

Welcome

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



Wetlands

JANUARY 27, 2021

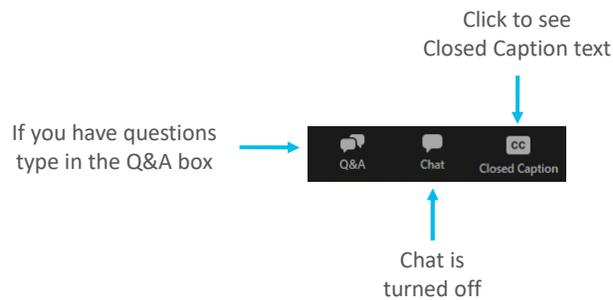


2021 Critical Areas and Shoreline Monitoring & Adaptive Management Online Workshops



Welcome to
Wetlands

2021 Critical Areas and Shoreline Monitoring & Adaptive Management Online Workshops



2021 Critical Areas and Shoreline Monitoring & Adaptive Management Online Workshops

The screenshot shows a webinar slide with a dark blue background. On the left, the title "How to Successfully Protect Critical Areas and Shorelines: A Step-by-Step Introduction to Monitoring and Adaptive Management" is written in white. Below the title, it says "JANUARY 13, 2021". On the right, there are logos for the Washington Department of Fish and Wildlife, the Washington State Department of Commerce, and the Department of Ecology, State of Washington. To the right of the logos is a video feed showing two participants: a woman named Maria Schmidt and a man named Scott Kupper. An arrow points to the video feed with the text "Click in between to change size".

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Visit Project Website for More Information

https://www.ezview.wa.gov/site/alias_1992/37576/overview.aspx

The screenshot shows the website for "Critical Areas Adaptive Management Training Workshops". The page has a header with the "ez view" logo and navigation tabs for "Overview", "Contacts", "Events", "2021 Workshops", and "Library". The main content area is titled "2021 Workshops" and contains the following text:

Do you want to know if your critical areas and shoreline regulations are working as intended? Or how to effectively track special permit conditions and mitigation requirements?

Please join us for an in depth review of best practices, case studies, resources, and tools to enhance monitoring and adaptive management efforts for your critical areas and shorelines.

As a follow-up to our 2018 workshops, this 11-week webinar series features expert guest speakers, opportunities for peer-to-peer learning, information sharing, and individual technical assistance.

Earn AICP continuing education credits for your attendance!

Click on a link below to register. (Most sessions are 90 minutes. A couple sessions may go up to 2 hours.)

- Adaptive Management Workshop 1 – How to Successfully Protect Critical Areas and Shorelines: A Step-by-Step Introduction to Monitoring and Adaptive Management
- Adaptive Management Workshop 2 – Setting the Stage: Successful adaptive management and critical areas monitoring opportunities
- Adaptive Management Workshop 3 – Wetlands
- Adaptive Management Workshop 4 – Geologically Hazardous
- Adaptive Management Workshop 5 – Fish and Wildlife Habitat Conservation Areas
- Adaptive Management Workshop 6 – Frequently Flooded Areas
- Adaptive Management Workshop 7 – Critical Aquifer Recharge Areas (CARAs)
- Adaptive Management Workshop 8 – Shoreline
- Adaptive Management Workshop 9 – Permit Implementation Monitoring Tools
- Adaptive Management Workshop 10 – CAO Performance Indicators
- Adaptive Management Workshop 11 – Adaptive Management Interactive Workshop

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2021 Critical Areas and Shoreline Monitoring & Adaptive Management Online Workshops



This project has been funded wholly or in part by the United States Environmental Protection Agency under assistance agreement PC-01J2230116-05251 through the Washington Department of Fish and Wildlife.

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



February 24 - 9:00 a.m. - 11:00 a.m.
Critical Aquifer Recharge Areas (CARAs)



January 20 - 9:00 a.m. - 11:00 a.m.
Setting the Stage: Successful adaptive management and critical areas monitoring program basics



March 3 - 9:00 a.m. - 11:00 a.m.
Shorelines



January 27 - 9:00 a.m. - 11:00 a.m.
Wetlands



March 10 - 9:00 a.m. - 11:00 a.m.
Permit Implementation Monitoring Tools



February 3 - 9:00 a.m. - 11:00 a.m.
Geologically Hazardous Areas



March 17 - 9:00 a.m. - 11:00 a.m.
CAO Performance Indicators



February 10 - 9:00 a.m. - 11:00 a.m.
Fish and Wildlife Habitat Conservation Areas



March 24 - 9:00 a.m. - 11:00 a.m.
Adaptive Management Interactive Workshop



February 17 - 9:00 a.m. - 11:00 a.m.
Frequently Flooded Areas

Note: Workshop names may change but topic will stay the same.

American Planning Association Education Credit

GO TO: [HTTPS://PLANNING.ORG/EVENTS/EVENTMULTI/9210027/](https://planning.org/events/eventmulti/9210027/)

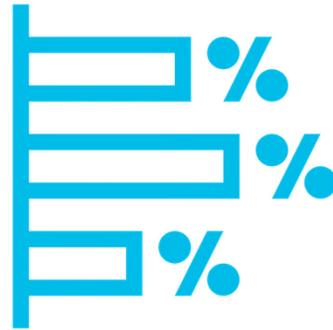
The screenshot shows the American Planning Association (APA) website. The header includes the APA logo, the tagline 'Creating Great Communities for All', and navigation links for 'About APA', 'Join', and 'Log In'. A search bar is present with the text 'Enter keyword or phrase' and a 'Search' button. A main navigation menu contains links for 'Membership', 'Knowledge Center', 'Education and Events', 'AICP', 'Policy and Advocacy', 'Career Center', 'In Your Community', 'Connect with APA', and 'APA Foundation'. The left sidebar lists 'Education and Events' with sub-links for 'Online Education', 'Educational Events', 'National Planning Conference', 'Policy and Advocacy Conference', 'Speaker Directory', 'Burnham Forum', and 'Calendar of Events'. The main content area features the breadcrumb 'Home > Education and Events > Educational Events >', the event title '2021 Critical Areas and Shorelines Monitoring and Adaptive Management Online Workshops', and the 'APA Washington Chapter' information. The event details include the ID '#9210027', dates 'Wednesday, February 3, 2021, 9 a.m.' and 'Wednesday, March 24, 2021, 11 a.m. PDT', and location 'Olympia, WA, United States'. An 'OVERVIEW' section states: '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 11-week webinar series featuring expert guest speakers, opportunities for peer-to-peer learning, information sharing, and technical assistance for local government planners seeking to start or enhance monitoring and adaptive management of the critical areas and shorelines 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.

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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.

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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.



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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.

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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>

*WAC 365-190-090

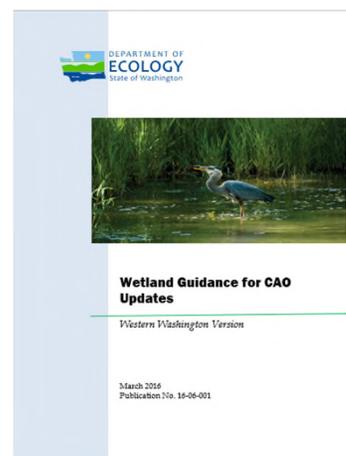
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Wetland Guidance for CAO Updates

Most current guidance (2016)

Incorporates BAS

Sample ordinance



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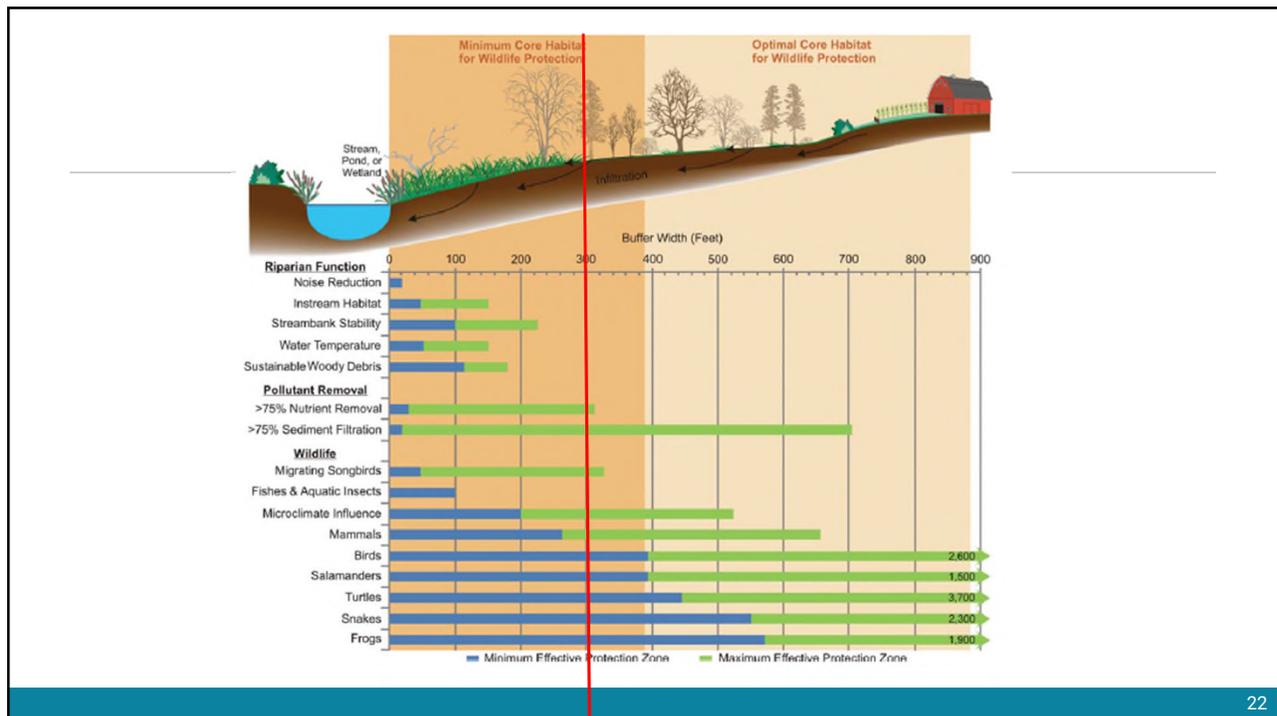
Buffers 101

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



**Washington State
Wetland Rating System**

For Western Washington

2014 Update



October 2014 - Effective January 2015
Publication no. 14-06-029

Regulating wetland buffers

Wetland Category	Buffer width (in feet) based on habitat score		
	3-5	6-7	8-9
Category I: Based on total score	75	110	225
Category I: Bogs and Wetlands of High Conservation Value	190		225
Category I: Interdunal	225 (buffer width not based on habitat scores)		
Category I: Forested	75	110	225
Category I: Estuarine and Coastal Lagoons	150 (buffer width not based on habitat scores)		
Category II: Based on score	75	110	225
Category II: Interdunal Wetlands	110 (buffer width not based on habitat scores)		
Category II: Estuarine and Coastal Lagoons	110 (buffer width not based on habitat scores)		
Category III (all)	60	110	225
Category IV (all)	40		

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?*

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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**.

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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

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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

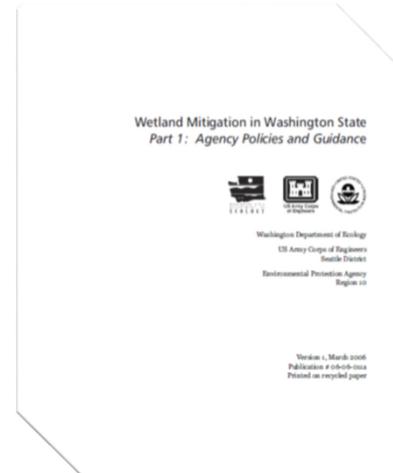
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Mitigation

Begins with sequencing

Offsets impacts (Ratios, risk factors, temporal loss)

Needs to be monitored for success



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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

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Mitigation sequencing

Avoidance and Mitigation Checklist

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

Wetland Avoidance and Minimization Checklists



These checklists provide examples of how to accomplish avoidance and minimization during site analysis, project design, and construction. They are tools to help applicants prepare more complete project applications, which will facilitate faster review and decisions.

Project Assessment

Yes/No	Site Analysis
	Is the wetland rated as Category I or II or listed as a wetland with Special Characteristics or that needs Special Protection in the appropriate state rating system:

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.



Central region contacts +

Periodic review

Ecology tracks amendments

Provides comments

Technical assistance

County	City	Notes	EMP Updated	Rating System	Small Wetlands Exempted	Buffers Cat. I	Buffers Cat. II	Buffers Cat. III	Buffers Cat. IV	Buffer Comments
Clallam	Sequim	Need to update habitat scores in SGP	Yes		Isolated < 1,000 sf wetland of minor, 8-7,000 for 2,000 sf between 8,100 and 10,000 investigation	200-100	200-85 depending on habitat score	125-40 depending on habitat score	20	Impact reducing measures are required averaging of 25%
Clallam	Forks	Need to review category also systems, habitat scores	No	2004	< 1,000 wetland w/ criteria (CIV) (includes 8-7,000 1000 4,000 II & IV)	AI 3	AI 3	AI 3	AI 3	Reductions of critical mass of impacts. High intensity has already residential not defined. Low density use. 4 in each moderate & low impact categories. Averaging can reduce area or reduce point width below 75% of standard.
Clallam		Refers to state delineation manual	No	Their own version		"Class I" 200-100	"Class II" 150-75	"Class III" 75-50	"Class IV" 50-25	Based on impact area data. Buffer averaging "buffer" is not net loss of area. No point width < 25' unless exception.
Clark	Battle Ground	Need to update habitat scores in SGP	Yes	2004	Isolated 3-8 < 2,000 sf & isolated 9' < 10,000 sf	Pierce Co. mod aB3	Pierce Co. mod aB3	Pierce Co. mod aB3	Pierce Co. mod aB3	High intensity includes > 4 units per parcel (not acres). Low intensity does not include residential. Moderate intensity includes no more than 1 home per 5 acres. Averaging can reduce pct of have point width < 75% of standard. New roads and culverts allowed to cross buffers w/ low criteria. Farmers allowed 20' buffers w/ criteria.
Clark	Camas	Did not update system criteria	Yes	2014	8-2,500, IV = < 4,000 Isolated = 4,500 w/ 4-20 habitat points < 10,000 with criteria	AI 3A	AI 3A	AI 3A	AI 3A	
Clark	La Center	Need to update habitat scores	Yes	2004	4,500 w/ 4-20 habitat points < 10,000 with criteria	AI 3	AI 3	AI 3	AI 3	Based on intensity and habitat score
Clark	Ritzfield	Need to update habitat scores	Yes	2004		AI 3	AI 3	AI 3	AI 3	Mod. Format
Clark	Vancouver	Need to update delineation manual and habitat scores	Yes	2004	no mention	AI 3	AI 3	AI 3	AI 3	Averaging can't be combined with reductions or mass excursions, can't reduce total area, and can't reduce width by > 25% or below 25'. Bufferlines possible for minimization of land use impacts. No limit on trail width.

Questions?

Rick Mraz, PWS
 Wetland Policy Lead
 Shorelands and Environmental Assistance Program
Rick.mraz@ecy.wa.gov

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



The Wetland Mitigation Compliance Team



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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

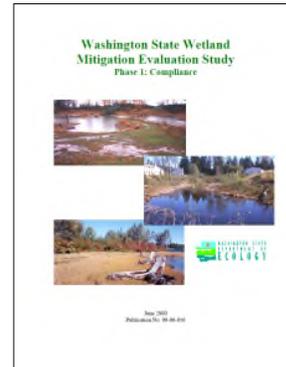
- Identify problems with wetland mitigation sites early.
- Determine corrective actions necessary to ensure successful site development.

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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



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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

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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

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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

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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.

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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.

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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

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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)

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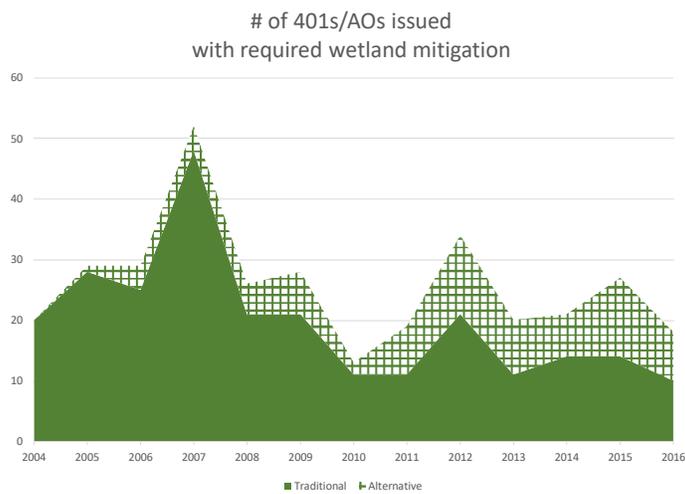
SharePoint tracking tool

Wetland Mitigation Compliance Tracking

<input type="checkbox"/> Project Status	Active/Inactive	Need to Visit	Project Name	Federal #	Applicant	County	<input type="checkbox"/> AssignedTo	AssignedWetlandSpecialist
Older: Active	Active	No	112th Street E from Waller Rd E to Canyon Rd E	2000-4-00182	Pierce County Public Works and Utilities	Pierce	<input type="checkbox"/> Granger, Teri (ECY)	Meyer, Zachary (ECY)
Mid-monitoring done	Active	Maybe	127th Avenue Business Park	200700078	Hinton Development Corp.	Clark	<input type="checkbox"/> Johnson, Patricia (ECY)	Rothwell, Rebecca (ECY)
Pending	Active	No	179th Street Regional Retail Center	200601103	Killian Pacific LLC (Philip Bretsch)	Clark	<input type="checkbox"/> Mock, Dana (ECY)	Rothwell, Rebecca (ECY)
Closed	Inactive	No	192nd Realignment	200300674	Vancouver City	Clark	<input type="checkbox"/> Johnson, Patricia (ECY)	Rothwell, Rebecca (ECY)

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Things we're tracking



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

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Challenges

- Transfer of ownership after mitigation site construction (LLCs/HOAs)
- Data entry - backlog
- Different approved mitigation plans - Local vs. state vs. federal
- Beavers!

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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.

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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



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Program benefits

Improved permitting decisions.

Improved staff expertise.

Increased mitigation success.

Feedback loop.

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Program benefits (continued)

Voluntary compliance

Improved consistency and predictability

Target improvements

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Newskah Creek mitigation site



Questions?

Thank you

Rick Mraz, PWS
Wetlands Policy Lead
Washington Department of Ecology

(360) 407-6924 - desk

(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?

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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.

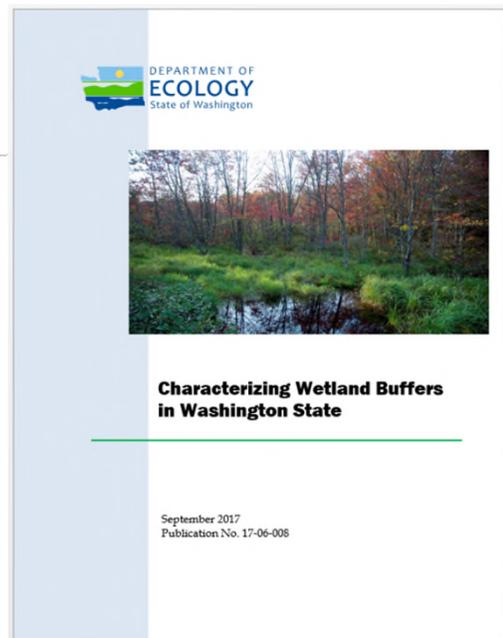
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Monitoring wetland buffer regulations

Dr. Amy Yahnke, WA Department of Ecology

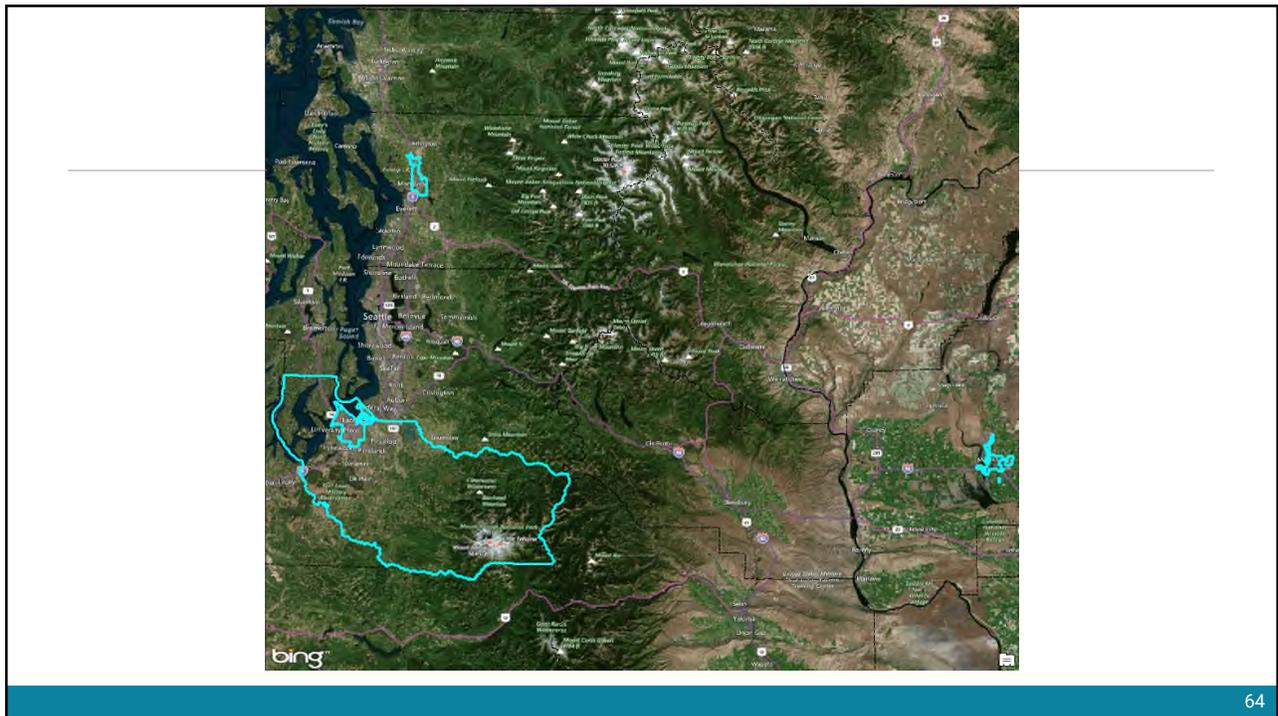
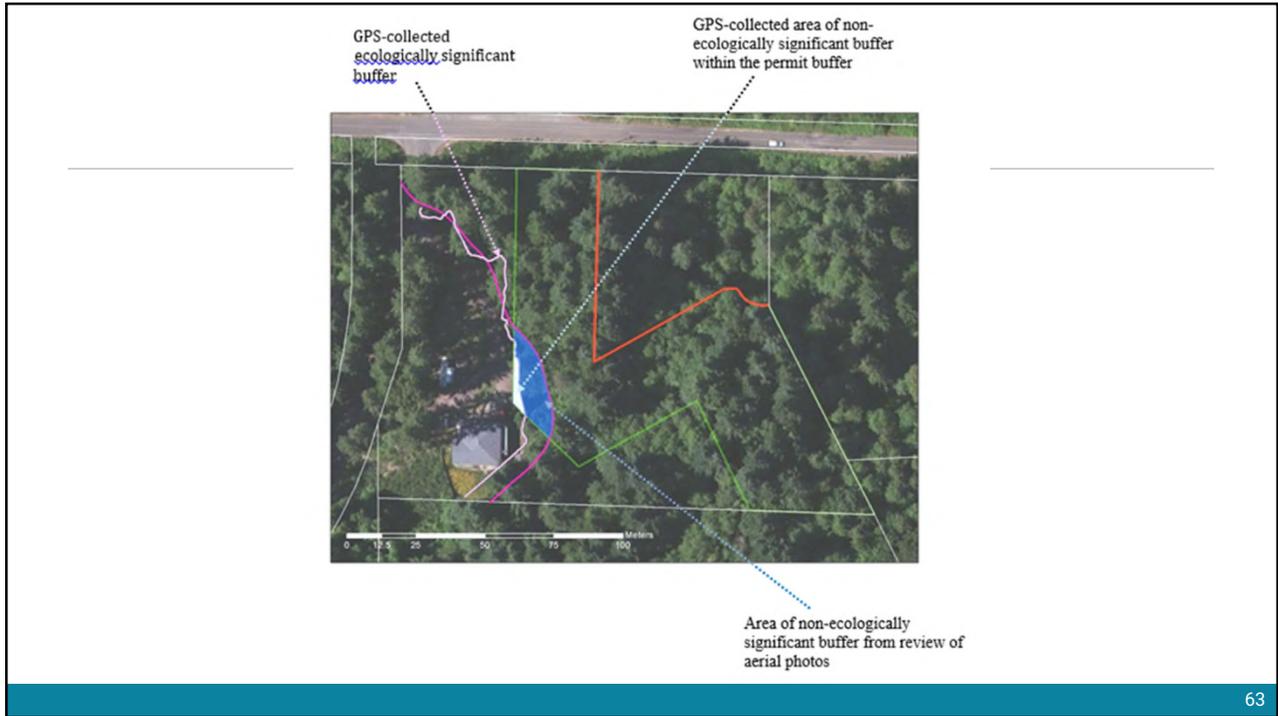
A method to monitor permits

- Published 2017
- Funded by an EPA grant
- Work completed 2011-2013

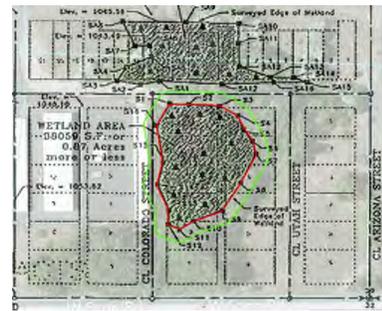




Form for Screening Permits		
<p style="text-align: center;">Worksheet For Reviewing a CAO</p> <p>Jurisdiction _____ Date of CAO _____ (check permit to see when it was v Date of Review _____ Reviewed by: _____</p> <p>Buffer widths (if applicable, consider score for habitat points and land Category I _____ Category II _____ Category III _____ Category IV _____ Other _____</p> <p>Reductions for implementing impact-reducing measures _____</p> <p>Allowable discretionary changes to buffer width Averaging _____ how much _____ Reduction if enhancement _____ how much _____ Increases for special conditions _____ what conditions _____ Other _____</p> <p>Other requirements for buffer Enhancement (planting to create an appropriate plant commu native invasive plant species) _____ Signs _____ Fencing _____ Other _____</p>	<p>Jurisdiction _____ Project Name _____ File Number (use at file building, engineering, etc) _____</p> <p>Date Reviewed _____ Scanned File Number _____</p> <p>Date of Project Approval/Permit _____ Date Project Completed _____ Project Type _____ Project Size _____ Project Location _____ Date of Wetland Report _____ Size of Wetland _____ Geomorphic Setting _____ Wetland Rating _____ Permit Required Buffer Width _____ Fixed or Variable Buffer _____ Buffer Averaging _____ Buffer Reduction and Reason _____ Buffer Restoration Type _____ Final Inspection Required _____ Buffer Monitoring Required _____ Date of CAO in Effect _____ Buffer Required by CAO in Effect _____ Other Relevant Information _____</p>	<p style="text-align: center;">Worksheet For Reviewing a Permit</p> <p>Permit # _____ Date of permit _____ Date of CAO in effect when vested _____ Date of Review _____ Reviewed by: _____</p> <p>Category of wetland for which permit is required Category I _____ Category II _____ Category III _____ Category IV _____ Other _____</p> <p>Basic buffer width specified in the permit _____ (including adjustment for habitat points and impact-reducing measures if properly documented) (N/A if not discussed in permit)</p> <p>Allowable discretionary changes to buffer width Averaging _____ how much _____ Reduction if enhancement _____ how much _____ Increases for special conditions _____ what conditions _____ Other _____</p> <p>Other requirements for buffer Enhancement (planting to create an appropriate plant community, removal of non- native invasive plant species) _____ Signs _____ Fencing _____ Other _____</p>



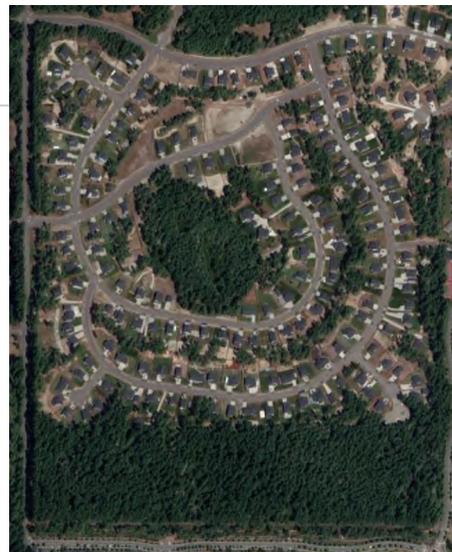
Permit review and site assessment



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Criteria for selecting a permit

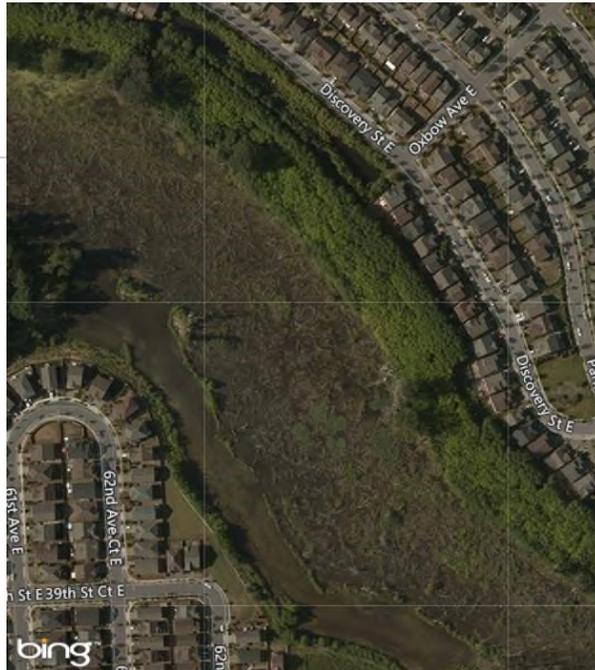
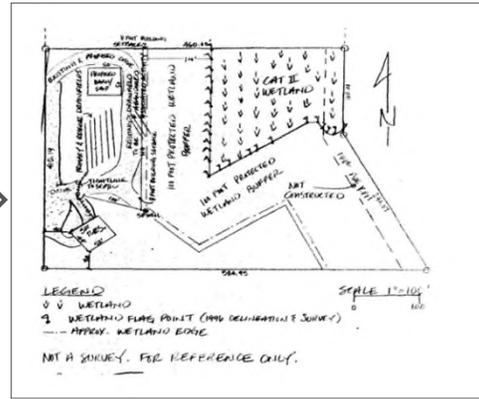
- Project file
- Buffer requirements
- Wetland or adjacent
- Wetland buffer
- Project completed

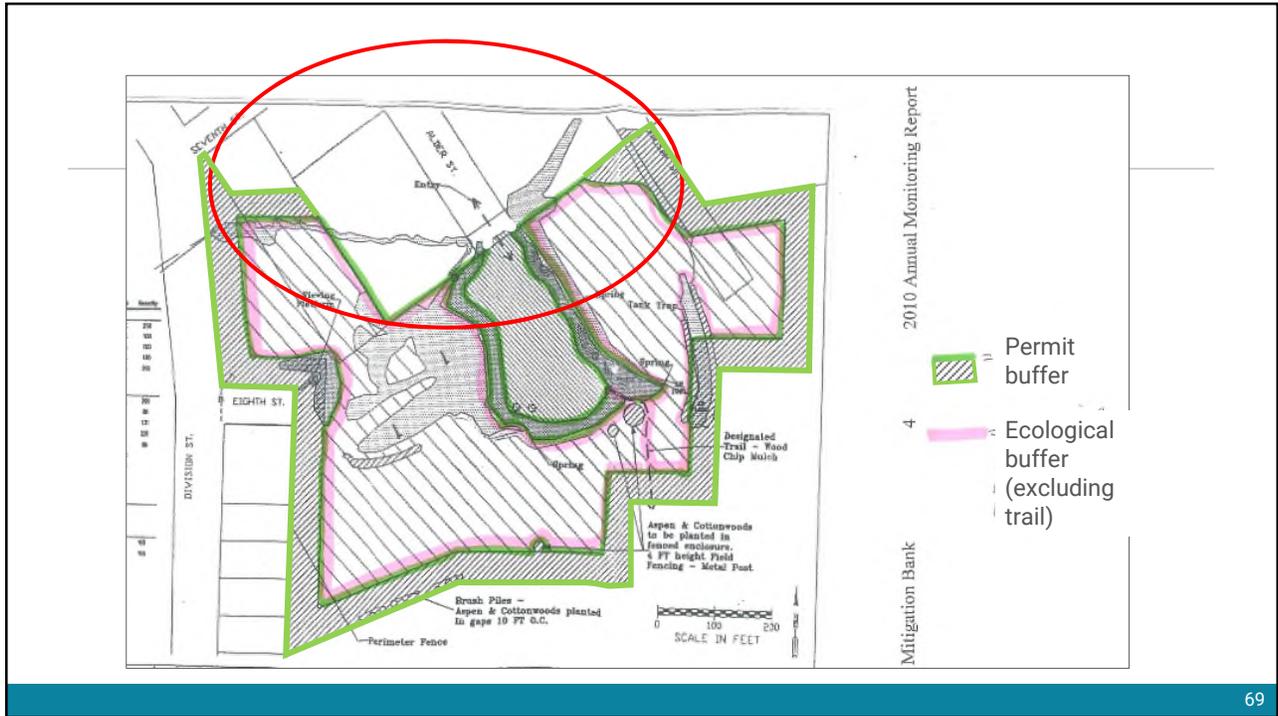


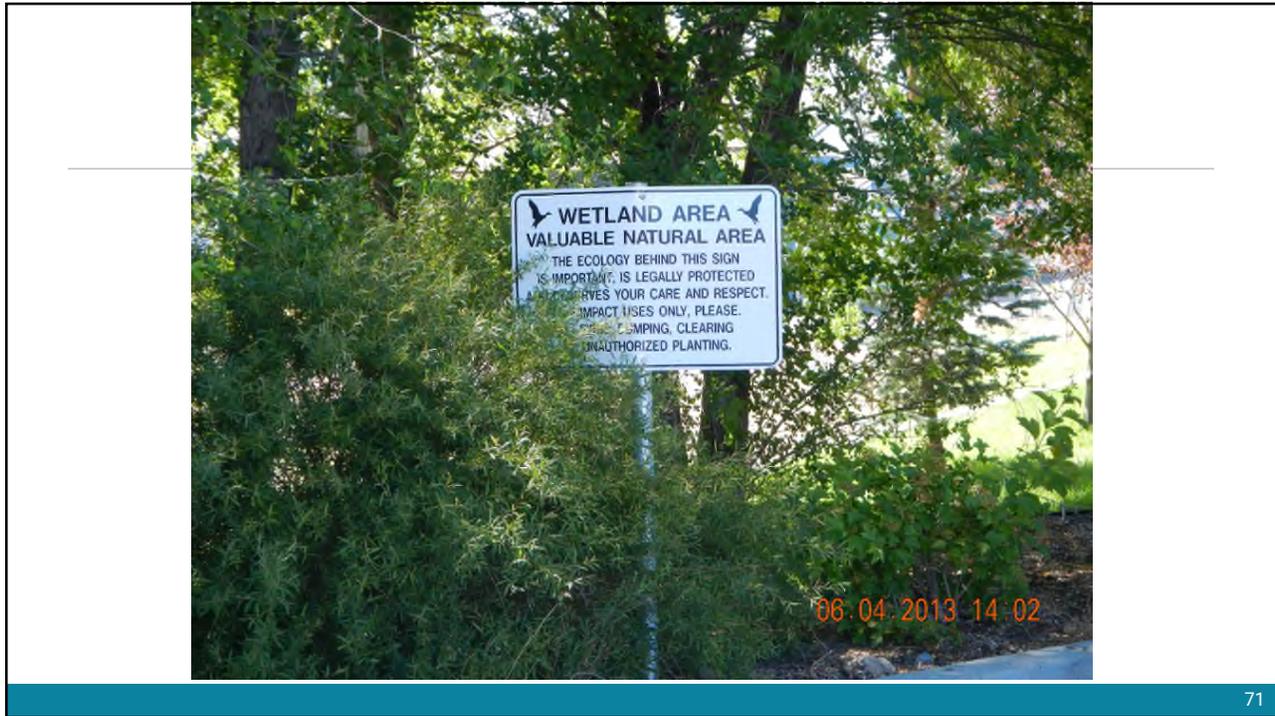
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Were permits issued consistent with CAO?

Wetland Category	Buffer width (in feet) based on habitat score			
	3-4	5	6-7	8-9
Category I: Based on total score	75	105	165	225
Category I: Bogs and Wetlands of High Conservation Value	190			225
Category I: Coastal Lagoons	150		165	225
Category I: Interdunal				225
Category I: Forested	75	105	165	225
Category I: Estuarine	150 (buffer width not based on habitat scores)			
Category II: Based on score	75	105	165	225
Category II: Interdunal Wetlands	110		165	225
Category II: Estuarine	110 (buffer width not based on habitat scores)			
Category III (all)	60	105	165	225
Category IV (all)	40			

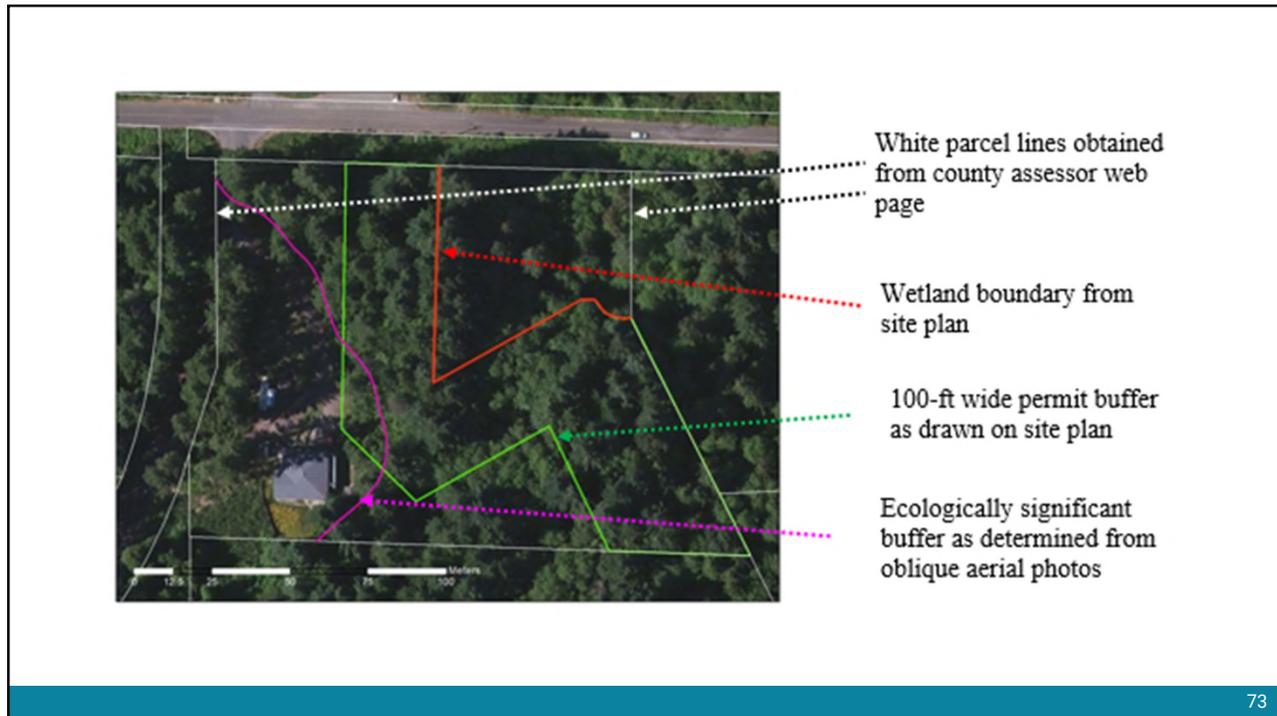






What is the ecological condition of the buffer?





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.

Types of Land Covers that Count as Ecologically Significant Buffers	Non-Ecologically Significant Buffer Land Covers
<ul style="list-style-type: none"> • Open water (surfaces of lakes, bays, ponds, rivers, etc. with <5% plant cover) • Wetlands • Permanent ice or snow (year round snow or ice surfaces with <5% plant cover) • Natural, non-vegetated earth surfaces (natural rock outcrops, sand, gravel, etc. with <5% plant cover) • 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) • Trails (foot trails, equestrian trails, single-track bicycle trails, etc.) 	<ul style="list-style-type: none"> • Built structures (houses, factories, schools, etc.) • Artificial, non-vegetated land surfaces (parking lots, solar farms, feed lots, etc. that support <5% plant cover) • Active mining areas (quarries, strip mines, gravel pits, etc.) • Any active agriculture (orchards, vineyards, row crops, hay or grain fields, sod farms, feedlots, recently clear-cut or otherwise severely impacted forest lands, etc. Includes fallow agricultural fields) • Any recently burned lands • Urban and recreational lawns, sports fields, etc. • Any roadway dangerous to wildlife (railroads, busy streets, highways, etc.) • ATV trails • Stormwater ponds • Utility corridors

Characterizing the buffer

Ecologically significant buffer:

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

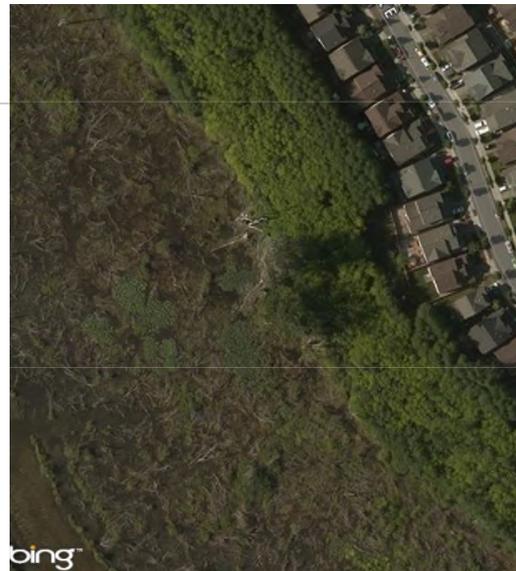


■ Permit buffer
— Ecologically significant buffer

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Characterizing the buffer

4. Stressors in the buffer



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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

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Caveats

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

Table 6. Guidelines for assessing the severity of a stressor.

Portion of Area of Permit Buffer Influenced by Stressor Category	Severity Code
less than one-third	1
between one-third and two-thirds	2
at least two-thirds	3

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Best list for WA?



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

Eurasian Watermilfoil	<i>Myriophyllum spicatum</i>
Waterhyacinth	<i>Eichhornia crassipes</i>
Yellow Floating Heart	<i>Nymphoides peltata</i>
Giant Salvinia	<i>Salvinia molista</i>
Garlic Mustard	<i>Alliaria petiolata</i>
Poison Hemlock	<i>Conium maculatum</i>
Mile-a-Minute Weed	<i>Persicaria perfoliata</i>
Birdsfoot Trefoil	<i>Lotus corniculatus</i>
Purple Loosestrife	<i>Lythrum salicaria</i>
Knotweed	<i>Polygonum aviculare</i>
Japanese Knotweed	<i>Polygonum cuspidatum</i>
Perennial Pepperweed	<i>Lepidium latifolium</i>
Giant Reed	<i>Arundo donax</i>
Cheatgrass	<i>Bromus tectorum</i>
Reed Canary Grass	<i>Phalaris arundinacea</i>
Common Reed	<i>Phragmites australis</i>
Johnsongrass	<i>Sorghum halepense</i>
Kudzu	<i>Pueraria montana var. lobata</i>
Multiflora Rose	<i>Rosa multiflora</i>
Common Buckthorn	<i>Rhamnus cathartica</i>
Himalayan Blackberry	<i>Rubus armeniacus</i>
Tamarisk	<i>Tamarix spp.</i>

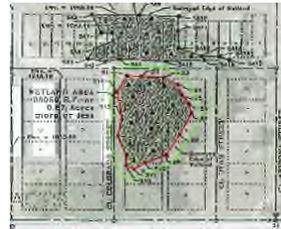
Caveats

- GIS vs. aerial image interpretation

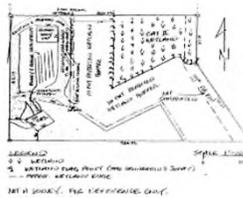
Figure E-1. Shows GPS-collected ecologically significant buffer (light pink line) and new area of non-ecologically significant buffer (light blue area). Compare to GIS-generated non-ecologically significant buffer (dark pink line) in Figure 5b (dark blue area).



Does our guidance for Characterizing Wetland Buffers address condition of the wetland?



Wetland Category	Buffer width (in feet) based on habitat score			
	3-4	5	6-7	8-9
Category I: Based on total score	75	100	160	225
Category II: Bays and Wetlands of High Conservation Value	100			
Category III: Coastal Lagoons	150	160	225	225
Category IV: Interdunal	225			
Category V: Estuarine (buffer width not based on habitat score)	75	100	160	225
Category VI: Estuarine (buffer width not based on habitat score)	150			
Category VII: Based on score	75	100	160	225
Category VIII: Interdunal Wetlands	110	100	160	225
Category IX: Estuarine (buffer width not based on habitat score)	100			
Category X: Salt	60	100	160	225
Category XI: Salt	40			



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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



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Recommendations for monitoring and tracking wetland and wetland buffer impacts

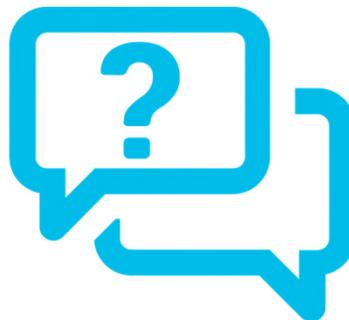
- **Maintain a database of permits:**
 - List projects
 - Location, contact information, parcel number
 - Sizes and whether restoration required
 - Variance of buffer width
- **Consider follow-up procedures:**
 - Priorities
 - Inspection program
 - Periodic review
 - Aerial imagery review
 - High resolution change detection (WDFW)



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Q&A

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



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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!



Rick Mraz, PWS

WETLANDS POLICY LEAD
WASHINGTON DEPARTMENT OF ECOLOGY
rmraz461@ecy.wa.gov
(360) 407-6924 - desk
(360) 810-0024 - cell

Dr. Amy Yahnke

SHORELANDS AND ENVIRONMENTAL ASSISTANCE PROGRAM
WASHINGTON STATE DEPARTMENT OF ECOLOGY
ayah461@ECYWA.GOV

Nate Brown

CRITICAL AREAS ORDINANCE SPECIALIST
SHORELANDS AND ENVIRONMENTAL ASSISTANCE PROGRAM
Nate.Brown@ecy.wa.gov