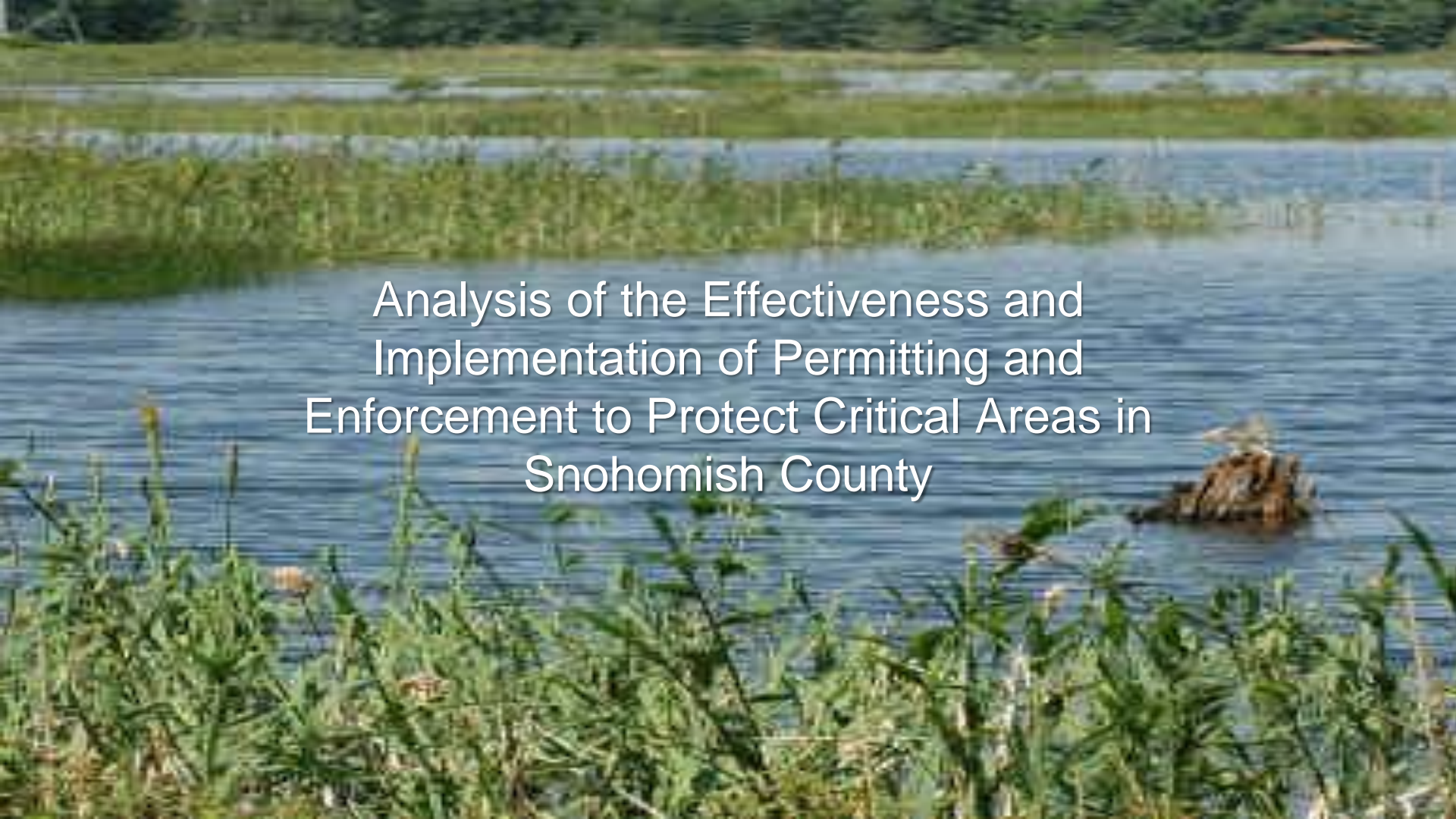


Case Study: Snohomish County

Randy Middaugh, Snohomish County

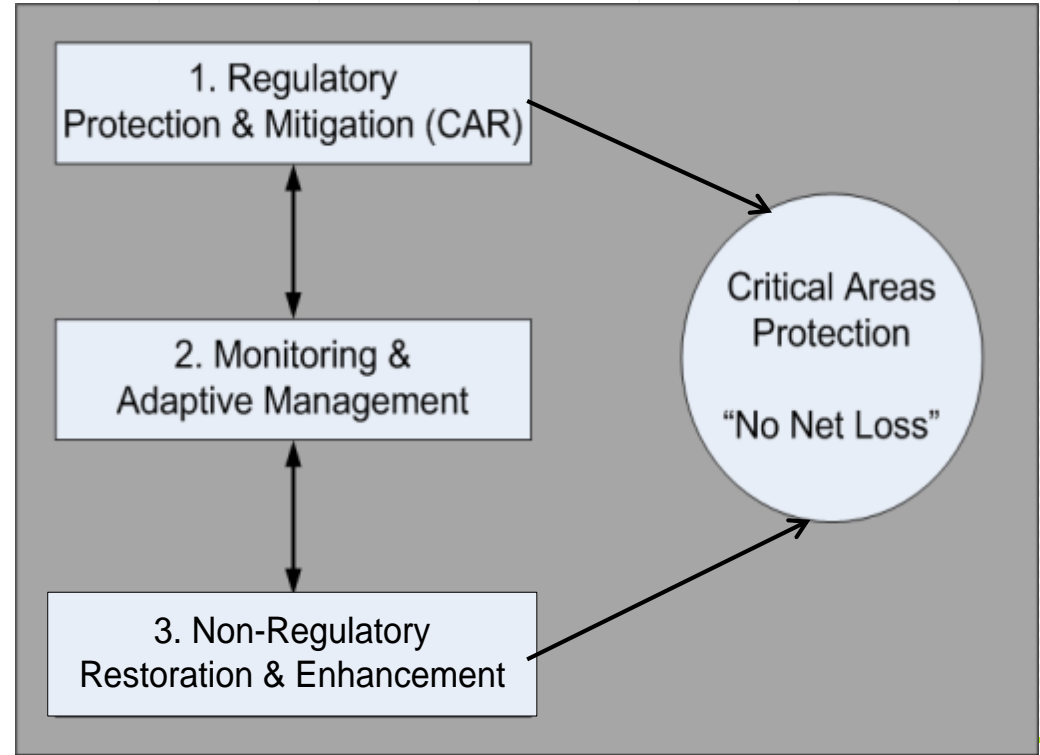
4

A photograph of a wetland area. In the foreground, there are green reeds and plants. In the middle ground, there is a body of water with a log floating on it. In the background, there is a line of trees and a grassy area.

Analysis of the Effectiveness and Implementation of Permitting and Enforcement to Protect Critical Areas in Snohomish County

Why Monitor and Adaptively Manage?

- ◉ GMA - *no net loss of functions & values*
- ◉ SMA – *no net loss of ecological functions*
- ◉ Our 2007 regulations on single family residences and ag created uncertainty about providing NNL so we implemented monitoring and adaptive management



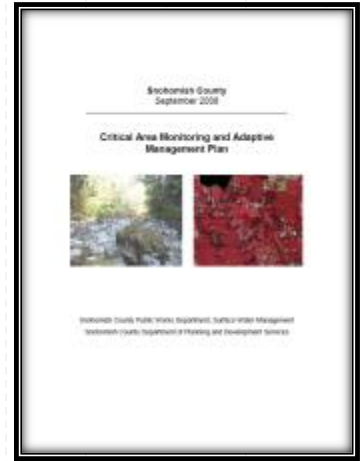
Monitoring and Adaptive Management Plan (2008)

- Objectives with benchmarks
- Triggers for Adaptive Management
- Tasks/Assignments
- Schedule
- Deliverables



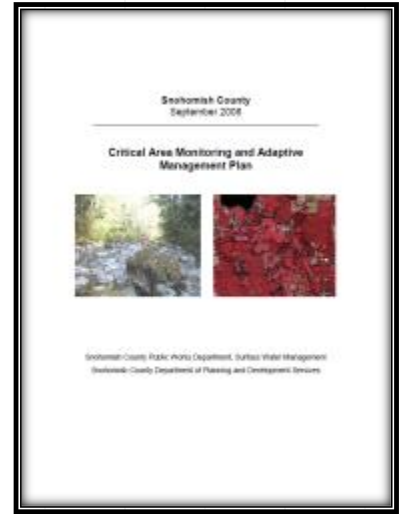
Key Questions

1. Are gains or losses of functions and values occurring in Fish and Wildlife Habitat Conservation Areas, Wetlands and their buffers?
2. If loss is occurring, what adaptive management adjustments are needed to protect functions and values in FWHCAs, wetlands and their buffers?
 - a) Code changes?
 - b) Permit review process changes?
 - c) Enforcement improvements?
 - d) Increased education?
 - e) Increased capital restoration projects?



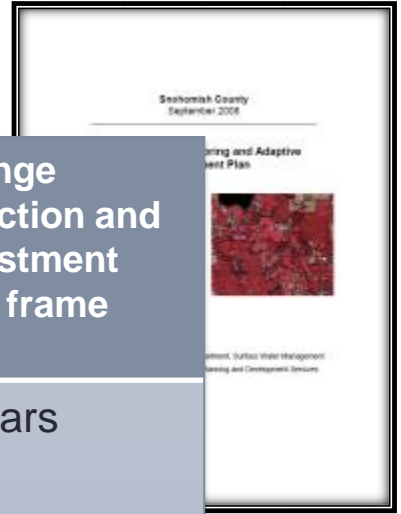
Guiding Principles

1. Monitoring program to be developed, implemented using peer-reviewed BAS
2. Focus on functions of FWHCAs, wetlands and their buffers
3. Test hypothesis with indicators
4. Random sampling to be used
5. Over-select field sites
6. Adaptively manage the monitoring program



Adaptive Management Triggers

Indicator	Threshold 1 (Increase outreach, enforcement, mitigation)	Threshold 2 (Add programmatic adjustments)	Threshold 3 (Add code revisions)	Change detection and adjustment time frame
Wetland area	<5% change* in 1 watershed	5-10% change* in 2+ watersheds	>10% change* countywide	4 years
Riparian forest quantity/ quality index	<3% change* in 1 watershed	3-5% change* in 2+ watersheds	>5% change* countywide	2 years
*Change is measured relative to baseline				



Monitoring Objectives

- Implementation & Compliance Monitoring Nov 1, 2007 through April 1, 2013
- Analyze effectiveness and implementation of permits and enforcement in protecting critical areas and their buffers by:
 - analyzing landcover change impacts
 - summarizing & evaluating critical reviews in the County's permits tracking system
 - providing recommendations for improving critical area protection in permitting & enforcement



**Critical Areas
Site Plans**



Enforcement



**Other unpermitted
clearing & grading**



**Class IVG Forest
Practices**

Analytical tools – land cover change



Included Areas:

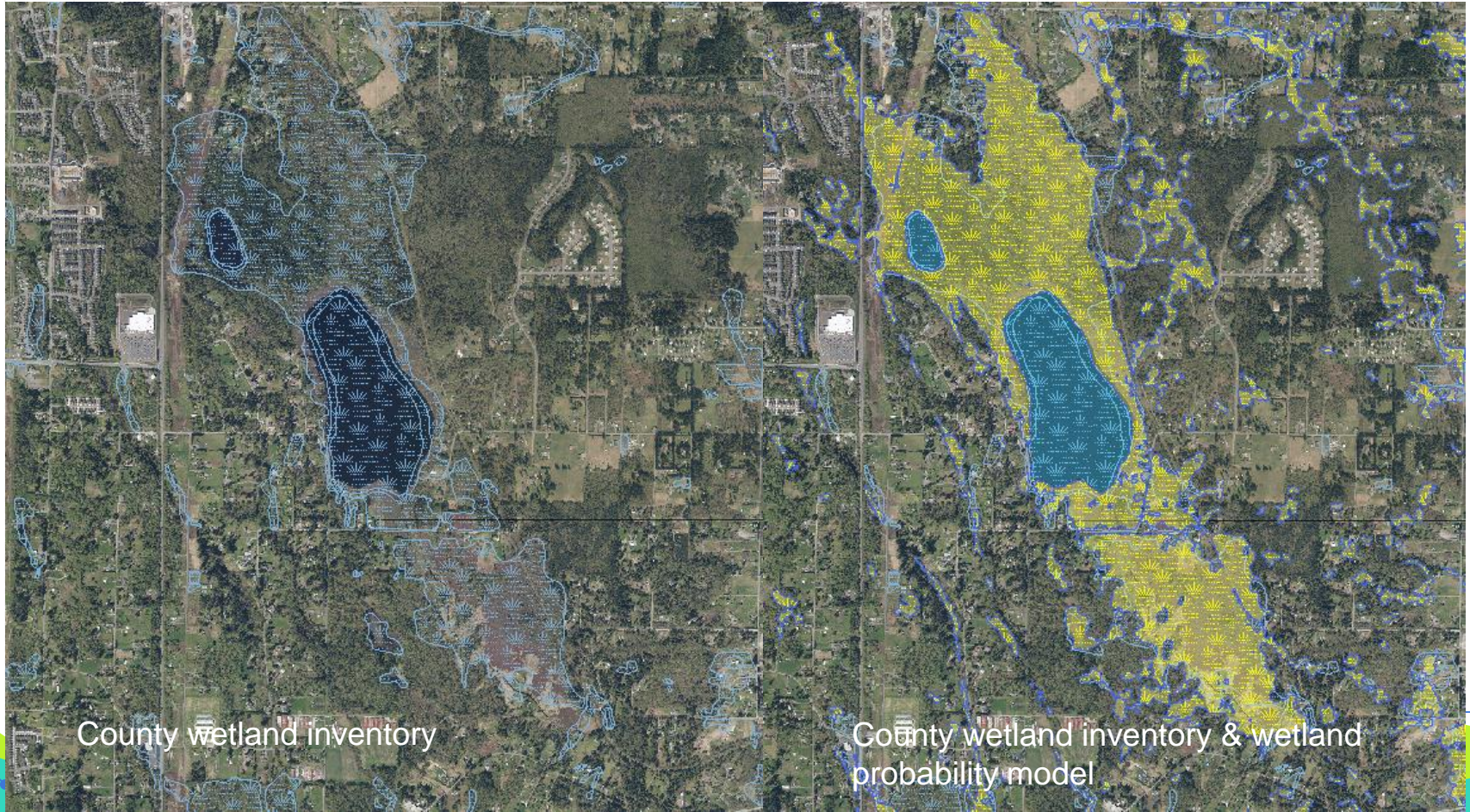
1. Stream rating of S & F buffered by 150 feet
2. Stream rating of Np, Ns, & U buffered by 50 feet
3. All wetlands buffered by 25ft

Land cover class

- This index map displays location of detail frames within the project area by corresponding frame color



Analytical tools – wetland identification

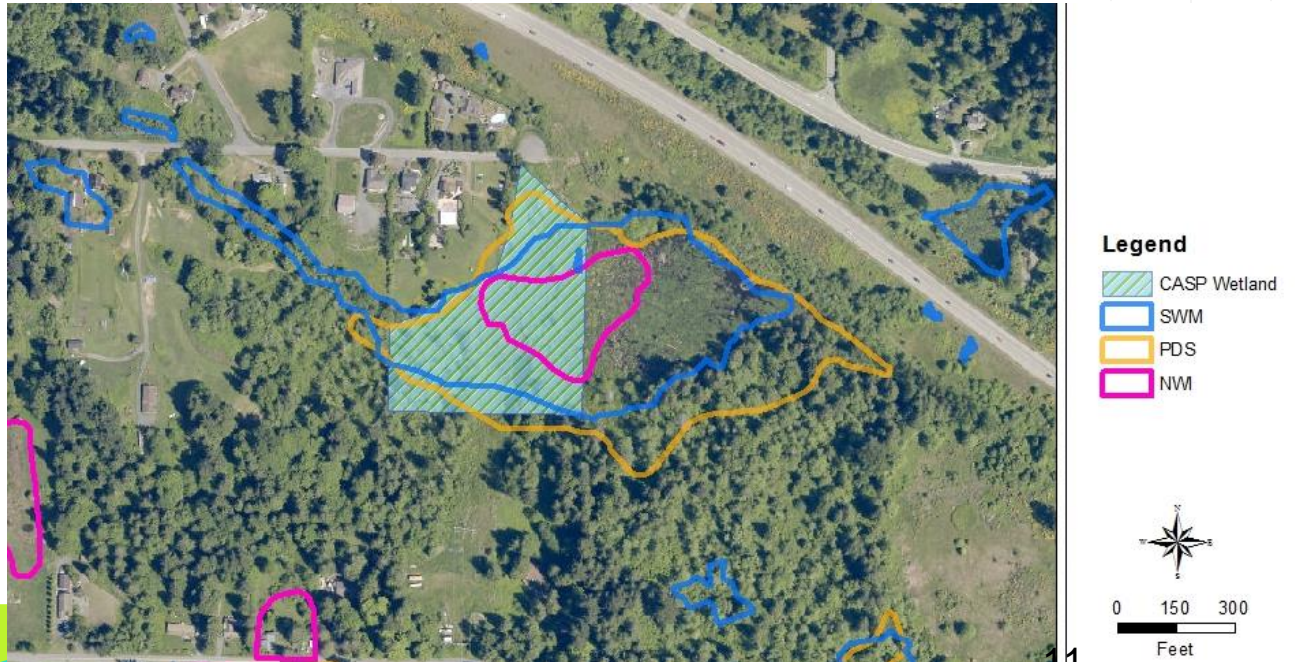


County wetland inventory

County wetland inventory & wetland probability model

Analytical tools – wetland identification and source comparison

Used a combination of known wetland locations and wetland predictive model locations to evaluate wetland and buffer impacts



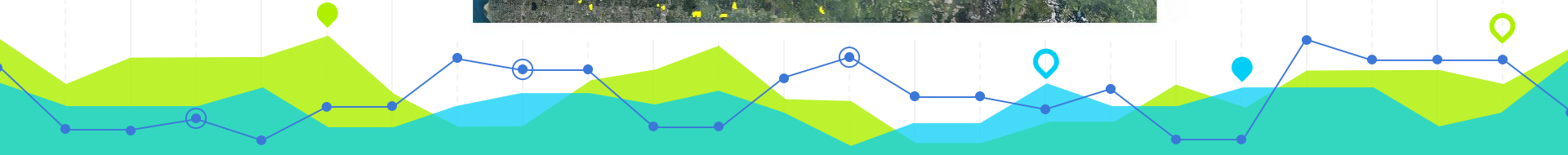
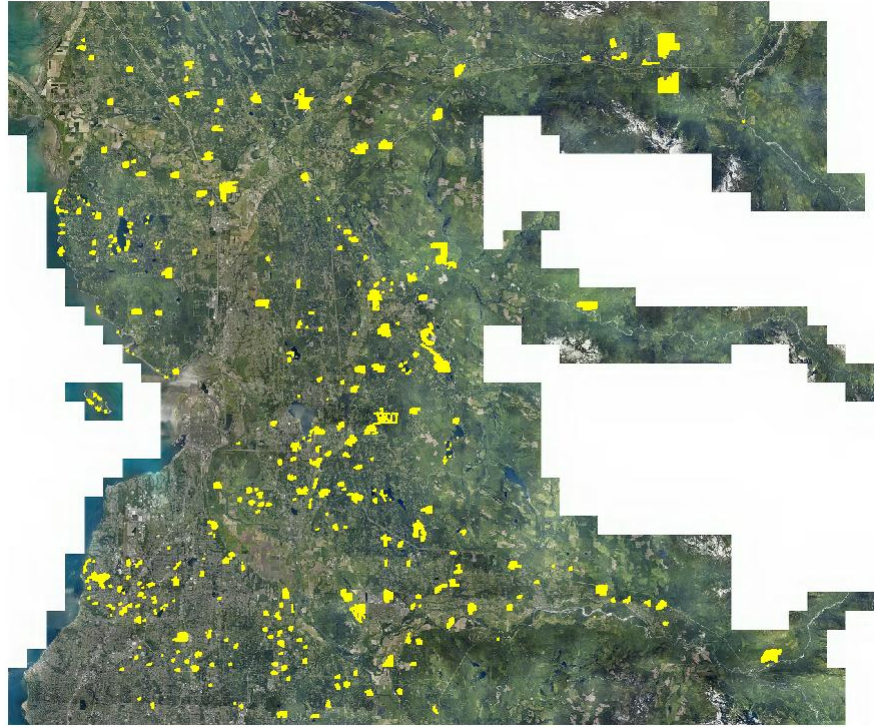
	# CASPs	SWM	PDS	NWI	SWM+PDS	All
Wetland Hit	84	50	37	33	62	65
% Hit		60%	44%	39%	74%	77%



% of time that
SWM & PDS
wetlands
coincided with
known CASP
wetlands

% of time
that all 3
sources
coincided
with known
CASP
wetlands

986 Critical Areas Site Plans (CASPs) were recorded between November 2007 and April 2013 – 335 randomly selected



Undeveloped property

2007

APPLICANT: Barry & Valerie Cochran
 PROJECT #: 07-110385-RK
 TAX ACCT#: 300020-003-007-00

SITE PLAN:

2 OF 2

CASP Overlay

WETLAND B CATEGORY 2

WETLAND A CATEGORY 1

CULVERT (APPROX.)

WELL

PENSTOCK

15' x 8' S&L

APPROX. LOCATION OF EXIST. ROAD

LEGEND

WETLAND

NGA

Scale 1" = 60'

0 30 60 90 120

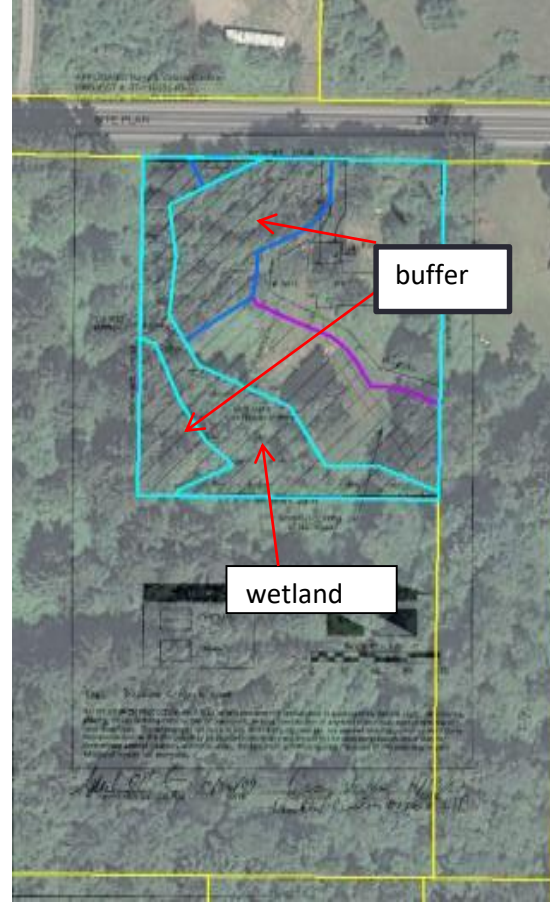
§56L = Building Setback Line

NATIVE GROWTH PROTECTION AREA is to be left permanently undisturbed in a substantially natural state. No clearing, grading, filling, building construction or placement, or road construction of any kind shall occur, except removal of hazardous trees. The activities set forth in §§C 30.919 (1), (3), and (4), are allowed when approved by the County. Representations on this site plan may be approximations only and should not be used for purposes other than for determining general locations of critical areas. Development activities beyond the scope of this plan may require additional studies and approvals.

APPROVED SNO CO PDS 10/26/09 DATE 11/13/07
 APPLICANT Janelle Cochran
 SIGNED Janelle Cochran H+P

CASP Analysis

- ✓ Digitize critical areas and buffers
- ✓ Identify, classify and digitize land cover changes



2007



2009

	Est. total area (Ac) Permits w/CASPs	Est. area (Ac) permits w/out CASPs	Est. total area (Ac) Forest practices permits	Est. total area (Ac) Enforcem ent cases	Est. total area (Ac) / % of total
wetlands	1.14	2.92	13.42	38.46	55.94/50.59
critical area/buffer combo	0.17	0	0	27.31	27.48/24.85
GHAs	5.29	0	0	0	5.29/4.78
Buffers ^a	8.98		0.18	10.84	21.81/19.72
lakes/ponds	0.03	0	0	0	0.03/0.03
streams/rivers	0	0	0	0	0
marine shorelines	0.03	0	0	0	0.03/0.03
Totals	15.65	3.11	13.60	76.63	109.06

Part II

Impact Summary

Less than 1%
of total critical
and buffers
identified on
properties with
permits and
enforcement
cases

Permit processing and tracking

Attempt	Checklist (29)	Memo	Deficiency	Attachment	Dependency	Info (15)	Consent	Insp. Detail
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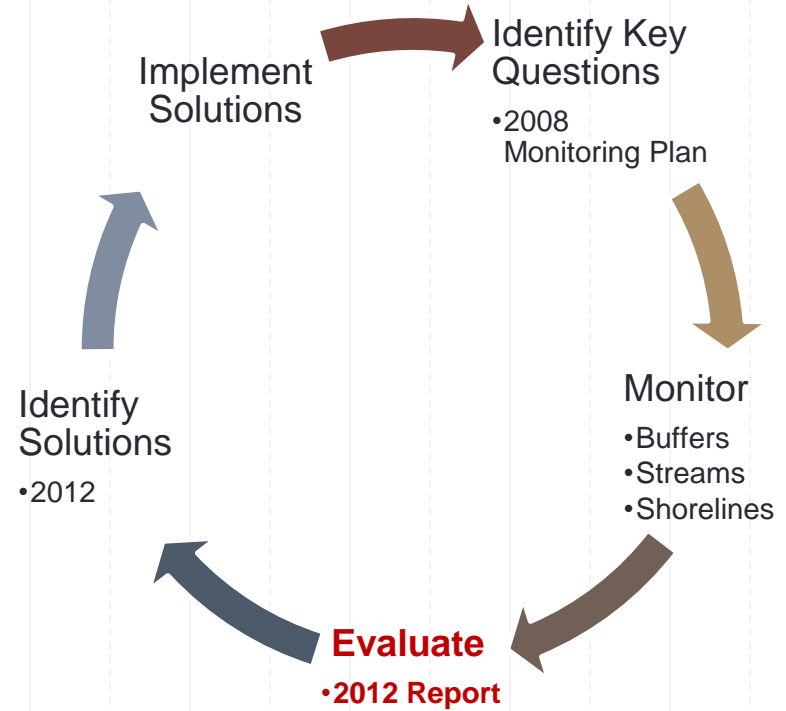
Description	Value	Type	Display Order
A. Buffer Alterations			
Permanent Buffer Impacts		P	
Buffer Alterations		C	10
Fencing		C	20
Separate Tracts		C	30
Enhancement		C	40
SFR Exception		C	50

Attempt	Checklist (29)	Memo	Deficiency	Attachment	Dependency	Info (15)	Consent	Insp. Detail
---------	----------------	------	------------	------------	------------	-----------	---------	--------------

Description	Value	Type	Display Order
B. Wetland Alterations Allowed			
Wetland Alteration		C	110
Total Net Area of Wetland Change - <		N	120
C. Farm Conservation Plan			
Farm Conservation Plan		C	130
FCP Auditors File Number		N	140

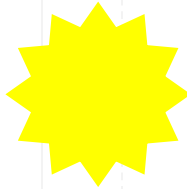
Part II - Key findings

- ✓ 108 acres of estimated impacts (<1% of total)
- ✓ 70% occurred on properties with enforcement cases
- ✓ 51% of the total occurred in wetlands
- ✓ 41% of properties without CASPs had critical areas on or close enough to warrant further review
- ✓ The land cover changes adaptive management thresholds were not exceeded
- ✓ > 70% of CASP had problems with accuracy
- ✓ No code changes warranted



Part II - Recommendations

- Improve CASP accuracy
- Digitize and incorporate CASPs into GIS review of future permits
- Staff training (applicability, CA identification)
- Improve CA tracking in AMANDA
- Monitoring report every 8 years to align with GMA



**Identify
Solutions**
• 2012

Implement
Solutions

Identify Key
Questions
• 2008
Monitoring
Plan

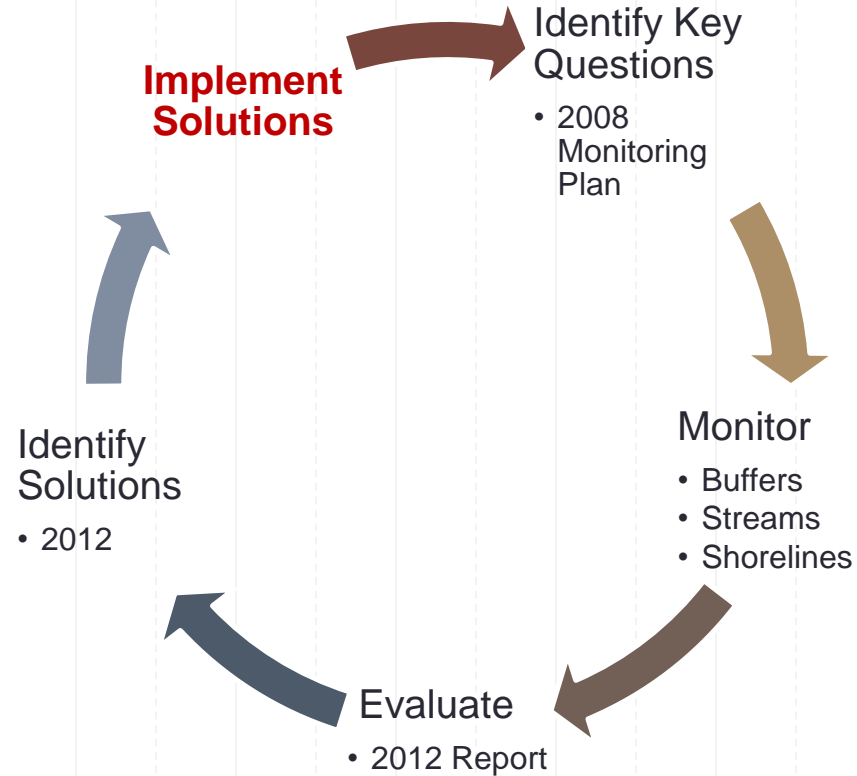
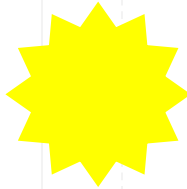
Monitor
• Buffers
• Streams
• Shorelines

Evaluate
• 2012 Report



Part II - Recommendations

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- Monitoring report every 8 years to align with GMA




Map Information

Welcome to the PDS Map Portal

The PDS Map Portal provides quick access to a wealth of planning-related information and data for unincorporated Snohomish County. The PDS Map Portal also offers a variety of built in tools for further exploration of data layers, as well as tools for searching, querying, creating, and editing features and annotation.



[Click Here to open the PDS Map Portal Instructions](#)

To view all available GIS data, click on the  **Layers** tab (located at the bottom of this panel)

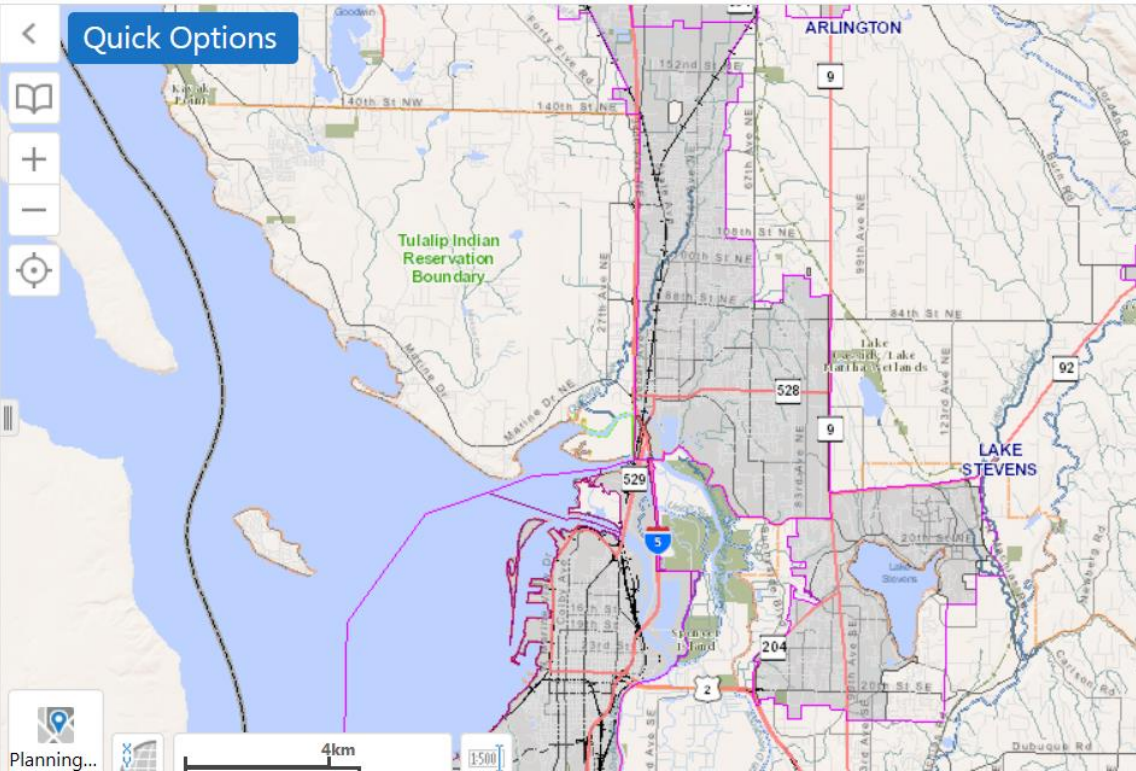
Once on the Layers tab, click on



Map Information



Layers



Quick Options

Parcel: 30062000300700

[Run Property Report](#)

Jurisdiction: Snohomish County

Zoning: Rural-5 Acre

Assessor's Tax Information: [Property Account Summary](#)

Planning and Development: [Permit Information](#)



[View Additional Details](#)

[Add to Results](#)

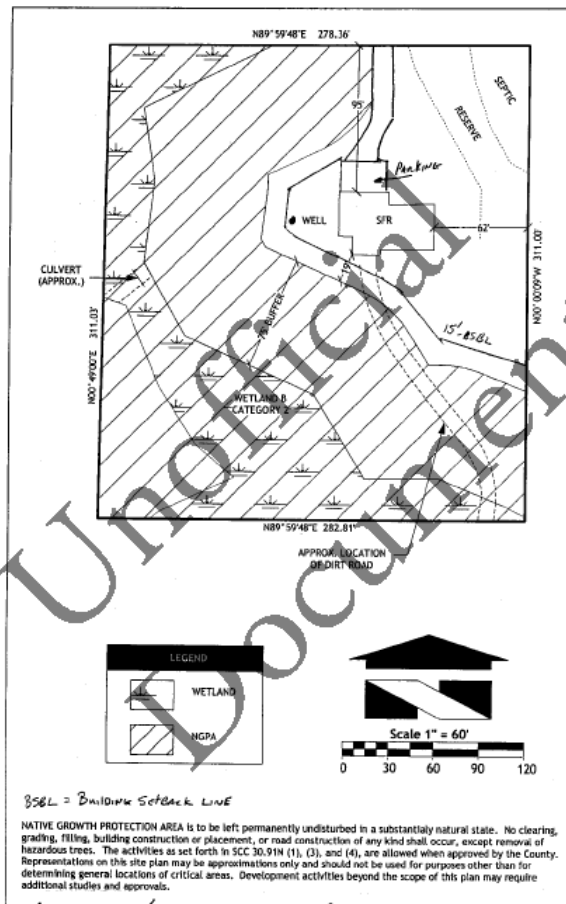
11927

12106

12116

11832

60m



APPROVED SNO CO PDS DATE 10/26/07

APPLICANT DATE 11/13/07

Senkley Custom Homes U.P.

- ✓ More than 8,800 CASPs have been recorded between 1995 and 2018
- ✓ Several thousand more plats with critical areas have been recorded in the same time period

Next steps

- Continue monitoring
- Next report will be completed 1 year prior to GMA update deadline in 2023