

Feb. 2022

Updated: July 2022

Technical Workgroup Charter

Ocean Acidification and Hypoxia
Technical Workgroup



This document was prepared by
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Objectives and Scope

Workgroup Objectives

The objective of the Oregon Department of Environmental Quality's (DEQ) ocean acidification and hypoxia (OAH) technical workgroup is to assist DEQ in developing procedures for assessing the impacts of ocean acidification and marine dissolved oxygen in Oregon's territorial waters for future Integrated Report cycles. DEQ is required to assess water quality and report to the U.S. Environmental Protection Agency on the condition of Oregon's waters on a biennial basis in its Integrated Report.

DEQ proposes to form a scientific technical workgroup to assist the agency in developing methods for the purpose of Clean Water Act, Integrated Report assessment. Both ocean acidification and marine hypoxia are complex and challenging issues. Determining how best to evaluate these conditions within Oregon's territorial waters for the purposes of Oregon's Integrated Report will require a strategic approach and scientific expertise beyond DEQ. It is the Department's objective to create a methodology for determining impairment within Oregon territorial waters for ocean acidification and marine dissolved oxygen using Oregon's existing water quality criteria and standards. DEQ is not developing new water quality criteria or standards related to OAH at this time, but will consider recommendations from workgroup members on revisions or updates to existing standards and/or criteria.

The role of workgroup is to provide expertise not available within the agency to aid DEQ in the determination of whether the effects from low dissolved oxygen and ocean acidification rise to the level of impairment in Oregon's marine waters. The workgroup will serve as technical experts in their respective fields of study at a series of meetings coordinated by DEQ staff. Workgroup members will sometimes be the providers of the data needed to develop the methods with the most current and best available information.

The scientific technical workgroup is not a decision-making body. Rather, it will facilitate the sharing of scientific data and information, and members will provide technical review of DEQ's data analyses and interpretation for purposes of an assessment methodology.

The information gathered from the workgroup, and subsequent data analysis by DEQ, will be used by the Department to develop assessment methodologies for ocean acidification and marine dissolved oxygen using existing narrative water quality criteria as the basis for assessment. DEQ will seek feedback from workgroup members on technical questions related to interpreting Oregon's biocriteria narrative, Oregon Administrative Rules (OAR) [340-041-0011](#) "Waters of the State must be of sufficient quality to support aquatic species without detrimental changes in the resident biological communities". DEQ may also seek feedback from workgroup members on technical questions related to interpreting Oregon's marine dissolved oxygen narrative, OAR [340-041-0016](#) "No wastes may be discharged and no activities may be conducted that, either alone, or in combination with other wastes or activities, will cause violation of the following standards.. (6) for ocean waters, no measurable reduction in dissolved oxygen

concentration may be allowed". Data and information representative of Oregon territorial waters will be considered in the evaluation of ecological and/or chemical thresholds relevant to the assessment of ocean acidification and marine dissolved oxygen.

DEQ expects to hold a separate peer review process of the methodology and intends to incorporate peer review comments into its final methodology recommendation. DEQ plans to use the assessment methodologies in future Integrated Report cycles.

Workgroup Scope

DEQ anticipates that the workgroup will be utilized in three main steps during the development of the assessment methods: 1) scientific technical workgroup meetings, 2) review of technical white paper and developed methods, and 3) technical expertise or input on potential issues raised by the peer review process.

1. Scientific Technical workgroup meetings will focus on a wide range of topics including, but not limited to assessing the current state of OAH science, understanding existing water quality standards and criteria, and exploring ecological/chemical thresholds for OAH biological impairment. Workgroup meeting participants will be tasked with aiding DEQ in developing lines of evidence that will form the tenets of an ocean acidification and marine dissolved oxygen assessment method for Integrated Report purposes. Meeting summaries will be posted on DEQ's webpage.
2. DEQ will summarize and interpret data and information provided by the workgroup meetings in an assessment method technical white paper that the workgroup will review for accuracy.

DEQ staff will also prepare a preliminary framework for development of an assessment method. DEQ will seek confirmation from workgroup members that the data used for development of an assessment method is the most current and best available scientific information and that DEQ applies the most up to date knowledge of ocean acidification and low dissolved oxygen impacts on Pacific nearshore species. The workgroup members will also provide input on key data identification and interpretation questions. Additional data will be sought with the assistance of the membership of the technical workgroup as needed.

3. A separate peer review panel will be tasked with confirming that the DEQ developed assessment method is both scientifically and technically defensible. The technical workgroup may be asked to provide input or expertise on potential technical issues raised by the peer review process.

Roles

Facilitators

Donna Ortiz, U.S. Environmental Protection Agency, Region 10

Kaegan Scully-Engelmeyer, Oregon Sea Grant OAH Fellow, DEQ

The facilitators will:

- Be independent and impartial;
- Communicate and implement the ground rules during workgroup meetings;
- Ensure all workgroup members are engaged and being heard;
- Start and end meetings and keep agenda items on time;
- Capture major decisions and follow up actions.

Moderators

Moderators will be selected prior to each meeting based on subject matter expertise and involvement in meeting topics

The moderators will:

- Be knowledgeable about the subject area
- Encourage open, candid, and robust dialogue;
- Highlight and encourage numerous perspectives and insights on a particular topic
- Recognize when the discussion is outside the scope of the meeting and steer the discussion back to the focus of the meeting;

Workgroup Members

Technical workgroup members should attend each meeting that is pertinent to their area of expertise. If a workgroup member is unable to attend, an alternate may be assigned if needed. However, it is each workgroup member's responsibility to fully brief their alternate on all relevant issues and prior workgroup discussions in order to meet the meeting objectives and keep the project on schedule. If a member's absence is unavoidable, please notify the DEQ project manager.

The workgroup member will:

- Prepare for and set aside time for the meetings;
- Provide DEQ staff with copies of relevant research and documentation identified for the meeting;

- Stay focused on the specific agenda topics for each meeting;
- Comment constructively and in good faith;

DEQ Staff & Representatives

DEQ is committed to making the most effective use of workgroup member's time and will:

Plan meeting agendas;

- Establish clear workgroup goals, meeting objectives and agendas;
- Give workgroup members reasonable access to staff;
- Provide materials in advance and provide adequate review time for workgroup members;
- Encourage all members to take part in discussions; and
- Provide a clear description of members' roles, the project timeline, the level of input expected and feedback on how members' input is used.

DEQ Support and Communications

DEQ staff will provide agenda and meeting materials to the workgroup members at least one week in advance of scheduled meetings. DEQ staff will provide meeting summaries that highlight workgroup discussions, different perspectives, and input of workgroup members. DEQ will not prepare a formal workgroup report, but will capture important contributions of the work group in the final method recommendation white paper. DEQ staff will send draft meeting summaries to the workgroup for review and input, and meeting summaries will be posted to DEQ's website following work group meetings.

DEQ has established a shared resource location for workgroup participants to exchange information, maintain communications, and share materials. This resource will be utilized as needed to share information with the workgroup.

Workgroup Meetings

1. All workgroup meetings will be:
 - Notified by email to workgroup members
 - Held via web-conference.
2. DEQ anticipates holding approximately four half-day technical workgroup meetings between February 2022 and January 2023 to develop a final assessment methodology recommendation white paper. DEQ also anticipates it will consult with workgroup members individually or in a subgroup format according to need and their specific expertise.

3. Additionally, there may be issues that are raised through the peer review process that the technical workgroup may be asked to reconvene or provide additional input or expertise. An additional one or two meetings may be scheduled as needed in spring of 2023 to address any technical questions raised from the peer review process.
4. The meeting duration times above may vary depending on the topics discussed.
5. Meeting materials and agenda will be sent to the workgroup by e-mail in advance.

Decision Making

The scientific technical workgroup is not a decision-making body. Rather, it will facilitate the sharing of scientific data and information, and members will provide technical review of DEQ's data analyses and interpretation for purposes of an assessment method.

DEQ will seek confirmation from workgroup members that the data DEQ uses is the most current and best available scientific information and that DEQ's application of the data and information is scientifically sound based on their individual expertise. While it would be beneficial if the workgroup membership agrees on the data and methods DEQ ultimately uses, DEQ will not seek a single consensus-based recommendation from the technical workgroup as a whole.

DEQ will primarily use information and raw data collected within Oregon's territorial waters. Additional data and information will be sought with the assistance of the technical workgroup members as needed. DEQ's objective is to create a method for determining impairment within Oregon territorial waters for ocean acidification and a method for assessment of marine dissolved oxygen.

The workgroup's discussions will be used by DEQ in forming its draft assessment method. Once the method recommendation is complete, DEQ will summarize the technical review panel's input. The technical workgroup is not a decision-making body, but will provide technical review and input on DEQ's analyses and recommendations. DEQ will ensure a reasonable timeframe for comments when DEQ shares the draft method with the workgroup.

Membership

DEQ will select scientific technical workgroup members representing OAH experts throughout the West Coast. DEQ sought representatives from a wide range of participants including: ODFW, Oregon State University, NOAA, Southern California Coastal Water Research Project, University of California-Davis, University of Washington, Monterey Bay Aquarium Research Institute, Ocean Observatories Initiative and the U.S. EPA Office of Research and Development. Participation from individuals from within these agencies and organizations will be based on their knowledge and expertise in OAH oceanography,

marine biogeochemistry, bioindicator expertise, data interpretation, and possession or access to marine data sets.

Table 1. Technical workgroup membership

Workgroup Member	Affiliation	Contact Information
Simone Alin	National Oceanic and Atmospheric Administration	simone.r.alin@noaa.gov
Jim Barry	Monterey Bay Aquarium Research Institute	barry@mbari.org
Jack Barth	Oregon State University	jack.barth@oregonstate.edu
Nina Bednaršek	Southern California Coastal Water Research Project	ninab@sccwrp.org
Cheryl Brown	EPA Office of Research and Development	brown.cheryl@epa.gov
Richard Feely	NOAA Pacific Marine Environmental Laboratory	richard.a.feely@noaa.gov
Burke Hales	Oregon State University	burke.hales@oregonstate.edu
Jessica Miller	Oregon State University	jessica.miller@oregonstate.edu
Jan Newton	UW/ Northwest Association of Networked Ocean Observing Systems.	jnewton@uw.edu
Steve Pacella	EPA Office of Research and Development	pacella.stephen@epa.gov
Samantha Siedlecki	University of Connecticut	samantha.siedlecki@uconn.edu
Martha Sutula	Southern California Coastal Water Research Project	marthas@sccwrp.org
George Waldbusser	Oregon State University	george.waldbusser@oregonstate.edu
Stephen Weisberg	Southern California Coastal Water Research Project	steve@w@uconn.edu

Table 2. Technical Workgroup members – Agency representation

Workgroup Members	Affiliation	Contact Information
Brock Tabor	Alaska Department of Environmental Conservation	brock.tabor@alaska.gov
Keara Tuso	California State Water Board	keara.tuso@waterboards.ca.gov
Michelle Robbins	California State Water Board	michelle.robbins@waterboards.ca.gov
Michael Patton	California State Water Board	michael.patton@waterboards.ca.gov
Andy Lanier	Oregon Department of Land Conservation and Development	andy.lanier@dlcd.oregon.gov
Lori Pillsbury	Oregon Department of Environmental Quality	lori.pillsbury@deq.oregon.gov
Rian Hooff	Oregon Department of Environmental Quality	Rian.HOOFF@deq.oregon.gov
Caren Braby	Oregon Department of Fish and Wildlife	caren.braby@odfw.oregon.gov
Dave Fox	Oregon Department of Fish and Wildlife	david.s.fox@odfw.oregon.gov
Steve Rumrill	Oregon Department of Fish and Wildlife	steven.s.rumrill@odfw.oregon.gov
Charlotte Regula-Whitefield	Oregon Department of Fish and Wildlife	charlotte.m.regulawhitefield@odfw.oregon.gov
Jeremy Reiman	Washington State Department of Ecology	jere461@ecy.wa.gov
Jill Fullagar	USEPA Region 10	fullagar.jill@epa.gov
Rochelle Labiosa	USEPA Region 10	labiosa.rochelle@epa.gov
Michelle Maier	USEPA Region 10	maier.michelle@epa.gov
Terry Fleming	USEPA Region 9	Fleming.Terrence@epa.gov
Eric Dubinsky	USEPA Region 9	dubinsky.eric@epa.gov

Table 3. DEQ Staff Assigned

DEQ Staff	Role	Contact Information
Lesley Merrick	Water Quality Assessment Program Lead	lesley.merrick@deq.oregon.gov
Travis Pritchard	Technical Specialist	travis.pritchard@deq.oregon.gov
Kaegan Scully-Engelmeyer	OAH Sea Grant Fellow	kaegan.scully-engelmeyer@deq.oregon.gov
Michele Martin	Project Manager	michele.martin@deq.oregon.gov
Connie Dou	Water Quality Program Manager	connie.dou@deq.oregon.gov

Meetings and Travel

Given the current state of the COVID-19 pandemic, DEQ will hold all workgroup meetings and communications electronically via conference call, web conference, and e-mail. DEQ is not able to reimburse either in-state or out-of-town workgroup members for travel or other incurred expenses.

Public Records and Confidentiality

Due to the complex nature of ocean acidification and implementation of the Clean Water Act, DEQ will be using the workgroup as a forum for open discussion on meeting topics. Summaries of meetings will be posted to DEQ's website to maintain transparency on agenda items and project deliverables. Workgroup communications and records, such as formal documents, discussion drafts, meeting summaries and exhibits will become part of DEQ's Integrated Report record and therefore are public records and are available for public inspection. DEQ does not assume responsibility for protecting proprietary or confidential business information shared during workgroup or individual communications. However, the private documents, including meeting notes, of individual workgroup members generally are not considered public records if DEQ does not have copies.

Public Involvement

DEQ will post meeting summaries on its website following workgroup meetings. DEQ is not required to publicly advertise the workgroup meetings. Additionally, DEQ will solicit public comment on the final assessment method recommendation. Members of the public who wish to submit comments will be encouraged to submit comments at that time.

DEQ Contacts

Primary Contact

Kaegan Scully-Engelmeyer
Oregon Sea Grant OAH Fellow
503-575-5224
kaegan.scully-engelmeyer@deq.oregon.gov

Alternate Contact

Lesley Merrick
Water Quality Assessment Program Lead
971-323-7228
lesley.merrick@deq.oregon.gov

Tentative Meeting Topics

1st workgroup meeting – Introductions and Big Picture – Feb 2022

- Welcome by DEQ and EPA
- Ground rules - Facilitator
- Introductions
- Charter Review
- Overview on CWA, WQ Standards and 303(d) assessment process
- Other States Status Updates
- DEQ's preliminary assessment approach discussion
- Next Steps

Assessment procedure draft subgroup meetings:

Subgroup meeting 1: Draft OA assessment procedure questions (Mar 2022)

Subgroup meeting 2: Draft OA assessment procedure answers (Apr 2022)

Subgroup meeting 3: Marine dissolved oxygen assessment discussion (May 2022)

Subgroup meeting 4: Marine dissolved oxygen assessment procedure discussion, workgroup planning discussion (July 2022)

2nd workgroup meeting – Ocean acidification assessment discussion

- Workgroup charter updates – Subgroup progress and outcomes
- Presentation – Draft OA biological impact assessment procedure
- OA indicator and data types discussion
 - Chemical data – draft answer discussion
 - Biological data – draft answer discussion
- Next steps
 - Timeline update
 - Formation of subgroups (chemical and biological data subgroups)

Threshold and assessment procedure Subgroup meetings:

OA chemical data subgroup

- Develop recommendations for OA chemical data exceedance thresholds and assessment procedures

OA biological data subgroup

- Develop recommendations for OA biological data exceedance thresholds and assessment procedures

Marine assessment unit subgroup

- Explore options for redefining existing marine assessment units

3rd meeting – Hybrid ocean acidification assessment procedure

- Reports and recommendations from subgroups
- Finalize hybrid OA biological impact assessment procedure
- Discuss ongoing & future data and information needs

4th meeting – Proposed DO methodology

- Finalize proposed assessment options for DO

Peer Review

Possible 5th Meeting

- Address peer review comments
- Final assessment methods

Tentative timeline for OAH workgroup	
Kick off workgroup meeting	Feb-2022
Subgroup meeting #1	Mar-2022
Subgroup meeting #2	Apr-2022
Subgroup meeting #3	May-2022
Subgroup meeting #4	Jul-2022
Workgroup meeting #2	Jul-2022
Second subgroup(s) process meetings	Jul-Oct 2022
Workgroup meeting #3	Oct 2022
Workgroup meeting #4	Nov-2022
Final methodology recommendation (OA and possibly DO)	Dec-2022
Peer review (OA and possibly DO)	Dec 2022 - Mar 2023
Public comment on draft methodology	Apr – May 2023