Welcome

YOU ARE IN THE RIGHT SPOT. WE WILL START AT 9:00 AM.

Wetlands

JANUARY 27, 2021
Welcome to
Wetlands

2021 Critical Areas and Shoreline Monitoring & Adaptive Management Online Workshops

If you have questions type in the Q&A box

Chat is turned off

Click to see Closed Caption text
2021 Critical Areas and Shoreline Monitoring & Adaptive Management Online Workshops

How to Successfully Protect Critical Areas and Shorelines: A Step-by-Step Introduction to Monitoring and Adaptive Management

Visit Project Website for More Information

2021 Critical Areas and Shoreline Monitoring & Adaptive Management Online Workshops

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The contents of this document do not necessarily reflect the views and policies of the Environmental Protection Agency or the Washington Department of Fish and Wildlife, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

Workshop Wednesday Series Lineup

Register using Zoom.

- **January 13 - 9:00 a.m. - 11:00 a.m.** How to Successfully Protect Critical Areas and Shorelines: A Step-by-Step Introduction to Monitoring and Adaptive Management
- **January 20 - 9:00 a.m. - 11:00 a.m.** Setting the Stage: Successes, adaptive management, and critical areas monitoring program basics
- **January 27 - 9:00 a.m. - 11:00 a.m.** Wetlands
- **February 3 - 9:00 a.m. - 11:00 a.m.** Geologically Hazardous Areas
- **February 10 - 9:00 a.m. - 11:00 a.m.** Fish and Wildlife Habitat Conservation Areas
- **February 17 - 9:00 a.m. - 11:00 a.m.** Frequently Flooded Areas
- **February 24 - 9:00 a.m. - 11:00 a.m.** Critical Aquifer Recharge Areas (CARAs)
- **March 3 - 9:00 a.m. - 11:00 a.m.** Shorelines
- **March 10 - 9:00 a.m. - 11:00 a.m.** Permit Implementation Monitoring Tools
- **March 17 - 9:00 a.m. - 11:00 a.m.** CAO Performance Indicators
- **March 24 - 9:00 a.m. - 11:00 a.m.** Adaptive Management Interactive Workshop

Note: Workshop names may change but topic will stay the same.
American Planning Association
Education Credit

GO TO: HTTPS://PLANNING.ORG/EVENTS/EVENTMULTI/9210027/

2021 Critical Areas and Shorelines Monitoring and Adaptive Management Online Workshops

APWA Washington Chapter

Overview:
In partnership with the Washington State Department of Ecology and the Washington State Department of Fish and Wildlife, the Washington State Department of Commerce is developing an AIP workshops to provide technical assistance for tribal governments. This program seeks to train or educate monitoring and adaptive management of the critical areas and shoreline in their jurisdictions.

Land Acknowledgment

Discover which tribal lands you reside on text your zip code to (907) 312-5085.
Audience Engagement Poll

Poll

Question:

Does your jurisdiction see Ecology as a resource or as a regulator?
Meet Your Presenters

Rick Mraz is a certified Professional Wetland Scientist who works as the Wetlands Policy Lead for the Department of Ecology. He began his career in wetlands work in Lee County, Florida in 1987. He has worked as a field biologist and environmental planner with local, state and federal agencies in Washington since 2001. Rick has degrees in Geology, Field Biology and Philosophy.

Wetland regulation in Washington

Growth Management:
The Roles of Ecology and the Local Government in Wetland protection
Local, state, and federal regulation

Local – RCW 36.70A (GMA), critical areas ordinances (CAO) & RCW 90.58, Shoreline Master Programs

State- RCW 90.48, WAC 173-201A (Water Pollution Control Act)

Federal – Clean Water Act (CWA)

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Washington’s Growth Management Act (GMA)

The Washington Legislature enacted the Growth Management Act (GMA) in 1990 to guide planning for growth and development in Washington State.

GMA requires local governments in fast growing and densely populated counties to develop and adopt comprehensive plans.
GMA Requirements – RCW 36.70A

All counties and cities are required to:

- Designate and protect critical areas functions and values
- Wetlands are one of the listed critical areas.

RCW 36.70A.172

Critical areas—Designation and protection—Best available science to be used.

Critical Areas Ordinances (CAOs)

Counties and cities shall include the best available science in developing policies and development regulations.

A well-documented record should support local governments’ decision-making.
Agency support for GMA

Counties and cities should (substantively) consider wetlands protection guidance provided by the Department of Ecology*, including:

- Management recommendations based on the best available science (CAO Guidance)
- Mitigation guidance
- [https://ecology.wa.gov/Water-Shorelines/Wetlands/Regulations/Local-regulations](https://ecology.wa.gov/Water-Shorelines/Wetlands/Regulations/Local-regulations)

*WAC 365-190-090

Wetland Guidance for CAO Updates

Most current guidance (2016)

Incorporates BAS

Sample ordinance
Buffers 101

Scientific literature is clear that buffers are critical to maintaining wetlands and their functions.

Width is only one of several factors that affect buffer effectiveness (adjacent land use, condition of buffer, etc.).

Width depends on what function you’re protecting:
- Water quality: 10-50 feet
- Wildlife habitat: 100-1200 feet
Buffer tables in Ecology’s wetland guidance

Use rating scores and category descriptions from 2014 rating system

Emphasis on habitat function score

Emphasizes the importance of a corridor in protecting habitat function for some wetlands

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Regulating wetland buffers

<table>
<thead>
<tr>
<th>Wetland Category</th>
<th>Buffer width (in feet) based on habitat score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3-5</td>
</tr>
<tr>
<td>Category I:</td>
<td></td>
</tr>
<tr>
<td>Based on total score</td>
<td>75</td>
</tr>
<tr>
<td>Bogs and Wetlands of High Conservation Value</td>
<td></td>
</tr>
<tr>
<td>Category I:</td>
<td></td>
</tr>
<tr>
<td>Intertidal</td>
<td>225</td>
</tr>
<tr>
<td>(buffer width not based on habitat scores)</td>
<td></td>
</tr>
<tr>
<td>Category II:</td>
<td></td>
</tr>
<tr>
<td>Based on score</td>
<td>75</td>
</tr>
<tr>
<td>Estuarine and Coastal Lagoons</td>
<td></td>
</tr>
<tr>
<td>(buffer width not based on habitat scores)</td>
<td></td>
</tr>
<tr>
<td>Category II:</td>
<td></td>
</tr>
<tr>
<td>Intertidal Wetlands</td>
<td>110</td>
</tr>
<tr>
<td>(buffer width not based on habitat scores)</td>
<td></td>
</tr>
<tr>
<td>Category III (all)</td>
<td>60</td>
</tr>
<tr>
<td>Category IV (all)</td>
<td>40</td>
</tr>
</tbody>
</table>
Risk-based approach

Ecology’s guidance is a moderate-risk approach

Consider the cumulative effects of:
  • Exemptions
  • Exceptions
  • Averaging
  • Reduction

The bottom line: What buffer do you end up with and is it wide enough to protect the function present?

Protecting wetland buffers

Local governments have a primary role in regulating wetland buffers

State and federal CWA jurisdictions are triggered only when there is a direct wetland impact

Ecology’s recommended buffer widths are based on an assumption that the buffer is well vegetated.

Where the buffer is not well vegetated, it is necessary to either increase the buffer width or require that the standard buffer width be revegetated.
Protecting wetland buffers

Impacts to buffers may be considered indirect impacts to wetlands

CAOs often contain provisions for buffer averaging or reduction

CAOs should contain mitigation requirements for buffer impacts or indirect impacts

Indirect impacts

Indirect impacts
- occur outside the footprint of direct impacts.
- result in a reduction of wetland function
- compensatory mitigation is needed to offset these losses.

e.g.:
Buffer encroachment
Stormwater inputs
Fragmentation
Mitigation

Begins with sequencing

Offsets impacts (Ratios, risk factors, temporal loss)

Needs to be monitored for success

Mitigation sequencing

Washington State Environmental Policy Act (SEPA) and the federal Clean Water Act require

a) Avoiding
b) Minimizing
c) Rectifying
d) Reducing
e) Compensating
f) Monitoring
Mitigation sequencing

Avoidance and Mitigation Checklist

https://ecology.wa.gov/Water-Shorelines/Wetlands/Mitigation/Avoidance-and-minimization

When and how to get technical assistance

Tools & resources

Contacts by subject & region
Rating systems
Delineation resources
Hiring a qualified wetland professional
Best available science
Credit debit method
Function assessment project
Wetland program plan

Have a wetland-related question? Find our regional wetland and subject-specific wetland contacts.

Control region contacts
Periodic review

Ecology tracks amendments

Provides comments

Technical assistance

Questions?

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Shorelands and Environmental Assistance Program
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Nate Brown
Critical Areas Ordinance Specialist
Shorelands and Environmental Assistance Program
Nate.Brown@ecy.wa.gov
Poll

Question:

In the City or County where most of your work occurs, how are wetland reports and mitigation plans reviewed for technical accuracy and code consistency?

Ecology’s wetland compliance program

Improving compliance through monitoring and adaptive management
Program goals

Improve the success rate of wetland mitigation projects.

Ensure that wetland mitigation is implemented according to permit conditions.

Work collaboratively with applicants to achieve compliance and success at individual sites
  • Identify problems with wetland mitigation sites early.
  • Determine corrective actions necessary to ensure successful site development.
Early permit monitoring studies

1999-2001: Wetland Mitigation Evaluation Studies

• “50% of mitigation projects are successful”
  • Not achieving no net loss policy

• Correlation with agency follow up and compliance

• Need a better file and tracking system

Adaptive management strategies

2003: Develop new tracking system (Aquatics)
  • Improved ability to identify wetland 401/Aos
  • Limitations identified later

2004-2006: Update mitigation guidance document

Part 1: Mitigation Policies and Guidance (Updated in 2020)

Part 2: Developing Mitigation Plans
  • Revised emphasis on methods
Development of a compliance program

2006 – 2008: Wetland Regulatory Effectiveness Program

Initiated with EPA funding

2007 – 2008: The “Mitigation That Works” Initiative

Legislature add $ supports for ongoing compliance activities

Key objective

Ensure compliance w/ permit conditions related to mitigation requirements

• All wetland mitigation projects where Ecology issued a 401 or Administrative Order (AO) for wetland impacts starting January 1, 2004

• AO for “Isolated wetlands” (RCW 90.48) – no federal oversight so higher priority (but also look at size of impacts)

• Older projects as we have time
Monitoring and compliance activities

Track mitigation projects over time
Conduct site inspections
  • As-built
  • Mid-monitoring
  • End of monitoring
  • If problems are identified or technical assistance is needed.
Provide recommendations in follow-up letters or emails
Review reports (as-built and monitoring reports)
  • Track deadlines
  • Ensure reports have complete information per Ecology’s Order
Ensure other mitigation conditions are met
  • Protection mechanisms, etc.

Projects tracked

For Ecology-issued wetland permits issued since 2004:

  • tracked approximately 300 projects with traditional mitigation requirements
  • ~100 projects using alternative migration such as mitigation bank credits, advance mitigation, or in-lieu fees.
What we aren’t looking at (gaps)

Projects with in-water impacts only
Construction sites – where the impact is occurring
• are they following BMPs?
• did the impacts occur within the permitted footprint?

Wetland mitigation sites during or shortly after construction

Restoration projects (limited subset)

Temporary impacts

Important tracking tools

Use Aquatics database to identify wetland projects that may have required mitigation
• Project type = Wetlands or In-Water and Wetlands
• Ecology action = Permit type
• Ecology action date = [Timeframe of Interest]

Tracking compliance using SharePoint (transition to Aquatics in process)
SharePoint tracking tool

**Wetland Mitigation Compliance Tracking**

<table>
<thead>
<tr>
<th>Project Status</th>
<th>Active/Inactive</th>
<th>Need to Visit</th>
<th>Project Name</th>
<th>Federal #</th>
<th>Applicant</th>
<th>County</th>
<th>Assigned Info</th>
<th>Assigned/Land Specialist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Olden Active</td>
<td>Active</td>
<td>No</td>
<td>112th Street &amp; from Waller Rd E to Canyon Rd E</td>
<td>2000-4-00182</td>
<td>Pierce</td>
<td>Pierce County Public Works and Utilities</td>
<td>Granger, Teri (ECY)</td>
<td>Meyer, Zachary (ECY)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>127th Avenue Business Park</td>
<td>200700078</td>
<td>Hinton Development Corp.</td>
<td></td>
<td>Johnson, Patricia (ECY)</td>
<td>Rothwell, Rebecca (ECY)</td>
</tr>
<tr>
<td>Pending</td>
<td>Active</td>
<td>No</td>
<td>179th Street Regional Retail Center</td>
<td>200601103</td>
<td>Killian Pacific LLC (Philip Brebach)</td>
<td></td>
<td>Mock, Dana (ECY)</td>
<td>Rothwell, Rebecca (ECY)</td>
</tr>
<tr>
<td>Closed</td>
<td>Inactive</td>
<td>No</td>
<td>192nd Realignment</td>
<td>200300674</td>
<td>Vancouver City</td>
<td></td>
<td>Johnson, Patricia (ECY)</td>
<td>Rothwell, Rebecca (ECY)</td>
</tr>
</tbody>
</table>

**Things we’re tracking**

# of 401s/AOs issued with required wetland mitigation

![Graph showing # of 401s/AOs issued over time with traditional and alternative mitigation options]
Priorities

As-built visits
Review Year 1 report
Review Year 7 reports /close-out requirements
Close-out visits
Mid-term visits
Overdue reports
Projects using mitigation bank credits

Challenges

Transfer of ownership after mitigation site construction (LLCs/HOAs)

Data entry - backlog

Different approved mitigation plans - Local vs. state vs. federal

Beavers!
Adaptively managing our program

Training for regional staff

Update the 2006 Interagency Wetland Mitigation Guidance

Review our permit conditions. Are they still making sense?

Map the mitigation sites.

Evaluate program success.

Expand evaluation of ecological success.

Lessons learned

Early follow-up is important

The program needs to be flexible. Sites are not always going to turn out as planned.

Clearly written conditions that can be enforced.

Mitigation plans need to be complete:

- Well-considered, linked goals
- objectives
- performance standards
- monitoring
- contingency plans to begin
Program benefits

Improved permitting decisions.

Improved staff expertise.

Increased mitigation success.

Feedback loop.

Program benefits (continued)

Voluntary compliance

Improved consistency and predictability

Target improvements
Newskah Creek mitigation site

Questions?

Thank you

Rick Mraz, PWS
Wetlands Policy Lead
Washington Department of Ecology

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(360) 810-0024 - cell
rmra461@ecy.wa.gov
Poll

Question:

Is there a process for updating local critical area maps with new information from wetland delineations submitted during the permit review process?

Meet Your Presenters

Dr. Amy Yahnke is the senior wetland ecologist for the Shorelands and Environmental Assistance Program at the Washington State Department of Ecology. She holds a Certificate in Wetland Science and Management, BS in Environmental Horticulture, MS in Forest Resources, and PhD in Aquatic and Fishery Sciences. She has studied wetland ecology within the contexts of amphibians, invasive plants, and stormwater management. Dr. Yahnke has experience teaching a wide range of environmental topics to audiences of all ages.
Monitoring wetland buffer regulations
Dr. Amy Yahnke, WA Department of Ecology

A method to monitor permits

• Published 2017
• Funded by an EPA grant
• Work completed 2011-2013
Permit review and site assessment

Criteria for selecting a permit

- Project file
- Buffer requirements
- Wetland or adjacent
- Wetland buffer
- Project completed
Were permits issued consistent with CAO?

<table>
<thead>
<tr>
<th>Wetland Category</th>
<th>3-4</th>
<th>5</th>
<th>6-7</th>
<th>8-9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category I: Based on real score</td>
<td>75</td>
<td>165</td>
<td>165</td>
<td>225</td>
</tr>
<tr>
<td>Category II: Bogs and Wetlands</td>
<td>190</td>
<td></td>
<td></td>
<td>225</td>
</tr>
<tr>
<td>Category III: Coastal Lagoons</td>
<td>130</td>
<td>165</td>
<td>165</td>
<td>225</td>
</tr>
<tr>
<td>Category IV: Intertidal</td>
<td></td>
<td></td>
<td></td>
<td>225</td>
</tr>
<tr>
<td>Category V: Forested</td>
<td>75</td>
<td>165</td>
<td>165</td>
<td>225</td>
</tr>
<tr>
<td>Category VI: Estuarine</td>
<td>130</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Category VII: Based on score</td>
<td>75</td>
<td>165</td>
<td>165</td>
<td>225</td>
</tr>
<tr>
<td>Category VIII: Intertidal Wetlands</td>
<td>130</td>
<td>165</td>
<td>165</td>
<td>225</td>
</tr>
<tr>
<td>Category IX: Estuarine</td>
<td>130</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Category III (all)</td>
<td>60</td>
<td>165</td>
<td>165</td>
<td>225</td>
</tr>
<tr>
<td>Category IV (all)</td>
<td></td>
<td></td>
<td></td>
<td>40</td>
</tr>
</tbody>
</table>
What is the ecological condition of the buffer?
Characterizing the buffer

Ecologically significant buffer:
• Protective land cover
• 5 m wide
• 10 m along wetland
• Not separated from wetland

Table 2. List of Ecologically Significant Buffer Land Covers Based on the Anderson Land Cover Class System.

<table>
<thead>
<tr>
<th>Types of Land Covers that Count as Ecologically Significant Buffers</th>
<th>Non-Ecologically Significant Buffer Land Covers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open water (surfaces of lakes, bays, ponds, rivers, etc., with &lt;5% plant cover)</td>
<td>Built structures (houses, factories, schools, etc.)</td>
</tr>
<tr>
<td>Wetlands</td>
<td>Artificial, non-vegetated land surfaces (parking lots, solar farms, feedlots, etc. that support &lt;5% plant cover)</td>
</tr>
<tr>
<td>Permanent ice or snow (year-round snow or ice surfaces with &lt;5% plant cover)</td>
<td>Active mining areas (quarries, strip mines, gravel pits, etc.)</td>
</tr>
<tr>
<td>Natural, non-vegetated earth surfaces (natural rock outcrops, sand, gravel, etc. with &lt;5% plant cover)</td>
<td>Any active agriculture (orchards, vineyards, row crops, hay or grain fields, and farms, feedlots, recently clear-cut or otherwise severely impacted forest lands, etc. Includes all agricultural fields)</td>
</tr>
<tr>
<td>Natural vegetation (areas with ≥5% cover of mostly non-impacted vegetation, including herbaceous, forest, or old fields undergoing succession; excludes lawns, playing fields, agricultural crops of any kind, recent clear-cuts or otherwise impacted forest lands, or recently burned lands)</td>
<td>Any recently burned lands</td>
</tr>
<tr>
<td>Tracts (foot trails, equestrian trails, single-track bicycle trails, etc.)</td>
<td>Urban and recreational lawns, sports fields, etc.</td>
</tr>
<tr>
<td></td>
<td>Any roadway dangerous to wildlife (railroads, busy streets, highways, etc.)</td>
</tr>
<tr>
<td></td>
<td>ATV trails</td>
</tr>
<tr>
<td></td>
<td>Stormwater ponds</td>
</tr>
<tr>
<td></td>
<td>Utility corridors</td>
</tr>
</tbody>
</table>
Characterizing the buffer

Ecologically significant buffer:
1. Percent of wetland edge adjacent
2. Percent of permit buffer width
3. Percent of permit buffer area

4. Stressors in the buffer
Summarizing results:

- Permit buffer per requirements of the CAO?
- Permit buffer = ecologically significant buffer?
- Or proportion of permit buffer that is ecologically significant?
- Dominant stressors?
How to use results:

• Compare sites to each other
• Review policies, regulations, and procedures to determine where improvements in wetland protection are needed
  • File management
  • Inspections
  • Monitoring

Caveats

• Stressor lists are based on a national level assessment
• Stressor characterization is qualitative

<table>
<thead>
<tr>
<th>Portion of Area of Permit Buffer Influenced by Stressor Category</th>
<th>Severity Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than one-third</td>
<td>1</td>
</tr>
<tr>
<td>between one-third and two-thirds</td>
<td>2</td>
</tr>
<tr>
<td>at least two-thirds</td>
<td>3</td>
</tr>
</tbody>
</table>
Best list for WA?

Table 7. List of Non-Native or Invasive Species for Metric 4°.

<table>
<thead>
<tr>
<th>Species</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eurasian Watermilfoil</td>
<td>Myriophyllum spicatum</td>
</tr>
<tr>
<td>Waterhyacinth</td>
<td>Eichhornia crassipes</td>
</tr>
<tr>
<td>Yellow Floating Heart</td>
<td>Nymphoides peltata</td>
</tr>
<tr>
<td>Giant Salvinia</td>
<td>Salvinia molesta</td>
</tr>
<tr>
<td>Garlic Mustard</td>
<td>Alliaria petiolata</td>
</tr>
<tr>
<td>Poison Hemlock</td>
<td>Conium maculatum</td>
</tr>
<tr>
<td>Mile-a-Minute Weed</td>
<td>Persicaria perfoliata</td>
</tr>
<tr>
<td>Birdsfoot Trefoil</td>
<td>Lotus corniculatus</td>
</tr>
<tr>
<td>Purple Loosestrife</td>
<td>Lythrum salicaria</td>
</tr>
<tr>
<td>Knotweed</td>
<td>Polygonum amaritrare</td>
</tr>
<tr>
<td>Japanese Knotweed</td>
<td>Polygonum cuspidatum</td>
</tr>
<tr>
<td>Perennial Pepperweed</td>
<td>Lepidium insulotum</td>
</tr>
<tr>
<td>Giant Reed</td>
<td>Arundo donax</td>
</tr>
<tr>
<td>Cheatgrass</td>
<td>Bromus tectorum</td>
</tr>
<tr>
<td>Reed Canary Grass</td>
<td>Phalaris arundinacea</td>
</tr>
<tr>
<td>Common Reed</td>
<td>Phragmites australis</td>
</tr>
<tr>
<td>Johnsongrass</td>
<td>Sorghum halpense</td>
</tr>
<tr>
<td>Kadzai</td>
<td>Pueraria montana var. lobata</td>
</tr>
<tr>
<td>Mutiflora Rose</td>
<td>Rosa multiflora</td>
</tr>
<tr>
<td>Common Buckhorn</td>
<td>Rhamnus cathartica</td>
</tr>
<tr>
<td>Himalayan Blackberry</td>
<td>Rubus armeniacausi</td>
</tr>
<tr>
<td>Tamarisk</td>
<td>Tamarix spp.</td>
</tr>
</tbody>
</table>

Caveats

- GIS vs. aerial image interpretation
Does our guidance for Characterizing Wetland Buffers address condition of the wetland?

Recommendations for monitoring and tracking wetland and wetland buffer impacts

- For a statistical sample:
  - Number of classes (questions)
  - Number of permits available
  - Random selection
  - Minimum of 50 samples per class

- Small jurisdictions/few permits
  - Use all permits available
Recommendations for monitoring and tracking wetland and wetland buffer impacts

• **Maintain a database of permits:**
  - List projects
  - Location, contact information, parcel number
  - Sizes and whether restoration required
  - Variance of buffer width

• **Consider follow-up procedures:**
  - Priorities
  - Inspection program
  - Periodic review
  - Aerial imagery review
    - High resolution change detection (WDFW)

---

Q&A

**TYPE YOUR QUESTIONS IN THE Q&A BOX IN YOUR TOOLBAR**
Poll

Questions:

Question 1
How often do you monitor built projects for compliance with buffer protections and any required mitigation established by the permit?

Question 2
Are you interested in tracking, monitoring, and adaptively managing how wetlands are regulated within your jurisdiction?

Thank you!

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