



## Wetlands and Critical Areas Ordinances

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Vancouver, WA  
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## Destination:

- Wetlands: what are they, how to know one
- Overview of wetland functions, how they're determined, and how to protect them
- 10+ years of Ecology guidance documents: what are they, when to use them
- Updated guidance document: what's different
- Mapping tools
- How Ecology can help you

## Wetlands: What are they and why are we here?



## GMA Requirements – RCW 36.70A

- All counties and cities are required to **designate and protect critical areas functions and values** by the Growth Management Act



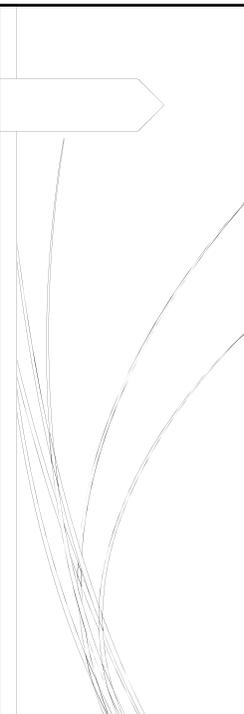
## RCW 36.70A.170

- **Natural resource lands and critical areas—Designations.**
  - (1) On or before September 1, 1991, each county, and each city, shall designate where appropriate:
  - (d) **Critical areas.**



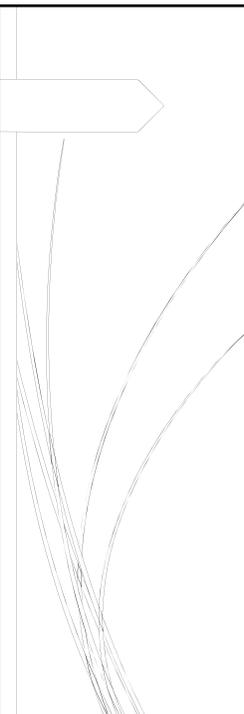
## RCW 36.70A.030

- **Definitions.**
- (5) "Critical areas" include the following areas and ecosystems: (a) **Wetlands**; (b) areas with a critical recharging effect on aquifers used for potable water; (c) fish and wildlife habitat conservation areas; (d) frequently flooded areas; and (e) geologically hazardous areas. "Fish and wildlife habitat conservation areas" does not include such artificial features or constructs as irrigation delivery systems, irrigation infrastructure, irrigation canals, or drainage ditches that lie within the boundaries of and are maintained by a port district or an irrigation district or company.



## RCW 36.70A.030

- **Definitions.**
- (21) "**Wetland**" or "wetlands" means areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from non-wetland areas created to mitigate conversion of wetlands.



## WAC 365-190-090

- **Wetlands.**
- (2) In designating wetlands for regulatory purposes, **counties and cities must use the definition of wetlands in RCW 36.70A.030.** Counties and cities are requested and encouraged to make their actions consistent with the intent and goals of "protection of wetlands," Executive Orders 89-10 and 90-04 as they existed on September 1, 1990. Additionally, counties and cities should consider wetlands protection guidance provided by the department of ecology, including the management recommendations based on the best available science, mitigation guidance, and provisions addressing the option of using wetland mitigation banks.



### In Other Words:

Wetlands are areas that are wet enough for a long enough period of time that the soils become anaerobic (low oxygen), and only plants that can handle the wetness and lack of oxygen can grow there.

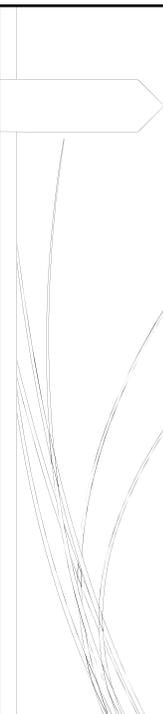
## RCW 36.70A.060

- ▶ **Natural resource lands and critical areas—Development regulations.**
- ▶ (2) Each county and city shall adopt development regulations that **protect critical areas** that are required to be designated under RCW 36.70A.170.



## RCW 36.70A.172

- **Critical areas—Designation and protection—Best available science to be used.**
- (1) In designating and protecting critical areas under this chapter, counties and cities shall include the **best available science** in developing policies and development regulations to protect the functions and values of critical areas



## No Net Loss

- **WAC 365-196-830 Protection of critical areas.**
- (4) Although counties and cities may protect critical areas in different ways or may allow some localized impacts to critical areas, or even the potential loss of some critical areas, development regulations must preserve the existing functions and values of critical areas. If development regulations allow harm to critical areas, they must require compensatory mitigation of the harm. Development regulations **may not allow a net loss of the functions and values** of the ecosystem that includes the impacted or lost critical areas.
- (8) Local government may develop and implement alternative means of protecting critical areas from some activities using best management practices or a combination of regulatory and nonregulatory programs. When developing alternative means of protection, counties and cities **must assure no net loss of functions and values** and must include the best available science.

## Wetlands: How to know one



## Delineation Manual

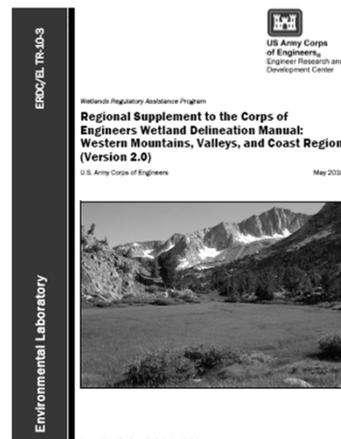
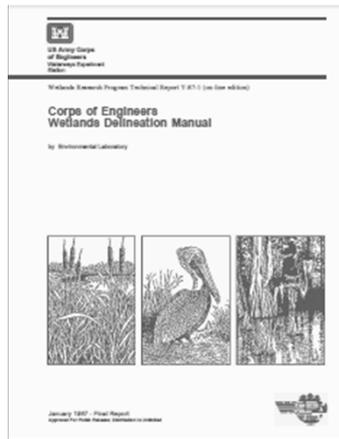
How to determine the boundary between a wetland and the surrounding upland

- WAC 365-190-090
- RCW 36.70A.175
- RCW 90.58.380 (Shoreline Management Act)

## Current Delineation Manual

WAC 173-22-035 (Ecology rule)

Identification of wetlands and delineation of their boundaries pursuant to this chapter shall be done in accordance with the **approved federal wetland delineation manual and applicable regional supplements.**



## Overview of Wetland Functions



Store water during flood events and recharge groundwater during low flows



Remove pollutants (sediments, nutrients, toxics)



Provide habitat for a large number of plants and animals



Wetlands exist in a landscape context

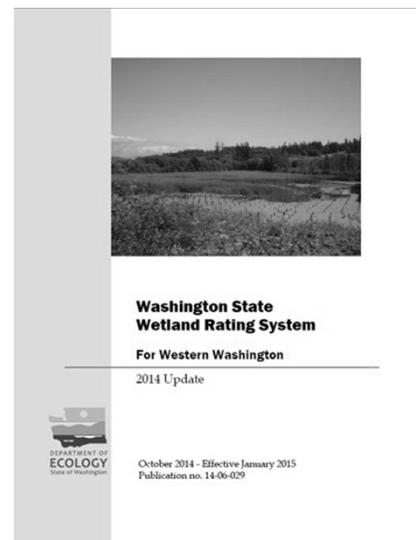
- Position in the watershed
- Connection to other surface waters
- Connection to other habitats

## Wetland values:

The importance humans place on them

- For some jurisdictions, flood storage may be really important
- For others, it's all about water quality improvement
- Some jurisdictions place high value on livability (green space, wildlife viewing)

How do we know what functions are present?



## WAC 365-190-090

- **Wetlands.**
- (3) Wetlands rating systems. Wetland functions vary widely.
- (a) When designating wetlands, counties and cities should use a rating system that evaluates the existing wetland functions and values to determine what functions must be protected.
- (b) In developing wetlands rating systems, counties and cities **should consider using the wetland rating system developed jointly by the department of ecology** and the United States Army Corps of Engineers.
- (c) If a county or city chooses to use an **alternative rating system, it must include the best available science.**

## So how are wetland functions impacted?

### Direct

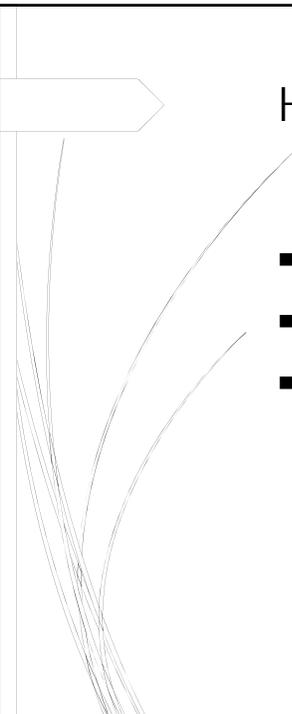
- Filling
- Draining
- Clearing



### Indirect

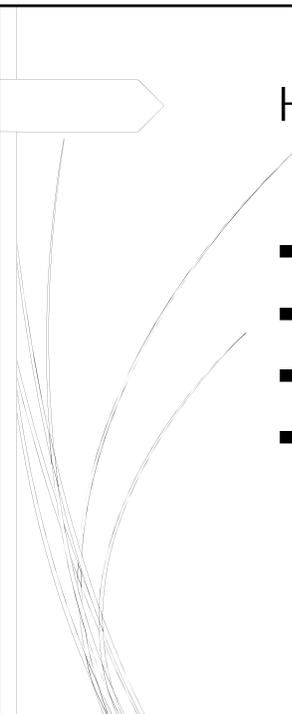
- Surface runoff
- Noise
- Light
- Intrusion
- Disconnecting from other habitats





## How do we protect these functions?

- ▶ Landowner incentives
- ▶ Public restoration
- ▶ **Regulation/permitting (why we're here today)**

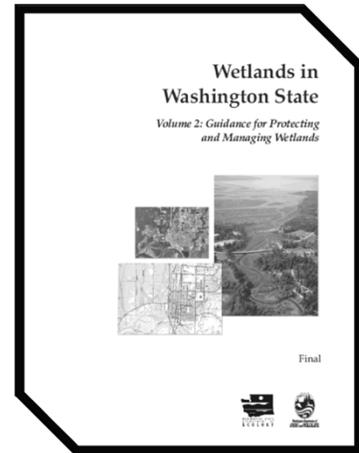
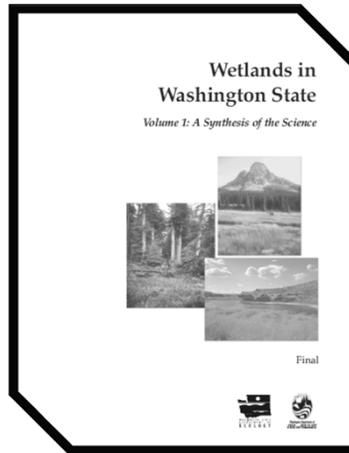
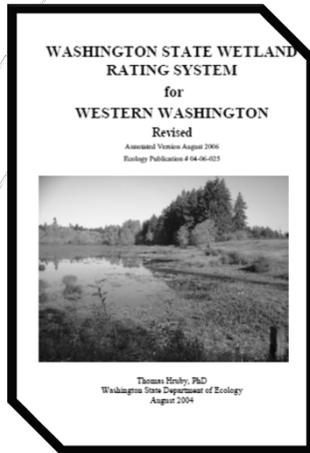


## How much protection is enough?

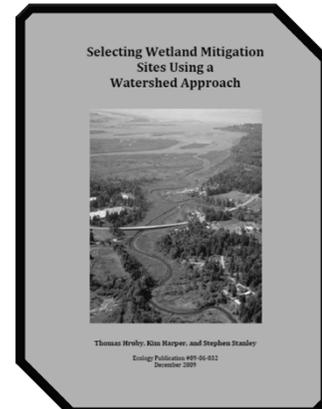
- ▶ There is no bright line
- ▶ Science provides a range
- ▶ How much risk is a jurisdiction willing to accept
- ▶ **The greater the reliance on site-specific regulations, the more stringent the regulations need to be to overcome the risk of wetland impacts.**

# A Brief History of Everything: 10+ years of Ecology's wetland guidance

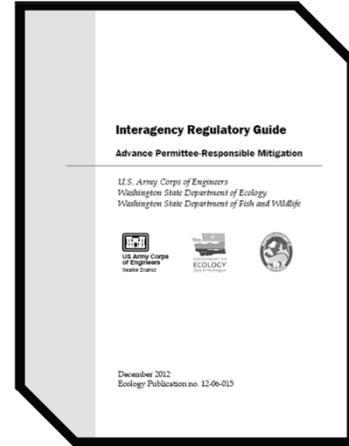
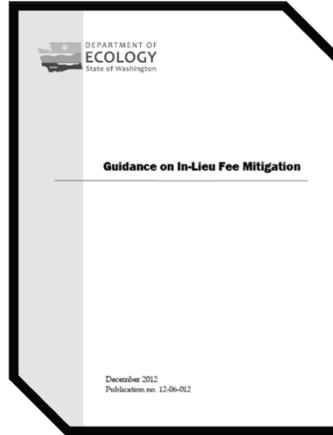
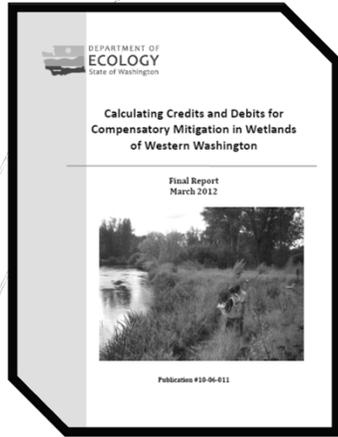
## BAS Documents



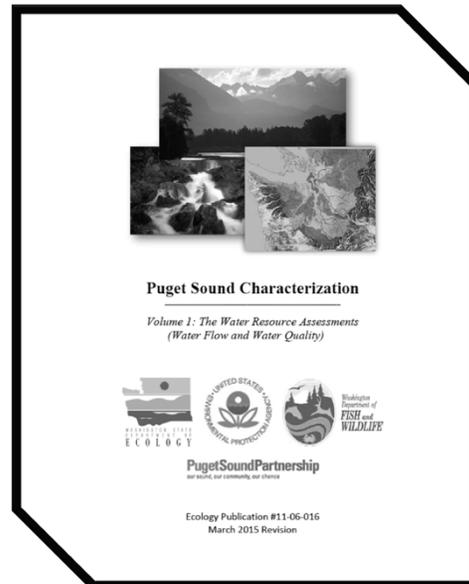
## Mitigation Guidance



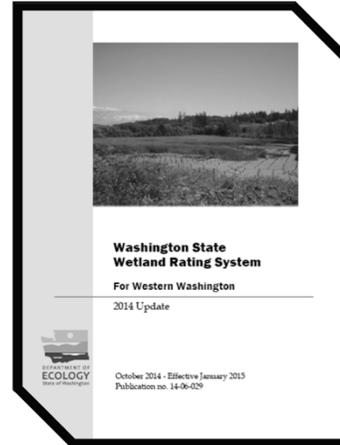
## More Mitigation Guidance



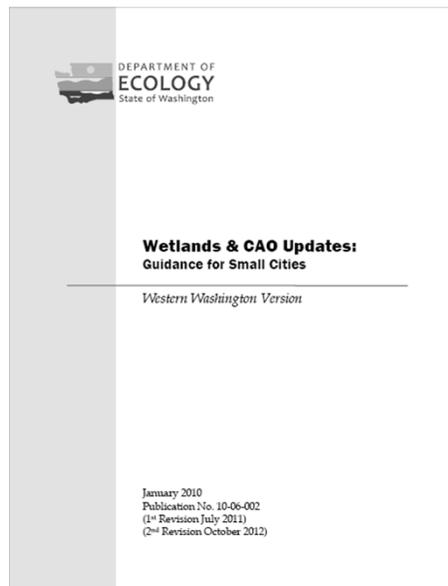
## Watershed Characterization



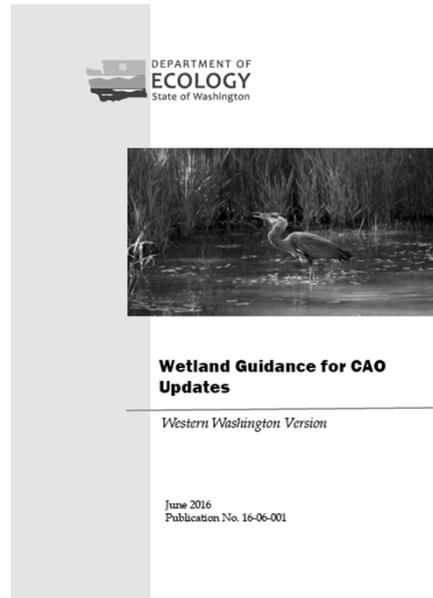
BAS Update



And finally,  
this...



has been  
replaced  
with this...



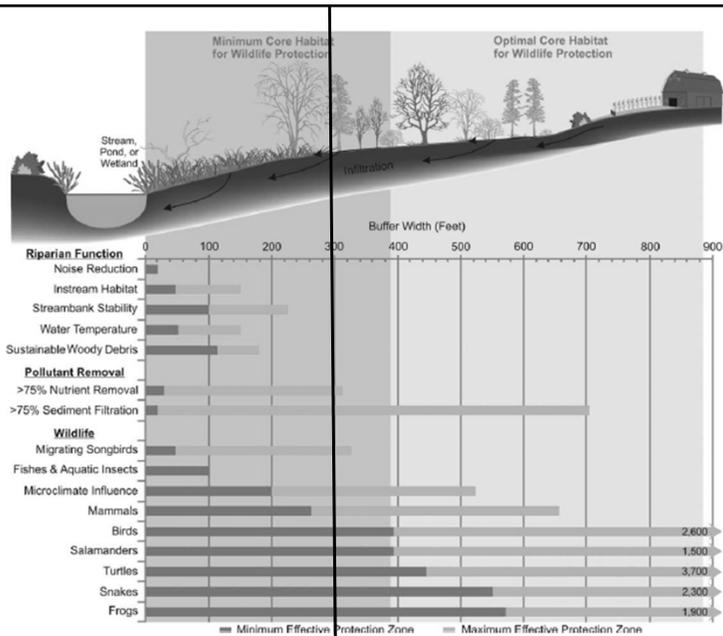
## Wetland Guidance for CAO Updates

- Some changes were necessary because the guidance is now intended for use by ALL jurisdictions, not just small cities
- Things to take note of:
  - Buffer tables
  - Mitigation language
  - Stormwater/LID language
  - Small wetland exemption language
  - Ag language

## 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
- Width depends on what function you're protecting
  - Water quality 10-50 feet
  - Wildlife habitat 100-1200 feet

## Buffers necessary to protect different functions



Courtesy of Southeastern Wisconsin Regional Planning Commission

## Ecology's buffer 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? Does it present a high risk that wetland functions will be degraded?

## Buffers need to be well-vegetated with a native plant community

This...



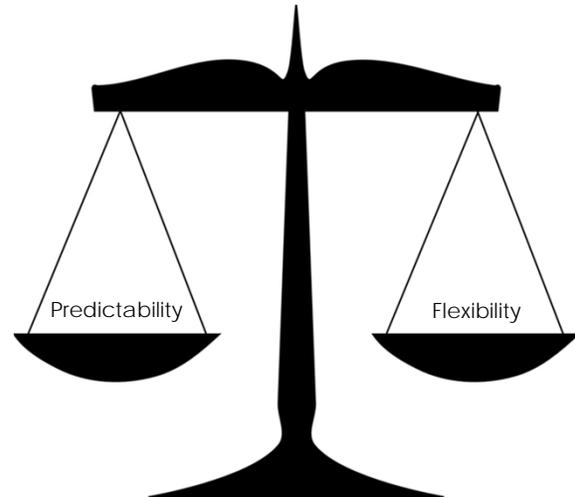
Not this



## Why the different buffer strategies?

Alternatives 1, 2 and 3 from Appendix 8-C

- 1: Category only
- 2: Category and adjacent land use
- 3: Category and adjacent land use and habitat score



## Land Use Intensity

Level of Impact from Proposed Change in Land Use	Types of Land Use Based on Common Zoning Designations *
High	<ul style="list-style-type: none"> <li>• Commercial</li> <li>• Urban</li> <li>• Industrial</li> <li>• Institutional</li> <li>• Retail sales</li> <li>• Residential (more than 1 unit/acre)</li> <li>• Conversion to high-intensity agriculture (dairies, nurseries, greenhouses, growing and harvesting crops requiring annual tilling and raising and maintaining animals, etc.)</li> <li>• High-intensity recreation (golf courses, ball fields, etc.)</li> <li>• Hobby farms</li> </ul>
Moderate	<ul style="list-style-type: none"> <li>• Residential (1 unit/acre or less)</li> <li>• Moderate-intensity open space (parks with biking, jogging, etc.)</li> <li>• Conversion to moderate-intensity agriculture (orchards, hay fields, etc.)</li> <li>• Paved trails</li> <li>• Building of logging roads</li> <li>• Utility corridor or right-of-way shared by several utilities and including access/maintenance road</li> </ul>
Low	<ul style="list-style-type: none"> <li>• Forestry (cutting of trees only)</li> <li>• Low-intensity open space (hiking, bird-watching, preservation of natural resources, etc.)</li> <li>• Unpaved trails</li> <li>• Utility corridor without a maintenance road and little or no vegetation management.</li> </ul>
* Local governments are encouraged to create land-use designations for zoning that are consistent with these examples.	

## Example: Wetland Buffer Options

- ▶ Category II
- ▶ Moderate habitat function (habitat score of 6)
- ▶ Adjacent land use is single-family residential

Alternative 1  
300 feet

Alternative 2  
225 feet

Alternative 3  
110 feet



## How can I reduce a buffer?

- ▶ Reduction  
Reduce the intensity of the impact (buffer doesn't have to "work" as hard)
- ▶ Averaging  
Increase the width of the buffer in one area and decrease it in another
  - To improve wetland function
  - To allow reasonable use

## Reducing Buffers

Alternative 3 buffers can be reduced by 25% if the applicant:

- Implements measures to minimize the impacts from adjacent land use
- AND, if the wetland scores 5 or more habitat points
  - Provides an undisturbed vegetated corridor at least 100 feet wide between the wetland and another priority habitat

## Table of measures to minimize the impacts from adjacent land use

(Appendix 8C and Table XX.2 in Wetland Guidance)

Disturbance	Required Measures to Minimize Impacts
Lights	<ul style="list-style-type: none"> <li>• Direct lights away from wetland</li> </ul>
Noise	<ul style="list-style-type: none"> <li>• Locate activity that generates noise away from wetland</li> <li>• If warranted, enhance existing buffer with native vegetation plantings adjacent to noise source</li> <li>• For activities that generate relatively continuous, potentially disruptive noise, such as certain heavy industry or mining, establish an additional 10' heavily vegetated buffer strip immediately adjacent to the outer wetland buffer</li> </ul>
Toxic runoff	<ul style="list-style-type: none"> <li>• Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered</li> <li>• Establish covenants limiting use of pesticides within 150 ft of wetland</li> <li>• Apply integrated pest management</li> </ul>
Stormwater runoff	<ul style="list-style-type: none"> <li>• Retrofit stormwater detention and treatment for roads and existing adjacent development</li> <li>• Prevent channelized flow from lawns that directly enters the buffer</li> <li>• Use Low Intensity Development techniques (for more information refer to the drainage ordinance and manual)</li> </ul>
Change in water regime	<ul style="list-style-type: none"> <li>• Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns</li> </ul>
Pets and human disturbance	<ul style="list-style-type: none"> <li>• Use privacy fencing OR plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion</li> <li>• Place wetland and its buffer in a separate tract or protect with a conservation easement</li> </ul>
Dust	<ul style="list-style-type: none"> <li>• Use best management practices to control dust</li> </ul>



## Buffer Tables in Wetland Guidance Update

- Use updated rating scores and category descriptions from 2014 rating system update
- Re-emphasize the importance of a corridor in protecting habitat function when the wetland scores 5 or more habitat points



## Buffers in Wetland Guidance Update

- Table XX.1 has a built-in 25% reduction because both the corridor and Table XX.2 (minimizing measures) are required. Assumes land-use intensity is high.
- Table XX.3 shows the “full-strength” buffers to be used if the minimizing measures aren’t used OR if a corridor is available but not protected
- You can still use Alternatives 1, 2 or 3 from Volume 2 Appendix 8-C

Table XX.1 (built-in reduction)

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			

Table XX.3 (full-strength)

Wetland Category	Buffer width (in feet) based on habitat score			
	3-4	5	6-7	8-9
Category I: Based on total score	100	140	220	300
Category I: Bogs and Wetlands of High Conservation Value	250			300
Category I: Coastal Lagoons	200		220	300
Category I: Interdunal				300
Category I: Forested	100	140	220	300
Category I: Estuarine	200 (buffer width not based on habitat scores)			
Category II: Based on score	100	140	220	300
Category II: Interdunal Wetlands	150		220	300
Category II: Estuarine	150 (buffer width not based on habitat scores)			
Category III (all)	80	140	220	300
Category IV (all)	50			

## Mitigation



## Mitigation Sequencing

RCW 43-21C Washington State Environmental Policy Act (SEPA) and  
Section 404 of the federal Clean Water Act (CWA)

- Avoiding
- Minimizing
- Rectifying
- Reducing
- Compensating
- Monitoring



## Wetland Guidance Update

- Reorganizes text for clarity and consistency with state and federal guidance
- References new mitigation guidance documents
- Includes recommended language for mitigation banks and in-lieu fee programs
- Mitigation ratio table hasn't changed



## Wetland Guidance Update

### Stormwater/LID Language for Wetlands

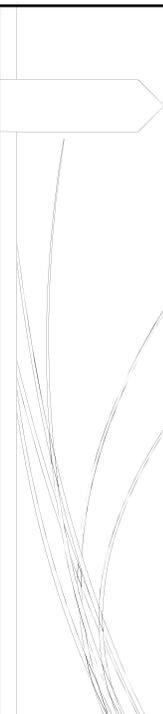
- Municipal stormwater permits require local governments to make LID the preferred and commonly used approach
- New recommended language to connect the dots between the stormwater manual and the CAO
- Criteria for allowing a wetland or buffer to be physically or hydrologically altered to meet LID requirements



## Wetland Guidance Update

Small wetland exemption language

- Exempts certain Category IV wetlands from avoidance but **NOT** from the need to mitigate for impacts (e.g., banks or ILF program)
- Exempts wetlands less than 1,000 square feet in area from buffer requirements **if** they meet these same criteria
- No longer recommended for Eastern Washington



## Wetland Guidance Update

Voluntary Stewardship Program (VSP) and Ag Lands

- If you are **NOT** in a participating watershed, you must review and revise your CAO wetlands chapter as it applies to agricultural activities.



## Wetland Guidance Update

Voluntary Stewardship Program (VSP) and Ag Lands

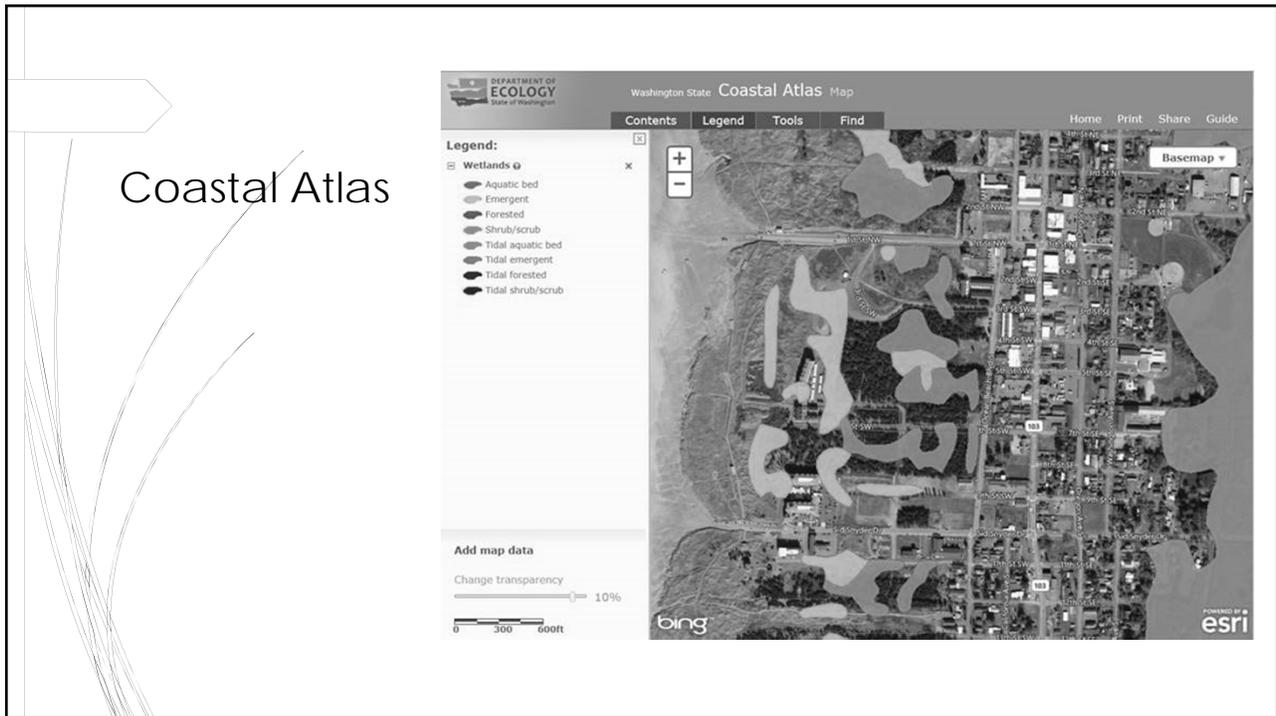
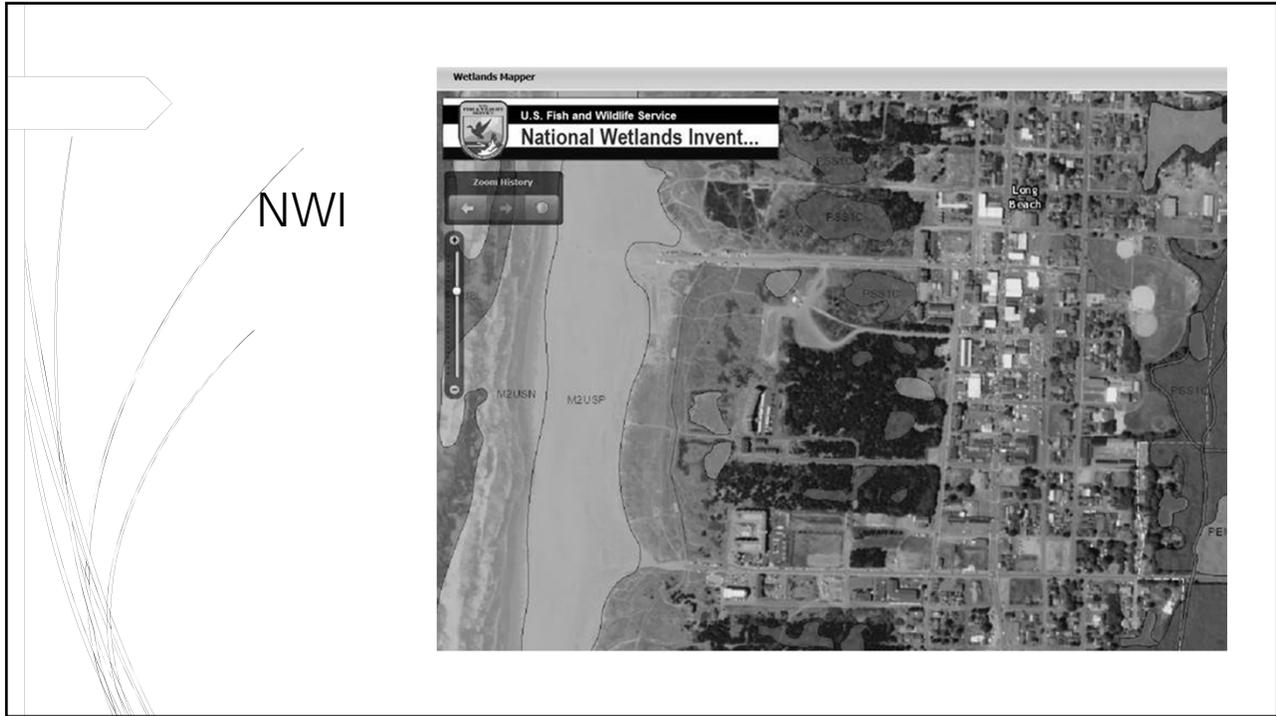
- Ecology recommends the use of BMPs in non-VSP watersheds
- Federal and state regulations (Clean Water Act, State Water Pollution Control Act) are still applicable in all jurisdictions regardless of participation or non-participation in a VSP

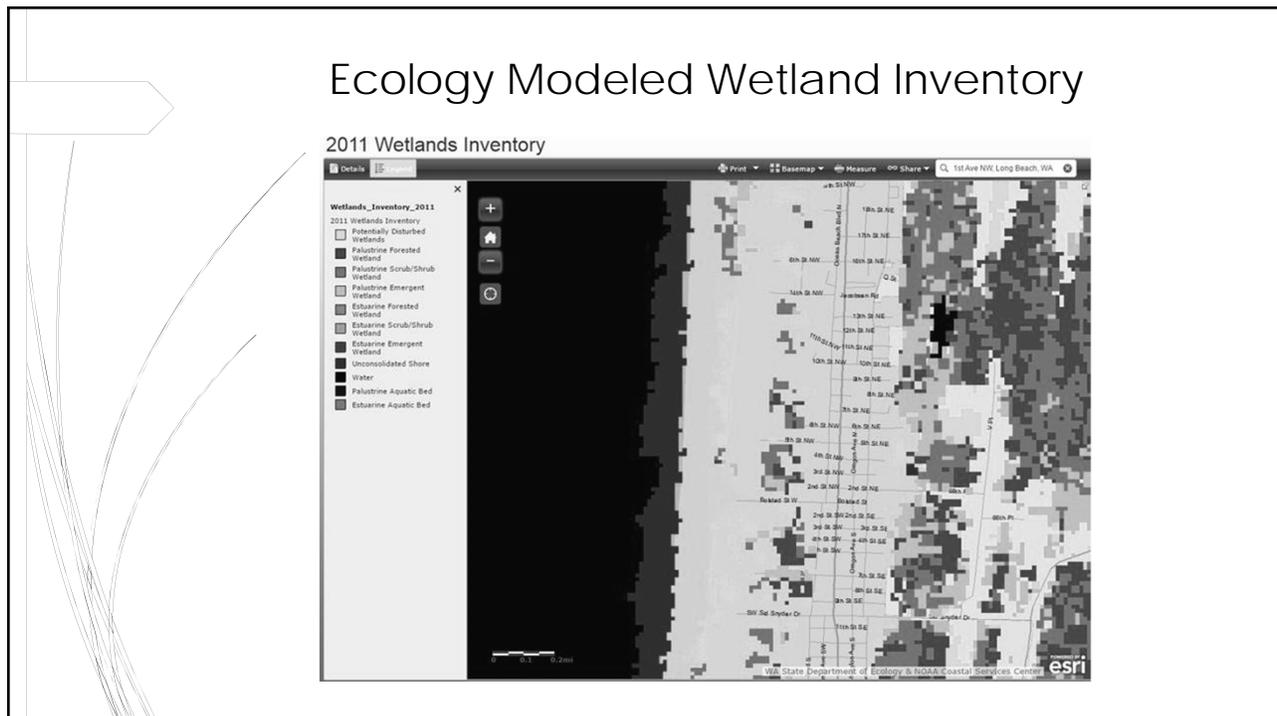
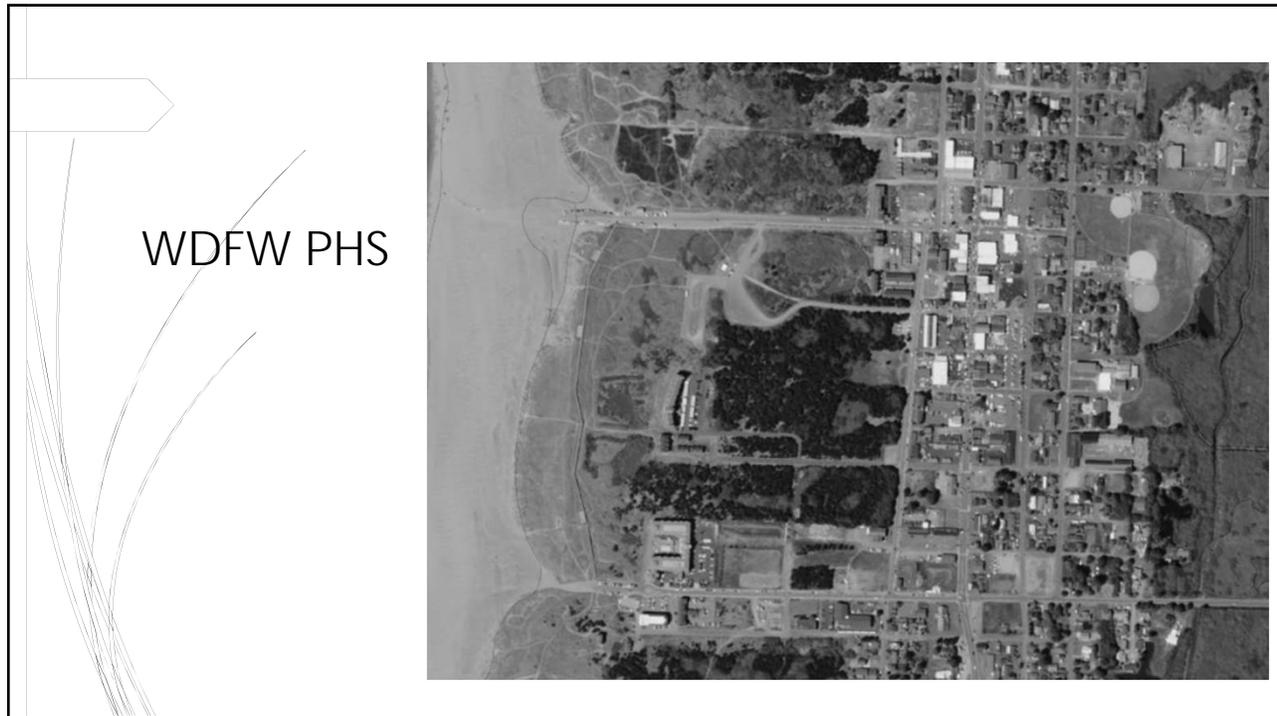


## Wetland Mapping Tools

WAC 365-190-090

- **Wetlands.**
- ( 4) Counties and cities may use the National Wetlands Inventory and a landscape-scale watershed characterization as information sources for determining the approximate distribution and extent of wetlands... Any potential locations of wetlands based on the National Wetlands Inventory or landscape-scale watershed characterization **should be confirmed by field visits...**

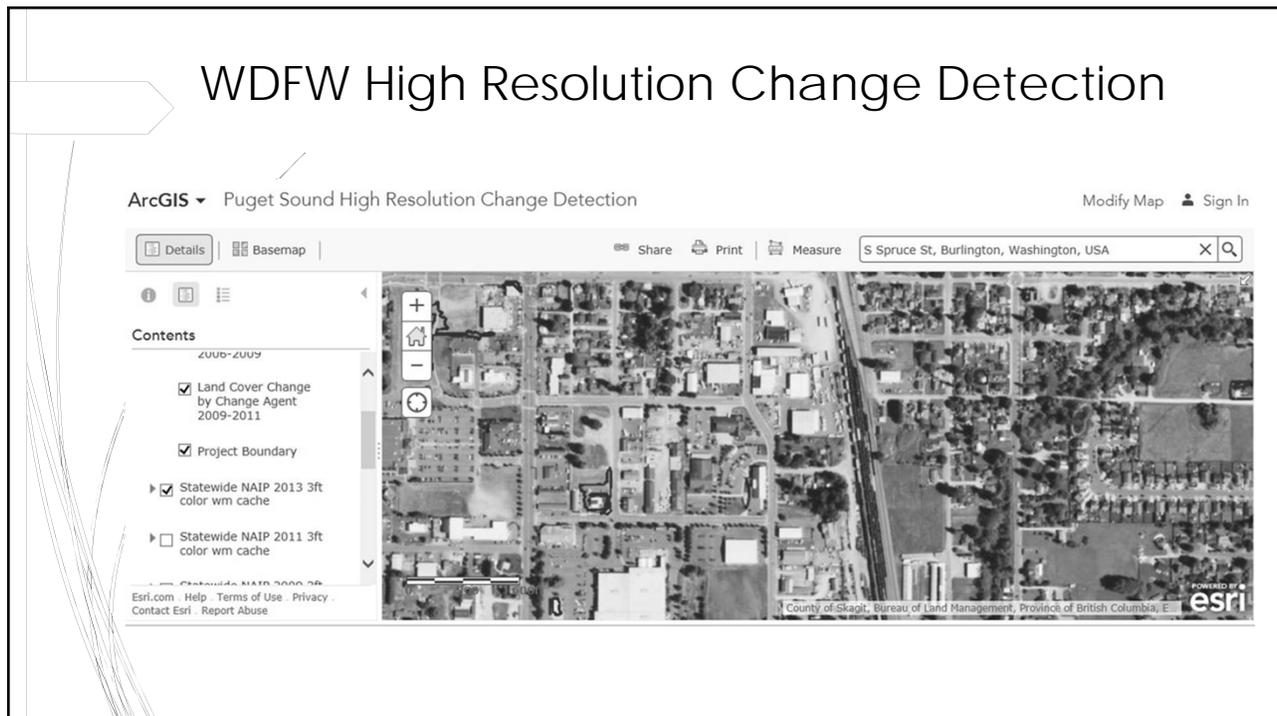




# WDFW High Resolution Change Detection



# WDFW High Resolution Change Detection





## County Mapping Resources

- Some local governments are updating their GIS maps with ground-truthed data associated with project applications
- This data is potentially more current and accurate because it is ground-truthed.
- Contact Ecology (Amy Yahnke, 360-407-6527, [amy.yahnke@ecy.wa.gov](mailto:amy.yahnke@ecy.wa.gov)) if you are involved in this work



## How Ecology Can Help

- Web site, tools, publications
- Wetlands listserv
- CTP Trainings, on-demand tutorials, webinars
- Review proposed drafts
- Provide recommended language, comments, explanations
- Depending on workload, attend public meetings and participate in technical advisory groups

## Ecology Regional Wetland Specialists

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**DEPARTMENT OF  
ECOLOGY**  
State of Washington

Call me:

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- ▶ Tuesday, Wednesday, Thursday



Thank you!

