that they constitute an outstanding state or national resource. The special water quality and ecological values of these waters must then be protected in accordance with Oregon's antidegradation policy and federal regulations under the Clean Water Act.

Waldo Lake is located in Lane County, Oregon in the high Cascade Mountains. Waldo Lake is remote and has exceptionally high water quality. Classified as an ultra-oligotrophic lake, the waters are renowned for their outstanding clarity and low productivity. The basin is entirely on public land in the Willamette National Forest. A large portion of the lake basin is managed as wilderness and semi-primitive nonmotorized dispersed recreation. There are three developed campgrounds and one horse camping facility on the lake. Waldo Lake is the headwater source of the North Fork of the Middle Fork Willamette River, which is a Wild and Scenic river. Protecting Waldo Lake will also help protect the quality of water in this river.

# 1. Introduction and Background

This document provides background and supporting information for DEQ's recommendation to designate Waldo Lake an Outstanding Resource Water and to adopt a policy to protect the existing high water quality and ecological and recreational values of Waldo Lake, as proposed by a citizen petition.

Waldo Lake is remote and pristine. Its waters are renowned for their outstanding clarity. The lake water is chemically similar to distilled water. The lake's clarity has averaged 125 feet (38.1 meters) since 2001 and reached as deep as 160 feet (48.8 meters).<sup>1</sup> Designating Waldo Lake an ORW provides an opportunity to ensure that this unique lake is protected from degradation for future generations. Waldo Lake qualifies as an ORW because it has exceptionally high quality water, is essential habitat for many species, and provides exceptional opportunities for research and outdoor recreation.

DEQ worked with the U.S. Forest Service and other stakeholders to review the antidegradation policy to protect the lake's water quality, taking into consideration the Willamette National Forest's management responsibilities for Waldo Lake and its watershed.

This support document together with the proposed rule language and the fiscal impact statement will be available for public comment. Following public comment, DEQ will make a recommendation to the commission about whether to designate Waldo Lake an ORW and will propose a final water quality protection policy to accompany the designation.

## 1.1 Brief History

In April 2019, NEDC and several co-petitioners petitioned the EQC requesting that the commission designate Waldo Lake an ORW. There was overwhelming public support for the ORW designation. In July 2019, the commission granted the petition and directed DEQ to initiate a rulemaking process to consider the proposed rules. At the same time, the commission directed DEQ to include the designation of Crater Lake as an ORW in the rulemaking process. The citizen petition and the 2019 DEQ Staff Reports for Waldo Lake and for Crater Lake may be found on the following website:

<https://www.oregon.gov/deq/wq/Pages/WQ-Standards-ORWO.aspx>.

Oregon's first ORW is the North Fork of the Smith River in southwest Oregon. The commission designated this ORW in 2017, also in response to a citizen rulemaking petition. The rule language proposed in the petition for Waldo Lake is identical to the rule language that was adopted for the North Fork of the Smith River.

## 1.2 Outstanding Resource Waters

Oregon's water quality standards define three classifications of state waters: water quality limited, high quality, and Outstanding Resource Waters. ORWs are high quality waters that have extraordinary or unique character or ecological value, or are critical habitat areas, such that they constitute an outstanding state or national resource. Oregon's ORW rules may be found at [Oregon Administrative Rules 340-041-0004\(8\)](#) and [340-041-0002\(45\)](#).

Oregon rules identify the following as priority waters for ORW consideration: (A) those in state and national Parks; (B) National Wild and Scenic Rivers; (C) State Scenic Waterways; (D) those in state and national wildlife refuges; and (E) those in federally designated wilderness areas.

Waldo Lake is wholly within the Willamette National Forest and largely within a wilderness area. It is also the headwaters of a national wild and scenic river, the North Fork of the Middle Fork Willamette River.

The ORW designation may only be granted by the EQC through rulemaking. Along with the designation, the rules must also include a policy to protect and maintain the exceptional qualities and values of the waterbody.

### 1.3. Citizen Rulemaking Petition

Oregon law allows an interested person to petition an agency to promulgate, amend, or repeal a rule. [Oregon Revised Statute 183.390](#) and administrative rules at OAR [340-011-0046](#) and [137-001-0070](#) describe the requirements for the petition and for agency review. The petition to amend a rule must clearly show the proposed rule revisions and provide facts and arguments supporting the proposal. According to the statute, the agency must invite public comment on the petition and then act within 90 days of receiving the petition. Upon its review, the commission may:

1. Deny the petition,
2. Direct DEQ to initiate rulemaking proceedings based on the rules proposed by the petition, or
3. Deny the petition but direct DEQ to take some other action.

As OAR 137-001-0070(3) requires, DEQ invited public comment on the rule amendments the petition proposed and requested comment on whether options exist for achieving the rule's substantive goals in a way that reduces the negative economic impact on businesses. DEQ received 2,155 comments from 1,945 citizens and five organizations. The comments are summarized in the staff report on the petition, which may be found on the following website: <https://www.oregon.gov/deq/wq/Pages/WQ-Standards-ORWO.aspx>. In July 2019, the commission granted the petition and directed DEQ to initiate rulemaking.

The rulemaking process will include another opportunity for public comment on the petition's proposed rule language. DEQ may recommend revisions to the proposed rule language in response to public comment if the revisions are appropriate or clarifying.

The Waldo Lake ORW petition proposes to amend [OAR 340-041-0004\(8\)](#), the Outstanding Resource Waters Policy in Oregon's Antidegradation rule, to add Waldo Lake and its associated wetlands as Outstanding Resource Waters. The petition also proposes to amend [OAR 340-041-0345](#), Water Quality Standards and Policies for the Willamette Basin, to protect the current high water quality, exceptional ecological values, and existing and designated uses of these waters. The proposed rule amendments would prohibit new or expanded wastewater discharges and other activities that would degrade water quality. Exceptions are allowed to respond to emergencies and for restoration or enhancement activities.

## 2. Waldo Lake

### 2.1 Description and Location

Waldo Lake is located in Lane County, in west central Oregon, as shown in Figures 1. Occupying 9.8 square miles (6,298 acres) in the Willamette National Forest, Waldo Lake sits near the western crest of the Cascades range at 5,414 feet elevation. Waldo Lake is the second deepest lake in Oregon with a maximum depth of 420 feet. The lake is known for its clarity and pristine water quality. The Waldo Lake Wilderness area surrounds more than half of the lake. The wilderness designation helps to keep the forest ecosystems of the watershed healthy, which in turn protects the water quality of the lake. The lake is the source of the nationally designated Wild and Scenic North Fork of the Middle Fork Willamette River.<sup>ii</sup>

Waldo Lake is known as an exceptional recreational resource for locals and visitors alike. Tourists travel from around the nation and the world to enjoy the lake's pristine beauty and solitude of the lake. While gasoline motor boats have been banned from Waldo Lake, boating with electric motors and nonmotorized boats is still a common activity. Visitors also hike, camp, mountain bike, and enjoy other recreational activities.<sup>iii</sup>

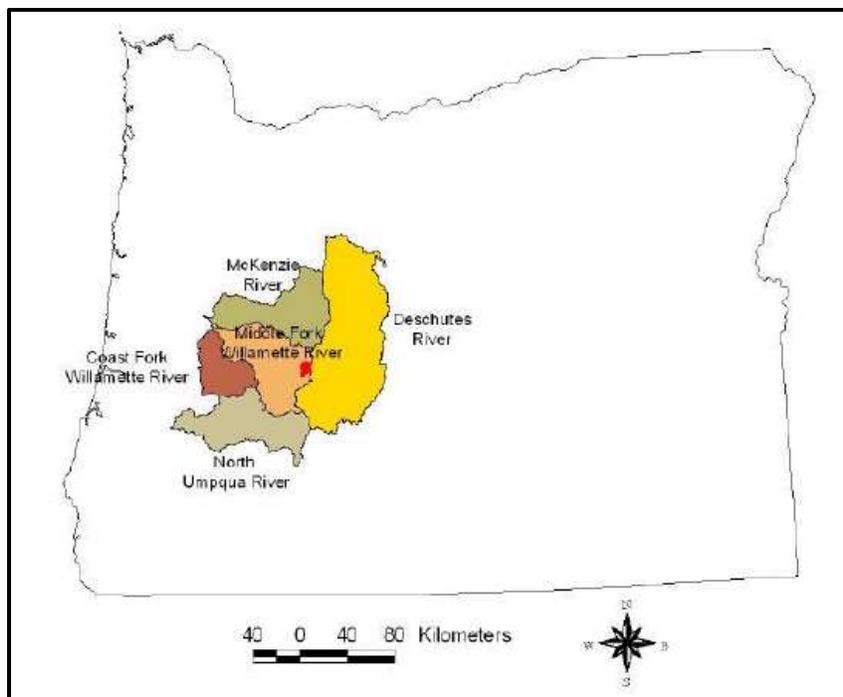


Figure 1: Location of Waldo Lake in Oregon.



## 2.2 Water Quality

Waldo Lake is thought to be one of the most oligotrophic large lakes in the world. This is a term used for lakes with a scarcity of nutrients and low productivity, resulting in exceptional water clarity and outstanding water quality.<sup>iv</sup> A Secchi Transparency study was conducted from 1990 to 2003. On days where wave and sky conditions provided optimal weather conditions, transparency averaged 37 meters (121 feet). On days where cloud cover and waves due to winds produced more difficult weather conditions for measuring Secchi depth, transparency averaged 33 meters (108 feet) (see Table 1 and Figure 5 below).<sup>v</sup> A record Secchi depth of 47.9 meters (157 feet) was recorded in 1938.<sup>vi</sup> The lake's clarity is due to a low concentration of suspended particles and a low concentration of dissolved organic substances.<sup>vii</sup>

**Table 1: Secchi disk conditions of Waldo Lake between 1996 and 2003.**

"Good" conditions		"Bad" conditions	
Date	Secchi Disk Reading (m)	Date	Secchi Disk Reading (m)
6/20/1998	37.5	9/6/1996	20
6/20/1998	39.1	9/19/1999	35
8/16/1998	33	9/19/1999	35.5
7/26/1999	40	5/27/2001	33
7/26/1999	40.5	6/29/2002	32.2
8/31/1999	35	7/29/2002	36.2
10/9/1999	34	7/29/2002	36.5
10/9/1999	34.2	9/21/2003	34
7/7/2001	41.3	9/21/2003	35
8/19/2001	39.8	9/21/2003	36
9/9/2001	34.2		
8/19/2002	35.8		
Total days 9		Total days 6	
Average 37 m		Average 33.3 m	

Waldo Lake occupies about 32 percent of its watershed (see Figure 2), which means it has a small watershed relative to the size of the lake. A small watershed limits the amount of sediment and nutrients that are carried into the lake from the landscape. In addition, Waldo Lake has no permanent inlet to bring nutrients into the lake, which are needed for plant growth.<sup>viii</sup> The precipitation that falls on the watershed arrives indirectly to the lake by way of over land flow. This is significant because it means the condition of the surrounding watershed area plays an important role in the lake's health and quality. Related to the lake's low productivity, Waldo Lake is naturally fishless. In addition, the lack of algal growth likely contributes to the lake's stable pH. Measurements between 1998 and 2003 indicate the pH rarely exceeds 6.5 (Fig. 4).

An early investigation found that the lake's water was extremely dilute and chemically similar to distilled water.<sup>ix</sup> Waldo Lake has the lowest average water conductivity compared to other lakes in Oregon (Figure 5, Table 3). Because the watershed is only twice as large as the lake, the amount of water supplied to the lake each year is a small fraction of the lake's total volume. Replacing the lake's entire volume at this input rate would require roughly 30 years.<sup>x</sup> The lake's long residence time makes the lake vulnerable to

pollutants that may be introduced to the lake from outside the watershed or due to disturbance within the watershed.

In addition to scientists with the U.S. Forest Service, there are numerous partners involved in long-term research of Waldo Lake. Partners include scientists from the U.S. Geological Survey, Portland State University, and Oregon State University. Some of these studies were compiled into Volume 16 of *Lake and Reservoir Management* (2000), the Journal of the North American Lake Management Society. Long-term water quality monitoring parameters include: temperature, DO, pH, turbidity, transparency, Photosynthetically Active Radiation, and light absorption. Water chemistry parameters include total phosphorus, orthophosphate, and total nitrogen. From 1986 to 1995, the measured range of nitrite/nitrate was <1-3  $\mu\text{g/L}$ , total phosphorus was <1-13  $\mu\text{g/L}$ , and orthophosphate was <1-7  $\mu\text{g/L}$ .<sup>xi</sup> In addition, biological parameters including phytoplankton, zooplankton, chlorophyll, and primary productivity have also been monitored long-term.<sup>xii</sup> See Table 3 below for additional water quality data for Waldo Lake. These parameters and possibly others will continue to be measured and examined in the future.

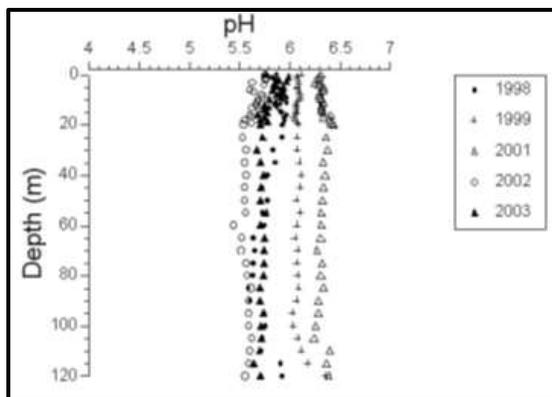


Figure 4: pH by depth in Waldo Lake from 1998 to 2003.

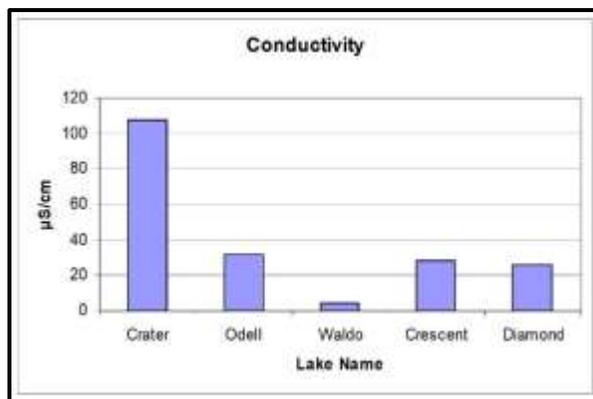


Figure 5: Comparison of water conductivity ( $\mu\text{S/cm}$ ) for different lakes in Oregon.

## 2.3 Water Quality of Oregon Lakes

There are over 6,000 lakes in Oregon, with a combined surface area of over 500,000 acres. There are more than 1,400 named lakes in the state and thousands of unnamed lakes, reservoirs, farm ponds, mill ponds, marshes and sloughs ranging in size from less than 1 acre to more than 90,000 acres (Klamath Lake). Oregon's lakes are found in a wide variety of geographic settings ranging from coastal dunes, river oxbows, mountain settings and high desert locations.

The classification system most widely applied to lakes and reservoirs is the trophic classification system. Lakes are ranked according to their biological productivity: unproductive lakes are termed oligotrophic (“little nourished”) and productive lakes are termed eutrophic (“well nourished”). The productivity of a lake is determined by a number of physical, biological and chemical characteristics – including light transparency (secchi depth), algal growth (chlorophyll a) and nutrients (phosphorus and nitrogen). Listed in Table 2 below is a summary of the trophic statuses for 201 of the larger lakes and reservoirs in Oregon based on data in the Atlas of Oregon Lakes.

**Table 2: Trophic Status of Significant Publicly Owned Lakes**  
From Atlas of Oregon Lakes (Johnson and others, 1985)

	<b>Number of Lakes</b>	<b>Acreage of Lakes</b>
Lakes Assessed	201	491,255
<b>Ultra-Oligotrophic</b>	<b>12</b>	<b>8,752</b>
Oligotrophic	46	26,528
Mesotrophic	72	75,212
Eutrophic	60	191,310
Hypereutrophic	11	189,453

Most of the ultra-oligotrophic and oligotrophic lakes are found in the Cascade and Willowa mountains. Of these high quality waters, Crater Lake and Waldo Lake stand out as being very unique, particularly for lakes of their size. Both are extremely clear (high secchi depths) with low productivity (see Figure 6 below). Waldo is further unique in its low ionic strength (specific conductivity), which is similar to distilled water.

Table 3 below shows specific conductivity data and other water quality data for a several Oregon lakes. The classifications for the lakes in this table are: Waldo = ultraoligotrophic, Crater = oligotrophic, Odell = mesotrophic, Diamond and Tenmile – eutrophic; and Klamath = hypereutrophic.



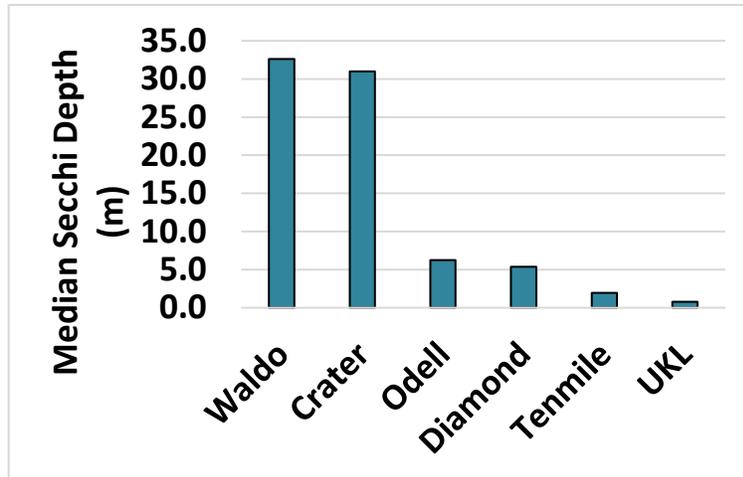
**Table 3: Water Quality Data for Selected Oregon Lakes**  
 (median values unless otherwise indicated)

Lake	Basin	Water Clarity (Secchi depth)		Total Nitrogen		Total Phosphorus		Chlorophyll-a		Specific Conductivity	
		meters	Samples <sup>1</sup>	ug/l	Samples <sup>1</sup>	ug/l	Samples <sup>1</sup>	ug/l	Samples <sup>1</sup>	ug/l	Samples <sup>1</sup>
Waldo	Middle Fork Willamette	32.6	N=82 1986-2019	40	N=47 2001-2014	0.5	N=104 2001-2014	0.1	N=72 2001-2014	3	N=379 1986-2019
Crater	Klamath	31.1 mean	N=222 1978-2019 Jul-Sep	12 mean	N= 412 1985-2004 Jul-Sept	25 mean	N=572 1985-2019 Jul-Sep	0.12	N=1218 1990-2018 Upper 200 meters	116 mean	N=1164 1983-2019 Jul-Sep
Odell	Deschutes	6.3	N=22 2004, 2019	183	N=11 2019	20	N=27 2004, 2019	6.2	N=27 2004, 2019	33	N=148 2004, 2019
Diamond	Umpqua	5.4	N=279 2007-2019	340	N=76 2007-2019	24	N=76 2007-2019	3.7	N=45 2007-2019	37	N=75 2007-2019
Upper Klamath	Klamath	0.8	N=11,660 1990-2015	1830	N=2699 1990-2015	136	N=2772 1990-2015	54	N=2486 1990-2015	111	N=9329 1990-2015
Ten Mile	South Coast	1.2-2.7	N unknown 2013-2014	51	N unknown 2013-2014	27	N unknown 2013-2014	1-260	N unknown 2013-2014	55-75	N unknown 2013-2014

<sup>1</sup>Number of samples; date range of samples.

<sup>2</sup>Chlorophyll fluorescence

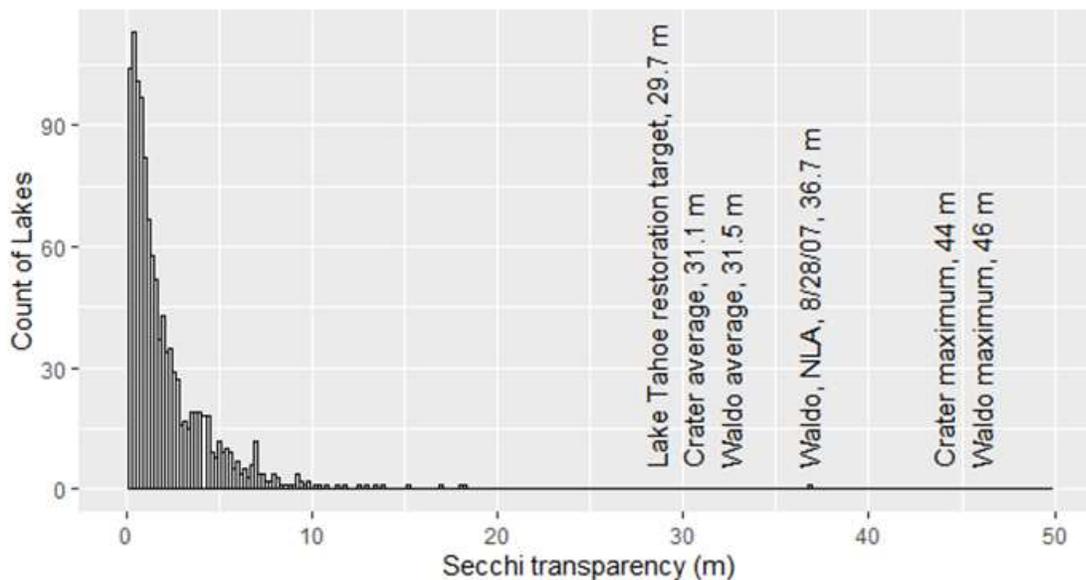
Data from: Rich Miller, PSU Center for Lakes; Scott Girdner, Crater Lake National Park.



**Figure 6: Secchi Depths of Selected Oregon Lakes.**  
 From data provided by Rich Miller, PSU Center for Lakes.

Figure 6 shows how water clarity of selected Oregon lakes compare. This illustrates how extraordinarily clear Waldo and Crater Lakes compare even to other Cascade lakes, such as Odell and Diamond Lakes. The data are also shown in Table 3 above.

Figure 7 shows a histogram of Secchi data from the 2007 National Lakes Assessment, which includes 1184 lakes. This graph also shows how exceptional Waldo and Crater are in terms of clarity. The average secchi depth restoration target for Tahoe Lake is included for comparison. Tahoe Lake, in the Sierra Mountains in California is also known for its clarity and has been designated as an ORW by the state of California.



**Figure 7: Secchi Depths from the 2007 National Lakes Assessment**

From: Lahontan Regional Water Quality Control Board (Lahontan), Nevada Division of Environmental Protection (NDEP). Final Lake Tahoe Total Maximum Daily Load Report Lahontan Water Board, South Lake Tahoe. Carson City, NV: California, and Nevada Division of Environmental Protection; 2010 [340 pp., [http://www.waterboards.ca.gov/rwqcb6/water\\_issues/programs/tmdl/lake\\_tahoe/index.shtml](http://www.waterboards.ca.gov/rwqcb6/water_issues/programs/tmdl/lake_tahoe/index.shtml)].

U.S. Environmental Protection Agency. 2010. National Aquatic Resource Surveys. National Lakes Assessment 2007 (data and metadata files). Available from U.S. EPA website: <http://www.epa.gov/national-aquatic-resource-surveys/data-national-aquatic-resource-surveys>.  
Date accessed: 2020-06-17.

## 2.4 Ecological and Research Value

Waldo Lake is situated in the High Cascades in the Willamette National Forest. Congress protected the surrounding 39,000-acres of wilderness in 1984 to preserve the area's unspoiled forests, scenic mountains, and backcountry recreation.<sup>13</sup> This wilderness is approximately 98% forested, mostly made up of Douglas fir, Pacific silver fir,<sup>14</sup> and the largest old growth Mountain Hemlock stand in the state.<sup>15</sup> Waldo Lake, together with the surrounding forest environment, supports rare species of aquatic and land based species, including moss, unique birds, and a variety of threatened carnivores. Waldo Lake is the source of the North Fork of the Middle Fork of the Willamette River and therefore connected to additional organisms native to the Pacific Northwest.

Unlike fish, which are not native to the lake, the rare semi-aquatic leafy liverwort, *Marsupella emartinata* var. *aguatica*, naturally grows on rocks in the splash-zone of the Waldo Lake outlet. This is the only documented occurrence of this moss in Western North America. Other liverworts grow at incredible depths due to the lake's clarity, which allows light to penetrate deep into the lake. Two species of salamanders have also been observed in Waldo Lake: the northwestern salamander, *Ambystoma gracile*; and the rough skinned newt, *Trachia granulosa*. Only adults and larvae of these species were found in Waldo Lake. Small ponds adjacent to the lake are used as a place to lay eggs and for early larval development.<sup>16</sup> Frog and toad species are also abundant in the near shore areas of Waldo Lake. These include: the cascade frog, *Rana cascadae*; the western toad, *Bufo boreas*; and the tree frog, *Hyla regilla*.<sup>17</sup>

Waldo Lake is the source of the North Fork of the Middle Fork Willamette River which was designated as a Wild and Scenic river in 1988. Roosevelt elk use this extensive and ecologically diverse river corridor throughout the year, as well as blacktail deer, black bear, and cougar.<sup>18</sup> Protecting Waldo Lake will help protect the quality of water in the Willamette River.

## 2.5 Recreational Value

Waldo Lake is a recreation destination that supports the tourist economy of the surrounding communities. In addition to being a retreat for local families and outdoors enthusiasts, tourists come from around the region and the world to see Waldo Lake's uniquely clear and vibrant opal waters and experience fishing, swimming, and boating.<sup>19</sup> The lake's attraction for recreation is directly related to its exceptional water quality. In 2010, the Oregon State Marine Board banned motorboats on Waldo Lake in an effort to keep the lake's water quality pristine. Electric motors and human-powered boats are still allowed.

Around Waldo Lake, there are over 200 designated campsites in three different campgrounds: North Waldo, Islet, and Shadow Bay. Campsites are often reserved up to six months in advance and are typically full in August and September. Campgrounds are well maintained and equipped with sanitation stations and vault toilets to prevent polluting the groundwater.<sup>20</sup> The popular shoreline trail provides visitors with unique views of the lake and the High Cascades while meandering through a high-elevation forest. The Harralson Horse Camp and the North Waldo are popular trailheads because of their beauty and access to countless miles of trails.<sup>21</sup>

Waldo Lake's surrounding lands offer spectacular and accessible camping, horseback riding, mountain biking, and hiking. It is also a popular destination for wilderness enthusiasts since it is the main access

point for the Waldo Lake Wilderness area, which is 98% forested.<sup>22</sup> There are ten trailheads providing access to 70 miles of trails in the Wilderness area. The lake is located near the Pacific Crest Trail, which sees thousands of hikers every year.<sup>23</sup> The Pacific Crest Trail runs through the wilderness area, giving hikers from all over the world the opportunity to use Waldo Lakes' shores as a break from days of backpacking.

## 2.6 Importance to Native American Tribes

Thousands of years before white settlers arrived, Native American Tribes inhabited the area surrounding Waldo Lake. The tribes used various places in the surrounding area as temporary camps and food gathering sites.<sup>24</sup>

# 3. Lake Management

Waldo Lake is entirely contained within the Willamette National Forest and is managed by the U.S. Forest Service. The Waldo Lake Wilderness area, a 36,572 acre area, encompasses a large portion of the Waldo Lake watershed. The proposed ORW designation by the state will complement and reinforce the shared Forest Service management objectives to protect and maintain the lake's pristine nature while allowing for the enjoyment of the lake by the public. Waldo Lake and its watershed are managed for recreational opportunities that support the economy of surrounding communities. These activities include camping, boating, hiking, fishing, mountain biking, horseback riding and swimming.

In order to protect the pristine water quality of the lake, the Forest Service has installed vault toilets in the campgrounds so that human waste is pumped and removed rather than seeping into the ground where it could contribute nutrients to the lake. Forest Service regulations ban camping on islands, prohibit campfires on islands and ban the use of chainsaws and generators in the non-developed areas around the lake. In addition, fire management staff have been directed to not use Waldo Lake as a water source for aerial fire suppression purposes.

The state has banned internal combustion boat motors on Waldo Lake. The use of electric boat motors on Waldo Lake is allowed however there is a 10 mph speed limit for boats with electric motors over the majority of the lake with the exception of a 5 mph speed limit within 300 feet of boat ramps. Float planes are also banned from landing on the lake. These regulations may be found at OAR 250-020-0221 and ORS 830.187.

The Oregon Department of Fish and Wildlife no longer stocks the lake with fish. In addition, the lake is designated a State Scenic Waterway.

The ORW designation for Waldo Lake will reinforce the importance of management planning and monitoring by the Forest Service to ensure the lake is protected over time.

## 4. Proposed Rules

The proposed rule amendments for Waldo Lake were submitted through a citizen rulemaking petition. The proposed rules amend the Outstanding Resource Water policy within the state's antidegradation policy at OAR 340-041-0004(8) and the basin specific rules for the Willamette Basin at OAR 340-041-0345 to designate Waldo Lake an ORW and establish a policy to protect the lake's high water quality and ecological values. The proposed rule prohibits new or increased permitted discharges that would degrade water quality. DEQ can revise the proposed language in response to public comment.

DEQ's proposed rule language for the Crater Lake ORW is slightly different with the intent to recognize that current levels of recreation and tourism activity are part of the baseline and co-exist with current high water quality conditions and are one of the exceptional values of these lakes.. The rule establishes a policy to prevent degradation of the current conditions due to additional activity or development. The language proposed for Crater Lake also makes it clear that DEQ could allow short term construction stormwater permits where needed to maintain and improve recreation facilities and roads. Discharge permits are issued by DEQ, so DEQ would implement this portion of the rule. The US Forest Service manages activities on the lake and in the watershed. Therefore, the US Forest Service would meet the ORW policy through its lake and watershed management.

## 5. References

Lake and Reservoir Management, Volume 16. North American Lake Management Society. 2000.

Land and Resource Management Plan for the Willamette National Forest. U.S. Forest Service. 1990.

Waldo Lake Long-Term Monitoring Field Sampling Quality Assurance and Quality Control Project Plan. Prepared by Laura Johnson, Center for Lakes and Reservoirs, Portland State University. December 2003.

# Appendix A, Federal ORW Regulations

Code of Federal Regulations §131.12 Antidegradation policy and implementation methods.

(a) The State shall develop and adopt a statewide antidegradation policy. The antidegradation policy shall, at a minimum, be consistent with the following:

...(3) Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected....

(b) The State shall develop methods for implementing the antidegradation policy that are, at a minimum, consistent with the State's policy and with paragraph (a) of this section. The State shall provide an opportunity for public involvement during the development and any subsequent revisions of the implementation methods, and shall make the methods available to the public.

[48 FR 51405, Nov. 8, 1983, as amended at 80 FR 51047, Aug. 21, 2015]

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- <sup>i</sup> Center for Lakes and Rivers. Portland State University comment letter. 2019.
- <sup>ii</sup> Wild and Scenic Rivers. 16 USC 1274: Component rivers and adjacent lands.
- <sup>iii</sup> The Oregon Encyclopedia. *Waldo Lake*. [https://oregonencyclopedia.org/articles/waldo\\_lake/#.W-OFypnKiRs](https://oregonencyclopedia.org/articles/waldo_lake/#.W-OFypnKiRs). 2018.
- <sup>iv</sup> Atlas of Oregon Lakes. Waldo Lake. <https://aol.research.pdx.edu/lakes/17090001020920>. 2019.
- <sup>v</sup> Mark Sytsma, et al., Center for Lakes and Reservoirs Department of Environmental Sciences and Resources, Portland State University, *Waldo Lake Research in 2003*. 2004. p 48.
- <sup>vi</sup> Douglas W. Johnson. *Waldo Lake, Oregon: Eutrophication of a Rare, Ultraoligotrophic, High-Mountain Lake*. 2000. p 4.
- <sup>vii</sup> Mark Sytsma, et al., Center for Lakes and Reservoirs Department of Environmental Sciences and Resources, Portland State University, *Waldo Lake Research in 2003*. 2004. p 42.
- <sup>viii</sup> U.S. Forest Service, *Waldo Lake Area*. <https://www.fs.usda.gov/recarea/willamette/recarea/?recid=4528>. 2019.
- <sup>ix</sup> Douglas W. Johnson. *Waldo Lake, Oregon: Eutrophication of a Rare, Ultraoligotrophic, High-Mountain Lake*. 2000. p 2.
- <sup>x</sup> Douglas W. Johnson. *Waldo Lake, Oregon: Eutrophication of a Rare, Ultraoligotrophic, High-Mountain Lake*. 2000. p 5.
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- <sup>xii</sup> *Id.*
- <sup>13</sup> Oregon Wild, *Waldo Lake- Gem of the Cascades*. 2019.
- <sup>14</sup> U.S. Forest Service. *Waldo Lake Wilderness*. <https://www.fs.usda.gov/recarea/willamette/recreation/recarea/?recid=4482>. 2019.
- <sup>15</sup> Sierra Club. The Juniper Group. *Keep Waldo Wild: Our Campaign to Protect Lands Surrounding Oregon's Waldo Lake*. <https://oregon2.sierraclub.org/juniper-group/waldo/keep-waldo-wild>. 2018.
- <sup>16</sup> U.S Forest Service, *North Fork of the Middle Fork Willamette River Watershed Analysis*, 1995.
- <sup>17</sup> *Id.*
- <sup>18</sup> National Wild and Scenic Rivers System. *Willamette River*. <https://www.rivers.gov/rivers/willamette.php>. 2018.
- <sup>19</sup> United States Department of Agriculture Forest Service, *Waldo Lake Wilderness*, Willamette National Forest, <https://www.fs.usda.gov/recarea/willamette/recreation/recarea/?recid=4482> (last visited April 14th, 2019).
- <sup>20</sup> United States Department of Agriculture Forest Service, *Waldo Lake Area*, Willamette National Forest, 2019.
- <sup>21</sup> *Id.*
- <sup>22</sup> *Id.*
- <sup>23</sup> Pacific Crest Trail Association. Waldo Lake. <https://www.pcta.org/journalist/post/waldo-lake/>. 2014.
- <sup>24</sup> The Oregon Encyclopedia. *Waldo Lake*. [https://oregonencyclopedia.org/articles/waldo\\_lake/#.W-OFypnKiRs](https://oregonencyclopedia.org/articles/waldo_lake/#.W-OFypnKiRs). 2018.



State of Oregon Department of Environmental Quality

## List of commenters

### Waldo and Crater Lake Outstanding Resource Water Designation 2020 Rulemaking

The table below lists people and organizations that submitted public comments about the proposed rules by the deadline, and the method by which they provided comment. Original comments are on file with DEQ.

ID #	Name of Commenter		Affiliation or organization	State	Method of providing comment
1	Vickie	Whiteaker	NA	NA	Online submittal
2	Richard	Wilen	NA	OR	Online submittal
3	Steve	Brehm	NA	OR	Online submittal
4	Lisa	Jamieson	NA	NA	Online submittal
5	Bob	Bumstead	NA	NA	Online submittal
6	Malia	Gibbons	NA	NA	Online submittal
7	Sherrie	Sims	NA	NA	Online submittal
8	Debbie	Willer	NA	OR	Online submittal
9	Clint	Brumitt	NA	OR	Online submittal
10	Mike	Bullington	NA	OR	Online submittal
11	Richard	Whi Sheard	NA	OR	Online submittal
12	Chandra	LeGue	NA	OR	form email of support
13	Arran	Robertson	NA	OR	form email of support
14	Jan	Stone	NA	OR	form email of support
15	Thomas	Keys	NA	OR	form email of support
16	Judy	Heumann	NA	OR	form email of support
17	Rich	InLove	NA	OR	form email of support
18	Amanda	Stanley	NA	OR	form email of support
19	Christopher	Pond	NA	OR	form email of support
20	Kurtis	Hough	NA	OR	form email of support
21	Scott	Hillson	NA	OR	form email of support
22	Zed	Langston	NA	OR	form email of support
23	Melinda	Essig	NA	OR	form email of support
24	Ute	Baker	NA	OR	form email of support
25	Nancy	Gronowski	NA	OR	form email of support
26	Corina	Aleman	NA	OR	form email of support
27	Erin	Quinn	NA	OR	form email of support

28	Deborah	Houshour	NA	OR	form email of support
29	Ian	Shelley	NA	OR	form email of support
30	Britton	Anderson	NA	OR	form email of support
31	Jennifer	Hauge	NA	OR	form email of support
32	Teresa	Mueller	NA	OR	form email of support
33	Sue	Tarjan	NA	OR	form email of support
34	Michele	Walters	NA	OR	form email of support
35	Kathleen	Roche	NA	OR	form email of support
36	Marilyn	Stinnett	NA	OR	form email of support
37	Sandra	Less	NA	OR	form email of support
38	Kara	Brody	NA	OR	form email of support
39	kathy	wilburn	NA	OR	form email of support
40	Dan	Sherwood	NA	OR	form email of support
41	Carolyn	Bond	NA	OR	form email of support
42	S	Klof	NA	OR	form email of support
43	Amy	Lafferty	NA	OR	form email of support
44	Shannon	Hunter	NA	OR	form email of support
45	Benton	Elliott	NA	OR	form email of support
46	Grace	Neff	NA	OR	form email of support
47	Dana	Weintraub	NA	OR	form email of support
48	Ann	Cobban	NA	OR	form email of support
49	Pamela	Sieck	NA	CA	form email of support
50	Eric	DeBord	NA	OR	form email of support
51	dorinda	kelley	NA	OR	form email of support
52	Valoree	Hummel	NA	OR	form email of support
53	Susanna	Askins	NA	OR	form email of support
54	Martin	Herrera	NA	OR	form email of support
55	Linda	Littlefield	NA	OR	form email of support
56	Tara	Cornelisse	NA	OR	form email of support
57	Steve	Sheehy	NA	OR	form email of support
58	Lawrence	Nagel	NA	OR	form email of support
59	Bill	Gawlowski	NA	OR	form email of support
60	Bobbie	Jansen	NA	OR	form email of support
61	Richard	Felley	NA	OR	form email of support
62	Bobbie	Jansen	NA	OR	form email of support
63	Bob	Hannigan	NA	OR	form email of support
64	Michael	Price	NA	OR	form email of support
65	ERIC	LUNDBERG	NA	OR	form email of support
66	Jeffrey L	Clark	NA	OR	form email of support

67	Charles	Townsend	NA	OR	form email of support
68	Judy	Kinsman	NA	OR	form email of support
69	Kay	Hagen	NA	OR	form email of support
70	Darla	Sadler	NA	OR	form email of support
71	Carolyn	Latierra	NA	OR	form email of support
72	Phil	Goldsmith	NA	OR	form email of support
73	John	Nuffer	NA	OR	form email of support
74	Beth	Malitz	NA	OR	form email of support
75	Bonnie	Kuppler	NA	OR	form email of support
76	Sandra	Mann	NA	OR	form email of support
77	Cheryl	Hunter	NA	OR	form email of support
78	Sara	Pritt	NA	OR	form email of support
79	Jeffrey	Richardson	NA	OR	form email of support
80	Roger	Dorband	NA	OR	form email of support
81	Debra	Kaye	NA	OR	form email of support
82	Edward	Necker	NA	OR	form email of support
83	Karen	Lillebo	NA	OR	form email of support
84	don	kuhns	NA	OR	form email of support
85	Paul	Borcherding	NA	OR	form email of support
86	Michele	Frisella	NA	OR	form email of support
87	Ann	Hollyfield	NA	OR	form email of support
88	Paula	Clarke	NA	OR	form email of support
89	Jill	Wyatt	NA	OR	form email of support
90	Joan	Rolfe	NA	OR	form email of support
91	Rick	Ray	NA	OR	form email of support
92	charles	mcsweeney	NA	OR	form email of support
93	Abigail	Fowle	NA	OR	form email of support
94	Andrew	Sheridan	NA	OR	form email of support
95	Carol	Turtle	NA	OR	form email of support
96	Michael	Burmester	NA	OR	form email of support
97	Margot	Fetz	NA	OR	form email of support
98	Ellen	Yarnell	NA	OR	form email of support
99	Janet	Elgin	NA	OR	form email of support
100	John	Barger	NA	OR	form email of support
101	Marie	Wakefield	NA	OR	form email of support
102	Deborah	Honthaner	NA	OR	form email of support
103	Steph	Spencer	NA	OR	form email of support
104	Justin	Loveland	NA	OR	form email of support
105	Michael	Edwards	NA	OR	form email of support

106	Theresa	Brand	NA	OR	form email of support
107	Stephen	Bachhuber	NA	OR	form email of support
108	Martin	Albert	NA	OR	form email of support
109	Dave	Willis	NA	OR	form email of support
110	Michelle	West	NA	OR	form email of support
111	Jabrila	Via	NA	OR	form email of support
112	nancy	webster	NA	OR	form email of support
113	Lana	Lindstrom	NA	OR	form email of support
114	Richard	Paul Glass	NA	OR	form email of support
115	Christine	VanHalder	NA	OR	form email of support
116	Kris	Ebbe	NA	OR	form email of support
117	David	Brewer	NA	OR	form email of support
118	Ryan	Moore	NA	OR	form email of support
119	Andrea	Beardsley	NA	OR	form email of support
120	Chris	Lazarus	NA	OR	form email of support
121	Stacy	Flaherty	NA	OR	form email of support
122	Diane	Frank	NA	OR	form email of support
123	Regna	Merritt	NA	OR	form email of support
124	A.	Todd	NA	OR	form email of support
125	Diana	Pace	NA	OR	form email of support
126	Ciry	Null	NA	OR	form email of support
127	David	Via	NA	OR	form email of support
128	Robin	Cochran	NA	OR	form email of support
129	Leslie	Shenkin	NA	OR	form email of support
130	dana	Bleckinger	NA	OR	form email of support
131	Craig	richter	NA	OR	form email of support
132	Jane	Bicquette	NA	OR	Online submittal
133	George	Hug	NA	OR	form email of support
134	Mike	Brinkley	NA	OR	form email of support
135	Phoenix	Oaks	NA	OR	form email of support
136	Ted	LaPage	NA	OR	form email of support
137	David	Ibbotson	NA	OR	form email of support
138	Lucas	Miller	NA	OR	form email of support
139	Milton	Nelson	NA	OR	form email of support
140	Carol	Van Strum	NA	OR	form email of support
141	Sue	Walden	NA	OR	form email of support
142	Carla	Hervert	NA	OR	form email of support
143	M.	Lee Zucker	NA	OR	form email of support
144	Ellen	Saunders	NA	OR	form email of support

145	Dan	Blair	NA	OR	form email of support
146	nathan	wetzel	NA	OR	form email of support
147	marilynn	rabie	NA	OR	form email of support
148	Mary	Duvall	NA	OR	form email of support
149	Marissa	Athens	NA	OR	form email of support
150	Thomas	Fawell	NA	OR	form email of support
151	Kyle	Fuchs	NA	OR	form email of support
152	Laura	Magpali	NA	OR	form email of support
153	Harriet	Cooke	NA	OR	form email of support
154	Linda	Anson	NA	OR	form email of support
155	Ernest	O'Byrne	NA	OR	form email of support
156	Casey	Cunningham	NA	OR	form email of support
157	Steven	Pringle	NA	OR	form email of support
158	L	Fitzgerald	NA	OR	form email of support
159	Mark	Walker	NA	OR	form email of support
160	Marietta	O'Byrne	NA	OR	form email of support
161	Donna	Harris	NA	OR	form email of support
162	Michael	Noack	NA	OR	form email of support
163	Sherry	Palmer	NA	OR	form email of support
164	Danielle	Moser	NA	OR	form email of support
165	Marilyn	Mooshie	NA	OR	form email of support
166	marna	herrington	NA	OR	form email of support
167	Robert	Hertert	NA	NA	Online submittal
168	Stephanie	Mccall	NA	OR	form email of support
169	Larry	Filosi	NA	OR	form email of support
170	Lynn	Cardiff	NA	OR	form email of support
171	John	Swanson	NA	OR	form email of support
172	Julie	Snyder	NA	OR	form email of support
173	John	Koenig	NA	OR	form email of support
174	James	Baker	NA	OR	form email of support
175	Sue	Craig	NA	OR	form email of support
176	Carla	Wenzlaff	NA	OR	form email of support
177	Nancy	Pilgrim	NA	OR	form email of support
178	Jim	Hemmingsen	NA	OR	form email of support
179	Terry	Dalsemer	NA	OR	form email of support
180	Dan	Jaffee	NA	OR	form email of support
181	Susan	Applegate	NA	OR	form email of support
182	karen	mahoney	NA	OR	form email of support
183	Kara	Smith	NA	OR	form email of support

184	Thomas	Lewis	NA	OR	form email of support
185	Bill	O'Brien	NA	OR	form email of support
186	Dimitri	Stephanopoulos	NA	OR	form email of support
187	Jeffrey	Morey	NA	OR	form email of support
188	Grace	Mayer	NA	OR	form email of support
189	mark	day	NA	OR	form email of support
190	Shannon	Rose-Peterson	NA	OR	form email of support
191	Del	Gist	NA	OR	form email of support
192	Juliet	Booth	NA	OR	form email of support
193	Melissa	Burke	NA	OR	form email of support
194	Travis	Allen	NA	OR	form email of support
195	dylan	plummer	NA	OR	form email of support
196	Thomas	Ellis	NA	OR	form email of support
197	Jill	Marks	NA	OR	form email of support
198	Pamela	Vasquez	NA	OR	form email of support
199	N.A.	Renison Renison	NA	OR	form email of support
200	Steve	Mamoyac	NA	OR	form email of support
201	Christine	DeMoll	NA	OR	form email of support
202	Jennifer	Gosnell	NA	OR	Online submittal
203	Eric	Lambart	NA	OR	form email of support
204	Annski	Williams	NA	OR	form email of support
205	Hillary	Tiefer	NA	OR	form email of support
206	Fiona	Stefanik	NA	OR	form email of support
207	Roberta	Boyden	NA	OR	form email of support
208	Julie	Norman	NA	OR	form email of support
209	Gary	Gilardi	NA	OR	form email of support
210	Jody	DeLand	NA	OR	form email of support
211	Priscilla	Calleros	NA	OR	form email of support
212	Faith	O'Malley	NA	OR	form email of support
213	Susan	Wolling	NA	OR	form email of support
214	Judy	Steinberger	NA	OR	form email of support
215	Linda	Eisele	NA	OR	form email of support
216	Kimber	Nelson	NA	OR	form email of support
217	Cheryl	Thoen	NA	OR	Online submittal
218	Tom	Nelson	NA	OR	form email of support
219	Georgeanne	Samuelson	NA	OR	form email of support
220	Laurie	Lakin	NA	OR	form email of support
221	Connie	Coleman	NA	OR	form email of support

222	Wendy	Holzman	NA	OR	form email of support
223	Dave	McKenna	NA	OR	form email of support
224	Alberta	Mayo	NA	OR	form email of support
225	Emilie	Marlinghaus	NA	OR	form email of support
226	Sandra	Joos	NA	OR	form email of support
227	Bethel	Evans	NA	OR	form email of support
228	Christine	Hightower	NA	OR	form email of support
229	Larinda	Malm-Nelsen	NA	OR	form email of support
230	Tobias	Moore	NA	OR	form email of support
231	Myriam	Alaux	NA	OR	form email of support
232	Kurt	Koegler	NA	OR	form email of support
233	Harry	Freiberg	NA	OR	form email of support
234	Deborah	Clark	NA	OR	Online submittal
235	Barbara	Watrous	NA	OR	form email of support
236	Scott	Crockett	NA	OR	form email of support
237	Colleen	Colley	NA	OR	form email of support
238	Roy	Fox	NA	OR	Online submittal
239	Jenny	Dwyer	NA	OR	form email of support
240	Lupin	DeMuth	NA	OR	form email of support
241	Philip	Kavan	NA	OR	form email of support
242	Gary	Guttormsen	NA	OR	form email of support
243	Robert	Burch	NA	OR	form email of support
244	Marcia	Wright	NA	OR	form email of support
245	Jackie	Grant	NA	OR	form email of support
246	Debbie	Maynard	NA	OR	form email of support
247	kim	davis	NA	OR	form email of support
248	Michelle	Bouvia-Emeott	NA	OR	form email of support
249	KATHRYN	JOHNSON	NA	OR	form email of support
250	Melissa	Turnbull	NA	OR	form email of support
251	John	Skarda	NA	OR	form email of support
252	Amanda	Robinson	NA	OR	form email of support
253	Maureen	O'Neal	NA	OR	form email of support
254	Steve	Aydelott	NA	OR	form email of support
255	Lesli	Williamson	NA	OR	form email of support
256	Jessica	McCarthy	NA	OR	form email of support
257	Maureen	O'Neal	NA	OR	form email of support
258	Kerstin	Koegler	NA	OR	form email of support
259	Sharon	Hunt	NA	OR	form email of support
260	Nancy	Lanyon	NA	OR	form email of support

261	Judy	Clemmons	NA	OR	form email of support
262	Ann	Nowicki	NA	OR	form email of support
263	Jabrila	Via	NA	OR	form email of support
264	Dan	Price	NA	OR	form email of support
265	Craig	Mackie	NA	OR	Online submittal
266	Kristen	Swanson	NA	OR	form email of support
267	Richard	Martin	NA	OR	form email of support
268	Carolyn	Eckel	NA	OR	form email of support
269	Mary	Camp	NA	OR	form email of support
270	Staley	Mims	NA	OR	form email of support
271	Luann	Walsh	NA	OR	form email of support
272	Douglas C	Deaton	NA	OR	form email of support
273	melissa	rehder	NA	OR	form email of support
274	Edward	Lizewski	NA	OR	form email of support
275	Susan	Heath	NA	OR	form email of support
276	Tod	Woodford	NA	OR	Online submittal
277	Rebecca	Haas	NA	OR	form email of support
278	Alex	Woolery	NA	OR	form email of support
279	Desiree	Mariscal	NA	OR	form email of support
280	linda	farmer	NA	OR	form email of support
281	Wesley E.	Stoker	NA	OR	form email of support
282	Beth	Workman	NA	OR	form email of support
283	Jon	Sobotka	NA	OR	form email of support
284	David	Mellinger	NA	OR	Online submittal
285	Cam	Wolff	NA	OR	form email of support
286	Mika	Gentili-Lloyd	NA	OR	form email of support
287	Barbara	Arlen	NA	OR	form email of support
288	Jan	Zuckerman	NA	OR	form email of support
289	Valerie	Adell	NA	OR	form email of support
290	Alice	Shapiro	NA	OR	form email of support
291	Sandra	Siegner	NA	OR	form email of support
292	Jane	Civiletti	NA	OR	form email of support
293	Barbara	Arlen	NA	OR	form email of support
294	Rosalie	Sable	NA	OR	form email of support
295	Anna	Brewer	NA	OR	form email of support
296	halsey	swain	NA	OR	form email of support
297	Mary	Parham	NA	OR	form email of support
298	Audrey	Bergsma	NA	OR	form email of support
299	Janice	Moore	NA	OR	form email of support

300	liz	howell	NA	OR	form email of support
301	Margaret	Blauvelt	NA	OR	form email of support
302	Carrie	McGranahan	NA	OR	form email of support
303	Neel	Patel	NA	OR	form email of support
304	Jenessa	Dragovich	NA	OR	form email of support
305	Robin	Vesey	NA	OR	form email of support
306	MayaLisa	Holzman	NA	OR	form email of support
307	Katherine	Fuller	NA	OR	form email of support
308	Ellen	Pfander	NA	OR	form email of support
309	Randall	Sinnott	NA	NA	Online submittal
310	Charles	Van Deusen	NA	OR	form email of support
311	Jane	Kwiatkowski	NA	OR	form email of support
312	Skye	Gamble-Rainey	NA	OR	form email of support
313	William	Slattery	NA	OR	form email of support
314	Hilary	Mankofsky	NA	OR	form email of support
315	Adele	Dawson	NA	OR	form email of support
316	Eric	Peterson	NA	OR	form email of support
317	George	Kuppler	NA	OR	form email of support
318	David	Lavier	NA	OR	form email of support
319	Geoff	King	NA	OR	form email of support
320	Coleen	Pidgeon	NA	OR	form email of support
321	David	Webb	NA	OR	form email of support
322	Casey	Lay	NA	OR	form email of support
323	Miranda	Soileau	NA	OR	form email of support
324	Francesca	Varela	NA	OR	form email of support
325	Judith	Eda	NA	OR	form email of support
326	Alicja	Nichols	NA	OR	form email of support
327	Gail	Battaglia	NA	OR	form email of support
328	Mathieu	Federspiel	NA	NA	form email of support
329	Pam	Larsen	NA	OR	form email of support
330	Judith	Fisher	NA	OR	form email of support
331	ruth	conrad	NA	OR	form email of support
332	Michael	Boreing	NA	OR	form email of support
333	Kris	DiPaola	NA	OR	form email of support
334	William	Emeott	NA	OR	form email of support
335	Jules	Moritz	NA	OR	form email of support
336	Nancy	Merrick	NA	OR	form email of support
337	Juan	Calvillo	NA	OR	form email of support
338	Robyn	Janssen	NA	OR	form email of support

339	Katherine Anne	Stansbury	NA	OR	form email of support
340	Ellen	Singer	NA	OR	form email of support
341	Dianne	Martin	NA	OR	form email of support
342	Andre	Smith	NA	OR	form email of support
343	Marna	Porath	NA	OR	form email of support
344	michael	Ryan	NA	OR	form email of support
345	Kim	Beeler	NA	OR	form email of support
346	Silke	Akerson	NA	OR	Online submittal
347	Anna	Tadio	Lewis and Clark Law School	NA	Oral testimony and Online submittal
348	Angela	Beach-Hart	NA	OR	form email of support
349	Steve	Smack	NA	OR	form email of support
350	Reida	kimmel	NA	OR	form email of support
351	Catherine A.	Bailey	NA	OR	form email of support
352	Susan	Marsh	NA	OR	form email of support
353	Lou	Conrad	NA	OR	Online submittal
354	Loren	Sessa	NA	OR	form email of support
355	Leslie	Grush	NA	OR	form email of support
356	Rhett	Lawrence	NA	OR	form email of support
357	Cheryl	Bruner	NA	OR	form email of support
358	Nicki	Christiane	NA	CA	form email of support
359	Cecile	Valastro	NA	OR	form email of support
360	Jack	Herbert	NA	OR	form email of support
361	Joan	Walker	NA	CA	form email of support
362	J	H	NA	OR	form email of support
363	Karen	Heagen	NA	OR	form email of support
364	Larry	Pennington	NA	OR	Online submittal
365	Martha	Letherwood	NA	OR	form email of support
366	Judith	Berg	NA	OR	form email of support
367	Christine	Bourdette	NA	OR	form email of support
368	Marsha	Barr	NA	OR	form email of support
369	Dan	Howard	NA	OR	form email of support
370	Nancy	Mauter	NA	OR	Online submittal
371	C	Foland	NA	OR	form email of support
372	Sophie	Swirczynski	NA	OR	form email of support
373	Judith	Maron-Friend	NA	OR	form email of support
374	Bebe	Anderson	NA	OR	form email of support
375	John	Torrence	NA	OR	form email of support
376	Carla	Williams	NA	OR	form email of support

377	Barb	Shamet	NA	OR	form email of support
378	Barrett	Edgar	NA	OR	form email of support
379	Kevin	Brown	NA	OR	form email of support
380	Satya	Vayu	NA	OR	form email of support
381	Ylan	Guinsbourg	NA	OR	form email of support
382	Larry	Morningstar	NA	OR	Online submittal
383	Angelo	Simao	NA	CA	form email of support
384	Allison	Blair	NA	CA	form email of support
385	Ron	Dudas	NA	OR	form email of support
386	Cynthia	Laughery	NA	OR	form email of support
387	Jeffrey	Thompson	NA	OR	form email of support
388	Kenneth	Lapointe	NA	CA	form email of support
389	Deborah	Beauchamp	NA	OR	form email of support
390	Beth	Levin	NA	OR	form email of support
391	Teresa	DeLorenzo	NA	OR	form email of support
392	Doranne	Long	NA	OR	form email of support
393	Lillie	Last	NA	OR	form email of support
394	freddie	williams	NA	MA	form email of support
395	Sara	Smith	NA	OR	form email of support
396	Janet	H.	NA	OR	form email of support
397	John	Altshuler	NA	OR	form email of support
398	Jim	Freeberg	NA	OR	form email of support
399	Caroline	Skinner	NA	OR	form email of support
400	A.	Todd	NA	OR	form email of support
401	John	Tyler	NA	OR	form email of support
402	Traci	Kraft	NA	OR	form email of support
403	Mira	Wiegmann	NA	OR	form email of support
404	Debra	Wilson	NA	OR	form email of support
405	Donna	Sharp	NA	OR	form email of support
406	Twila	Jacobsen	NA	OR	form email of support
407	Kirk	Leonard	NA	OR	form email of support
408	Nora	Jewett	NA	OR	form email of support
409	Jennifer	Edelen	NA	KY	form email of support
410	Craig	Downer	NA	NV	form email of support
411	Peter	Ware	NA	OR	form email of support
412	Lisa	Salazar	NA	CA	form email of support
413	Kirsten	Holmquist	NA	CA	form email of support
414	Ronna	Friend	NA	OR	form email of support
415	Kellie	Smith	NA	NH	form email of support

416	Peggy	Wright	NA	OR	form email of support
417	Lydia	Kendall	NA	OR	form email of support
418	Genevieve	Muller-hart	NA	OR	form email of support
419	Alison	Leonard	NA	OR	form email of support
420	Regan	Fisher	NA	OR	form email of support
421	Michael	Friedmann	NA	NY	form email of support
422	Caitlin	Leal	NA	OR	form email of support
423	Ashley	Lema	NA	OR	form email of support
424	Mary	Powell	NA	OR	form email of support
425	David	Harrison	NA	OR	form email of support
426	Robin	Vogler	NA	MT	form email of support
427	Elizabeth	Eggers	NA	OR	form email of support
428	Allison	McGuffie	University of Oregon	OR	Online submittal
429	Victoria	Meier	NA	OR	form email of support
430	Josh	Woolley	NA	OR	form email of support
431	Marcia	Rae	NA	NA	Online submittal
432	Diane	Patterson	NA	OR	form email of support
433	Joan	Taber	NA	OR	form email of support
434	Michelle	Hoge	NA	OR	form email of support
435	Vince	Zauskey	NA	OR	form email of support
436	Barbara	Franklin	NA	OR	form email of support
437	Jerry	Hill	NA	MA	form email of support
438	Beppie	Shapiro	NA	HI	form email of support
439	Virgene	Link-New	NA	WA	form email of support
440	Craig	Ackerman	National Park Service	OR	Online submittal
441	Howard	Erbe	NA	OR	form email of support
442	Susan	Heath	NA	OR	form email of support
443	G	Boness	NA	OR	form email of support
444	Debora	McCreedy	NA	OR	form email of support
445	Shelley	Heon	NA	OR	form email of support
446	Kathleen	Williams	NA	FL	form email of support
447	Jeffry	Hanus	NA	NM	form email of support
448	Kristy	Hanus	NA	NM	form email of support
449	Jean	Crawford	NA	OR	form email of support
450	Lisa	Kelz	NA	OR	form email of support
451	Joe	Yuska	NA	OR	Online submittal
452	Bill	Beckwith	Environmental Protection Agency	NA	Online submittal

453	Daniel	Beausoleil	NA	OR	form email of support
454	Claudia	Beausoleil	NA	OR	form email of support
455	Kim	Kuehnert	NA	OR	form email of support
456	John	Nettleton	NA	OR	form email of support
457	Kristen	Zumeta	NA	CA	form email of support
458	Joanna	Di Tommaso	NA	CA	form email of support
459	Matt	Herbert	NA	NA	Online submittal
460	Chad	Derosier	NA	OR	form email of support
461	Douglas	Thiesen	NA	OR	form email of support
462	Lyse	Mondor	NA	NH	form email of support
463	Oscar	Contreras	NA	OR	form email of support
464	Jared	Pruch	NA	OR	form email of support
465	Jeana	Schorr	NA	OR	form email of support
466	Sandy	Olken	NA	OR	form email of support
467	Michelle	McAfee	NA	OR	form email of support
468	Al	Johnson	USDA Forest Service	OR	Online submittal
469	Rhett	Lawrence	NA	OR	form email of support
470	Mary	Neuendorf	NA	OR	form email of support
471	debra	poscharscky	NA	OR	form email of support
472	Brad	Nahill	NA	OR	form email of support
473	Susie	Cousar	NA	NA	Online submittal
474	Theresa	Brand	NA	NA	Online submittal
475	Kimberly	Kittredge	NA	OR	Online submittal
476	Jane	Farrell	NA	NA	Online submittal
477	James	Baker	NA	OR	form email of support
478	Rachel	Jordan	NA	NA	Online submittal
479	Grace	Mayer	NA	OR	form email of support
480	Maria	Kelly	NA	OR	form email of support
481	David	Michalek	NA	OR	form email of support
482	Ellen	Scott	University of Oregon	OR	Online submittal
483	Patrick	Grady	NA	OR	form email of support
484	Tamar	Dick	NA	PA	form email of support
485	Elizabeth	Twombly	NA	OR	Online submittal
486	Bethany	Mckenzie	NA	OR	form email of support
487	Stacey	Detwiler	Rogue Riverkeeper	NA	Oral testimony and Online submittal
488	Ron	Eber	NA	WA	Online submittal
489	John	Livingston	NA	CA	form email of support

490	Josh	Hill	NA	OR	Online submittal
491	Theo	Dreher	Oregon Lakes Association	OR	Online submittal
492	David	Adee	NA	NA	Online submittal
493	Joan	Connolly	NA	OR	Online submittal
494	Jan	Spencer	NA	OR	Online submittal
495	Eilleen	Adee	NA	NA	Online submittal
496	Jane	Farrell	NA	NA	Online submittal
497	Doug	Heiken	Oregon Wild	OR	Oral testimony and Online submittal
498	Cora	Rose	NA	OR	form email of support
499	Brenda	Wills	NA	OR	Online submittal
500	Cory	S	NA	OR	form email of support
501	Howard	Kopp	NA	OR	Online submittal
502	Mary Anne	Cooper	Oregon Farm Bureau	OR	Online submittal
503	Bronwen	Evans	NA	WA	form email of support
504	Oceanah	D'amore	NA	OR	form email of support
505	MIchael	Walters	NA	OR	form email of support
506	Steve	Sheehy	NA	OR	form email of support
507	Jean	Diamond	NA	OH	form email of support
508	colonel	meyer	NA	FL	form email of support
509	Phillip	Norman	NA	OR	form email of support
510	Jeffrey	Thieret	NA	OR	form email of support
511	Dori	Cole	NA	IL	form email of support
512	Kevin	Silvey	NA	FL	form email of support
513	dorinda	kelley	NA	OR	form email of support
514	Victoria	Eells	NA	OR	form email of support
515	john	jacob	NA	OR	form email of support
516	fay	forman	NA	NY	form email of support
517	Rhonda	Bradley	NA	TN	form email of support
518	Iwona	Krzeminska	NA	VI	form email of support
519	Tanja	Rieger	NA	VA	form email of support
520	Caroline	Sévilla	NA	TX	form email of support
521	Kathleen	Williams	NA	FL	form email of support
522	Linda	Janota	NA	FL	form email of support
523	Dia	Paxton	NA	OR	form email of support
524	Cheryl	Ingersoll	NA	OR	form email of support
525	Terry	Tedesco	NA	AZ	form email of support
526	Claire	Perricelli	NA	CA	form email of support

527	Raymond	McClenathan	NA	OR	form email of support
528	Bob	Frapples	NA	OR	form email of support
529	John	Deddy	NA	FL	form email of support
530	Constance	Palaia	NA	OR	form email of support
531	Corina	Aleman	NA	OR	form email of support
532	George	Sexton	NA	OR	form email of support
533	Delores	Porch	NA	OR	form email of support
534	Ciry	Null	NA	OR	form email of support
535	Paul	Rickerson	NA	OR	form email of support
536	Pamylle	Greinke	NA	NY	form email of support
537	Sarah	Hale	NA	OR	form email of support
538	Esther	Goldberg	NA	OR	form email of support
539	Vicki	Orendurff	NA	OR	form email of support
540	Bill	O'Brien	NA	OR	form email of support
541	JL	Angell	NA	CA	form email of support
542	Beth	Nolan	NA	OR	form email of support
543	Richard	Spotts	NA	UT	form email of support
544	Pamela	Vasquez	NA	OR	form email of support
545	Kris	Ebbe	NA	OR	form email of support
546	Karen	Black	NA	OR	form email of support
547	Anouschka	Andresen	NA	OR	form email of support
548	Deborah	Honthaner	NA	OR	form email of support
549	Barbara	Gregory	NA	WA	form email of support
550	Andrea	Beardsley	NA	OR	form email of support
551	Kay	Schaser	NA	CA	form email of support
552	Christine	Schneebeli	NA	NY	form email of support
553	Patricia	Zoline	NA	OR	form email of support
554	Jim	Yarbrough	NA	OR	form email of support
555	Chuck	Hammerstad	NA	CA	form email of support
556	Tabitha	Donaghue	NA	OR	form email of support
557	Christopher	Lish	NA	CA	form email of support
558	Allie	Tennant	NA	FL	form email of support
559	Nancy	Lyles	NA	CA	form email of support
560	teresa	mcgrath	NA	OR	form email of support
561	Virginia	Douglas	NA	OH	form email of support
562	Karen	Grovrr	NA	OR	form email of support
563	Vic	Bostock	NA	CA	form email of support
564	Gloria	Ziller	NA	OR	form email of support
565	Joyce	Johnson	NA	CA	form email of support

566	Lindsey	Kuipers	NA	OR	form email of support
567	Diana	Pace	NA	OR	form email of support
568	Christina	Crosby	NA	FL	form email of support
569	Leticia	Garcia	NA	AZ	form email of support
570	Terrie	Williams	NA	TX	form email of support
571	Karla	Devine	NA	CA	form email of support
572	Pauline	Black	NA	OR	form email of support
573	Bob	Morse	NA	OR	form email of support
574	DENNIS	HONKOMP	NA	MO	form email of support
575	Heather	Cross	NA	MI	form email of support
576	Kristin	Judy	NA	OR	form email of support
577	Marilyn	Mooshie	NA	OR	form email of support
578	Jennifer	Hayes	NA	CA	form email of support
579	Mark	Wheeler	NA	OR	form email of support
580	Brandon	Young	NA	OR	form email of support
581	Michael	Haskell	NA	ME	form email of support
582	Stephanie	Baum	NA	OR	form email of support
583	Lucy	Flanagan	NA	WA	form email of support
584	Cynthia	Hobbins	NA	OR	form email of support
585	Marion	Hadden	NA	OR	form email of support
586	Pamela	Miller	NA	TX	form email of support
587	June	Elliott-Cattell	NA	SC	form email of support
588	A Michael	Dianich	NA	OR	form email of support
589	Jan	Modjeski	NA	SC	form email of support
590	James	Mulcare	NA	WQ	form email of support
591	karen	sjogren	NA	OR	form email of support
592	Jason	Clinch	NA	OR	form email of support
593	James	Grauer	NA	OR	form email of support
594	Jennifer	Robb	NA	NY	Online submittal
595	Patricia	Browning	NA	OR	form email of support
596	Dustin	Saigo	NA	OR	form email of support
597	Karen	Debraal	NA	OR	form email of support
598	Michael	Wherley	NA	OR	form email of support
599	Artur	Vardanyan	NA	CA	form email of support
600	Ourania	Marcandonatou	NA	OR	form email of support
601	Jasmine	Patten	NA	OR	form email of support
602	Marcy	Graham	NA	OR	form email of support
603	Javier	Rivera-Diaz	NA	NY	form email of support
604	Iris	Miatke	NA	OR	form email of support

605	Susan	Viani	NA	OR	form email of support
606	Cynthia	Boersma	NA	OR	form email of support
607	Denine V	Heinemann	NA	OR	form email of support
608	Cynthia	Care	NA	OR	form email of support
609	Carol	Jurczewski	NA	IL	form email of support
610	Karen	Horn	NA	OR	form email of support
611	Susan	Wilson	NA	OR	form email of support
612	Diane Newell	Meyer	NA	OR	form email of support
613	Charlotte	Nuessle	NA	OR	form email of support
614	Darlyne	Reising	NA	OR	form email of support
615	Mary	Knoth	NA	OR	form email of support
616	Donna	Bonetti	NA	CO	form email of support
617	David	Randall	NA	NY	form email of support
618	Dale	Marshall	NA	OR	form email of support
619	Catherine	Cogdill	NA	OR	form email of support
620	Lisa	Salazar	NA	CA	form email of support
621	Hillary	Tiefer	NA	OR	form email of support
622	Joan	Kalvelage	NA	OR	form email of support
623	LENORE	SHISLER	NA	OR	form email of support
624	David	Cornell	NA	OR	form email of support
625	Randy	Harrison	NA	OR	form email of support
626	Lisa	Johnston	NA	OR	form email of support
627	Tami	Palacky	NA	VA	form email of support
628	Jules	Moritz	NA	OR	form email of support
629	Cyndi	Clough	NA	KS	form email of support
630	Ben	Basin	NA	OR	form email of support
631	Letitia	Noel	NA	IL	form email of support
632	Dana	Bleckinger	NA	OR	form email of support
633	Kevin	Kingma	NA	CA	form email of support
634	Anna	Brewer	NA	AZ	form email of support
635	Wendy	McGowan	NA	OR	form email of support
636	Lynne	Foley	NA	OR	form email of support
637	Terry	Longshore	NA	OR	form email of support
638	Hugh	Null	NA	OR	form email of support
639	John	Nettleton	NA	OR	form email of support
640	mark	day	NA	OR	form email of support
641	Marcia	Rodine	NA	OR	form email of support
642	Mary	Camp	NA	OR	form email of support
643	Sharon	Burge	NA	OR	form email of support

644	Heather	Faith	NA	OR	form email of support
645	Lisa	Bettendorf	NA	CA	form email of support
646	Karol	Strane	NA	OR	form email of support
647	Jack	Duggan	NA	OR	form email of support
648	Christopher	Panayi	NA	NY	form email of support
649	Jane	Farrell	NA	OR	form email of support
650	Nancy L.	Anderson	NA	OR	form email of support
651	Ann	Hollyfield	NA	OR	form email of support
652	R	C	NA	OR	form email of support
653	Sarah	Kreisman	NA	OR	form email of support
654	S	Klof	NA	OR	form email of support
655	Valerie	Blackmore	NA	OR	form email of support
656	Margery	Winter	NA	OR	form email of support
657	Steven	Tichenor	NA	OR	form email of support
658	Angela	Wyble	NA	OR	form email of support
659	Christina	Shetterly	NA	OR	form email of support
660	Eve	Saglietto	NA	UT	form email of support
661	Lenore	Reeves	NA	IL	form email of support
662	Jacob	Kann	NA	OR	form email of support
663	Donlon	McGovern	NA	OR	form email of support
664	Michelle	Hayward	NA	MK	form email of support
665	Pamela Vouros	Callahan	NA	IN	form email of support
666	Don	Stephens	NA	OR	form email of support
667	Bryant	Helgeland	NA	OR	form email of support
668	Juanita	Rinas	NA	OR	form email of support
669	Cigdem	Capan	NA	WQ	form email of support
670	robert	richey	NA	TX	form email of support
671	Thom	Lehman	NA	OR	Online submittal
672	Rob	Seltzer	NA	CA	form email of support
673	dylan	plummer	NA	OR	form email of support
674	Kirsten	Wert	NA	OR	form email of support
675	Benton	Jones	NA	OR	form email of support
676	Tenaya	Jewell	NA	OR	Online submittal
677	Jolene	Foley	NA	OR	form email of support
678	Eva	Thiemann	NA	OR	form email of support
679	Russell	Anthes	NA	WA	form email of support
680	Jaci	Wilkins	NA	OR	form email of support
681	John	Pasqua	NA	CA	form email of support

682	Edith	Montgomery	NA	OR	form email of support
683	Dianne	Douglas	NA	AZ	form email of support
684	Don	McKelvey	NA	OH	form email of support
685	curt	clay	NA	OR	form email of support
686	Linda	Ulvaeus	NA	CA	form email of support
687	Susan	Delles	NA	OR	form email of support
688	Gloria	Fisher	NA	OR	form email of support
689	Kathleen	Roche	NA	OR	form email of support
690	Steve	Prince	NA	OR	form email of support
691	Philip	Ratcliff	NA	OR	form email of support
692	Joann	Koch	NA	CT	form email of support
693	Linda	Walters	NA	VA	form email of support
694	Mahogany	Aulenbach	NA	OR	form email of support
695	Mack	Hunter	NA	OR	form email of support
696	Jeffrey	White	NA	OR	form email of support
697	Michael G	Smith	NA	OR	form email of support
698	Mono Kurt	Gaffney	NA	OR	form email of support
699	Cindy	Harper	NA	OR	form email of support
700	Karl	Koessel	NA	CA	form email of support
701	C.A.	Incze	NA	OR	form email of support
702	Sara	Hayes	NA	CA	form email of support
703	Marie	Wakefield	NA	OR	form email of support
704	Joseph	Welch	NA	OR	form email of support
705	Jim	Fety	NA	OR	form email of support
706	Lydia	Garvey	NA	OK	form email of support
707	MICHAEL	NACRELLI	NA	OR	form email of support
708	Gudrun	Dennis	NA	FL	form email of support
709	Hal	Anthony	NA	OR	form email of support
710	Ann	DiSalvo	NA	OR	form email of support
711	Dave	Maher	NA	OR	form email of support
712	Kim	Davis	NA	OR	form email of support
713	Betty	McRoberts	NA	OR	form email of support
714	William Van	Buskirk	NA	OR	form email of support
715	Gunta	Norman	NA	OR	form email of support
716	Renee	Klein	NA	CA	form email of support
717	Maureen	O'Neal	NA	OR	form email of support
718	Frances	O'Neal	NA	OR	form email of support
719	Joel	Rosenblit	NA	OR	form email of support
720	Christine	Stewart	NA	CA	form email of support

721	Sandra	Woodall	NA	TX	form email of support
722	Petra	Jones	NA	NS	form email of support
723	Jade	Severson	NA	OR	form email of support
724	Katherine	Wolfe	NA	OR	form email of support
725	Amitav	Dash	NA	ON	form email of support
726	John	Varga	NA	CA	form email of support
727	Deborah	Voves	NA	AK	form email of support
728	Susan	Doherty	NA	OR	form email of support
729	Christie	Childs	NA	CA	form email of support
730	Suzanne	Zook	NA	OR	form email of support