Forest Practices Compliance Monitoring 2018-2019 Biennial Report Results

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*WAC 222-08-160(4): Are Forest Practices being conducted in compliance with the rules?

- **Goal: Quantify compliance rates of Forest Practices rules**
  - **Current focus on RMZS, WMZs, and Roads**

- **FPA/N selected at random for field review to evaluate various sets of rule "prescriptions"**

- **18-19 Report involved field teams consisting of Forest Practices staff, WDFW staff, Ecology staff and tribal biologists**

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Prescriptions
(Chapter 4.1, pg. 13)

- **Forest Practices Applications contain sets of rule implementations, also known as prescriptions**

- **Prescriptions are derived by grouping rules that govern specific forest practices activities**

- **Compliance rates calculated by dividing total compliant rules by total rules evaluated for each prescription**

- **Ex: 48 compliant rules / 50 evaluated rules = 96% compliance rate**

Standard Sample Prescriptions

- **Desired Future Condition Option 1**
- **Desired Future Condition Option 2**
- **No Inner Zone Harvest**
- **Non-fish bearing Perennial streams**
- **Non-fish bearing Seasonal streams**
- **Type A & B Wetlands**
- **Forested Wetlands**
- **Roads**
- **Haul Routes**

Example of Rules that Comprise DFC1 Prescription

- **Small/large stream**
- **Proper dominant species**
- **Shade documentation**
- **Core zone**
- **Inner zone harvest parameters**
- **57 Trees/acre inner zone**
- **20 Trees/acre outer zone**
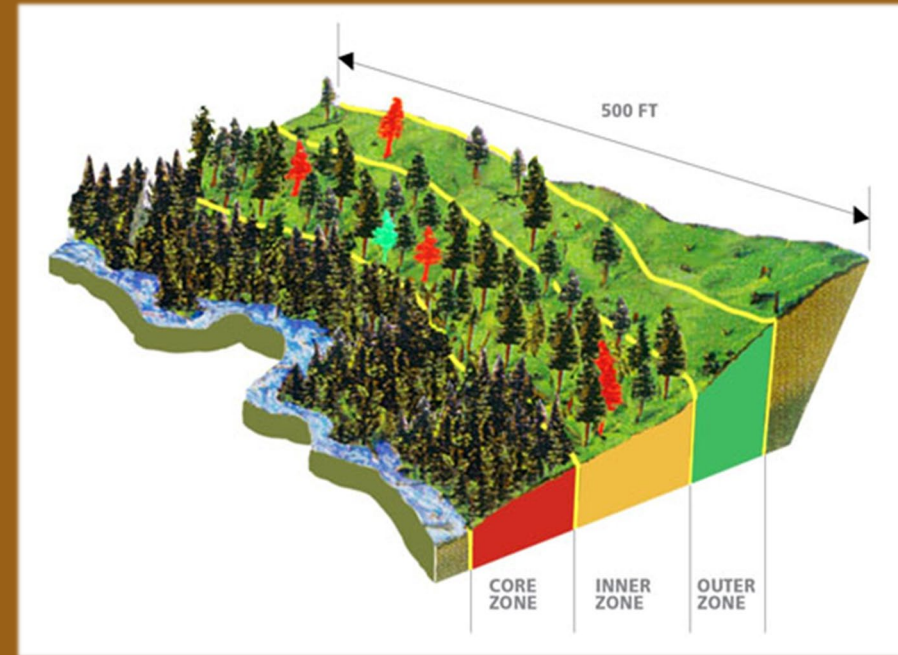
2018-2019 Statewide Sample Overview

- **Standard Sample**
  - **164 FPA/N**
  - **196 prescriptions evaluated**

- **2019 Unstable Slopes Pilot Study**
  - **36 FPA/N evaluated**

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Prescription Sample and Population Sizes
(Chapter 4.1, pg.14)

Geographic Region	Prescription Type	Sample Count	Estimated Population Size of FPA/N by Prescription
Statewide	Road Construction and Abandonment	14	3048
	Haul Routes	22	n/a*
	Type Ns	31	2319
	Type Np	38	2040
	Type A&B Wetlands	40	402
	Forested Wetlands	19	657
	Type S or F No Inner Zone Harvest	24	1896
Western WA - Only	Type S or F Inner Zone Harvest DFC1	18	86
	Type S or F Inner Zone Harvest DFC2	12	284
Periodic Sample	Unstable Slopes	36	819

*The Haul Routes prescription does not have an estimated population.

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Water Typing

(Chapter 5.1, pg. 29)

Water Type on FPA	# Waters in Standard Sample	# Waters with Typing Disparity	# Waters Underclassified	# Waters Overclassified	# Waters Indeterminate
F or S	45	0	*	0	0
Ns	31	1	0	0	1
Np	38	1	0	1	0
Type A Wetlands	14	3	2	1	0
Type B Wetlands	28	5	4	1	0
Forested Wetlands	19	1	1	0	0
Total	175	11	7	3	1

- **Underclassified** — Water should have been typed on the FPA/N and protected on the ground at a higher level

- **Overclassified** — Water should have been typed on the FPA/N and protected on the ground at a lower level

- **Indeterminate** — Not enough information available for field team to make water typing determination
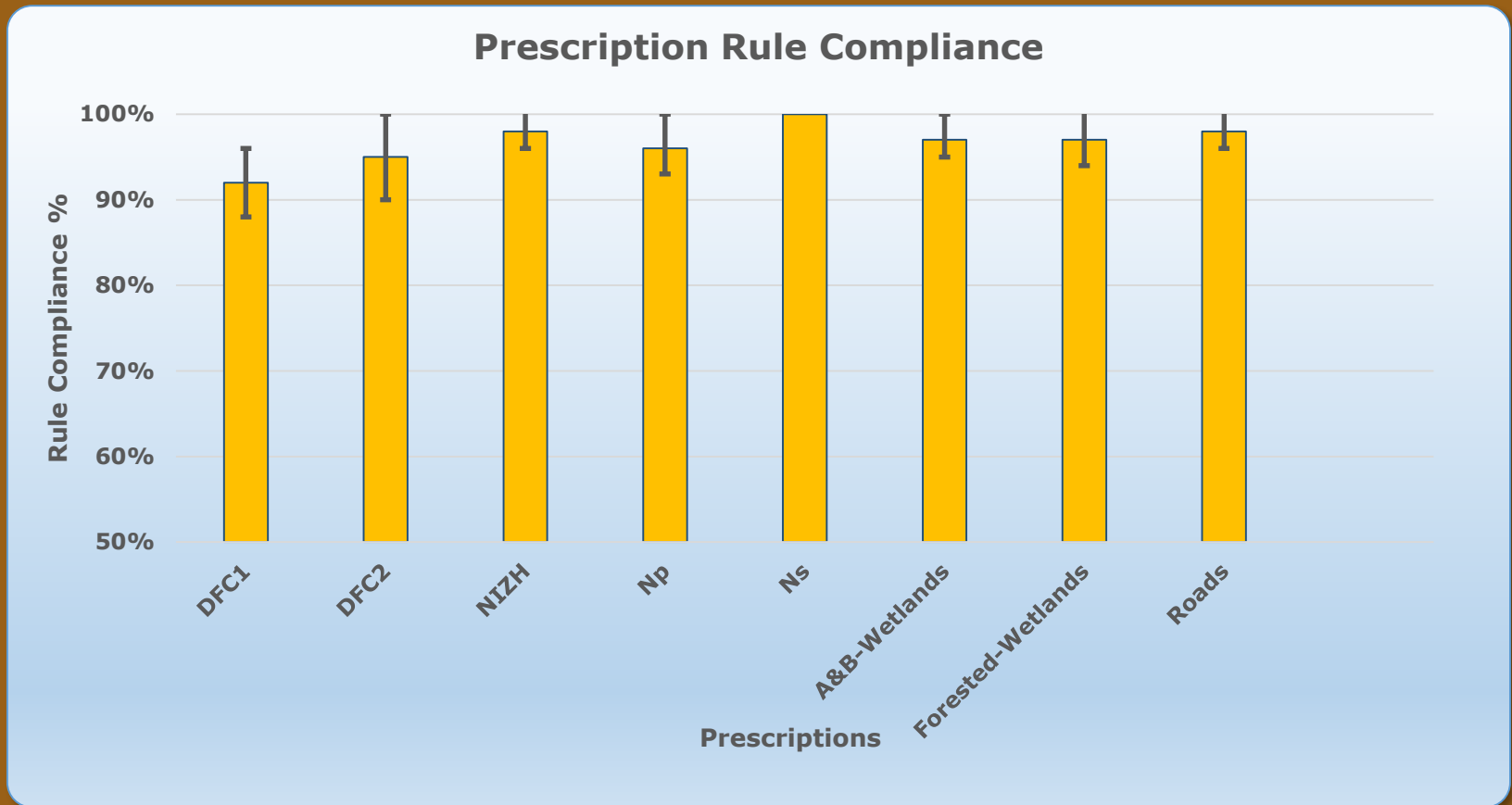
2018-19 Standard Prescription Compliance with Forest Practices Rules
(Chapter 5.2, pg. 32)

Status of Compliance	Western WA		Statewide					
	DFC1	DFC2	No Inner Zone Harvest	Np Activities	Ns Activities	Type A&B Wetlands	Forested Wetlands	Roads
# Compliant	130	80	126	116	32	164	33	125
# with Deviation	11	4	3	5	0	6	1	2.4
% of Sample Compliant	**92%**	**95%**	**98%**	**96%**	**100%**	**97%**	**97%**	**98%**
Confidence Interval	(88, 96)	(91, 100)	(95, 100)	(92, 99)	n/a	(94, 99)	(91, 100)	(96, 100)
Prescriptions Assessed	18	12	25	38	31	40	19	19

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2018-19 Standard Prescription Compliance with Forest Practices Rules

Prescription Rule Compliance — chart showing Rule Compliance % (50%–100%) across prescriptions: DFC1, DFC2, NIZH, Np, Ns, A&B-Wetlands, Forested-Wetlands, Roads.

Haul Routes
(Chapter 6, pg. 51 & 52)

Assessed mileage	66.8 miles
% Mean compliant	**97%**
No delivery	96%
De Minimis	1.3%
% Non-compliant	3%
95% Confidence Interval	(93%, 100%)
Exceeds rule requirements	0
Low severity deviation	1.4%
Moderate severity deviation	0.1%
High severity deviation	1.2%
Indeterminate	0

Primary Cause	% Deviation for Primary Cause
Faulty Cross Drainage	50%
Obstruction of Bermed Ditch line	23%
Rutting/inadequate crown	5%
Sediment from stream adjacent parallel road	14%
Contaminated ditchwater	5%
Other	5%

Trend Analysis
(Chapter 7, pg. 53)

- **2010-2019 data used**
- **Linear regression**
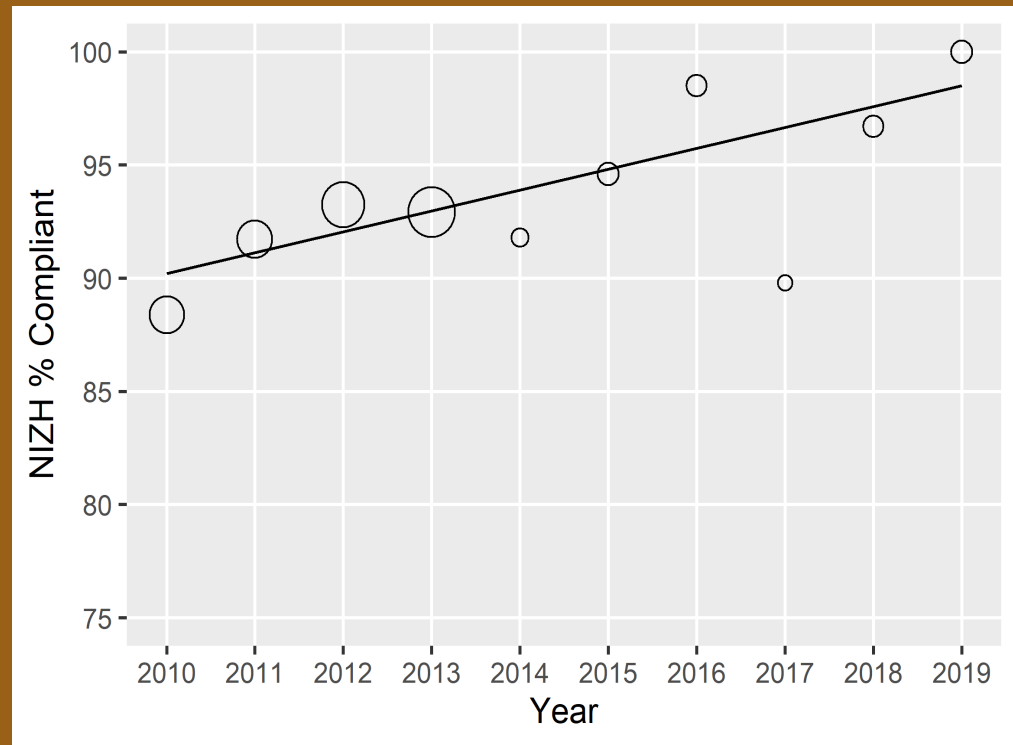- **No Haul Routes**

- **Prescriptions showing increasing compliance rates:**
  - **NIZH**
  - **DFC1**
  - **DFC2**
  - **Ns**
- **Prescriptions showing no observable trends:**
  - **Np**
  - **A&B Wetlands**
  - **Forested Wetlands**
  - **Roads**

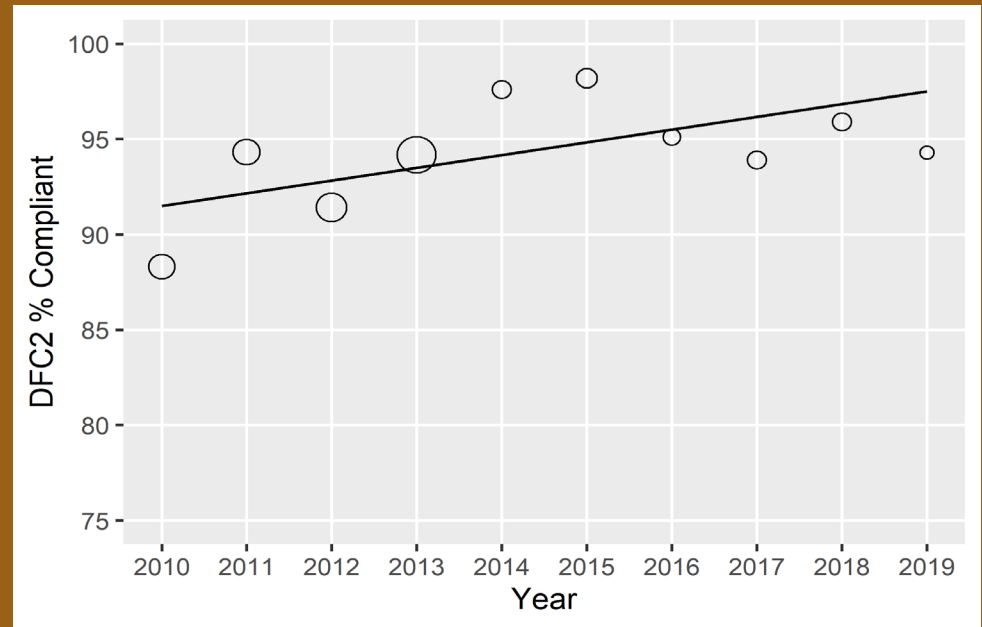# No Inner Zone Harvest

(pg. 56)

- **Compliance rates varied from 89%-99%**

- **Weighted *p=0.006***

- **Year over year increase 0.92%**

Desired Future Condition Option 2
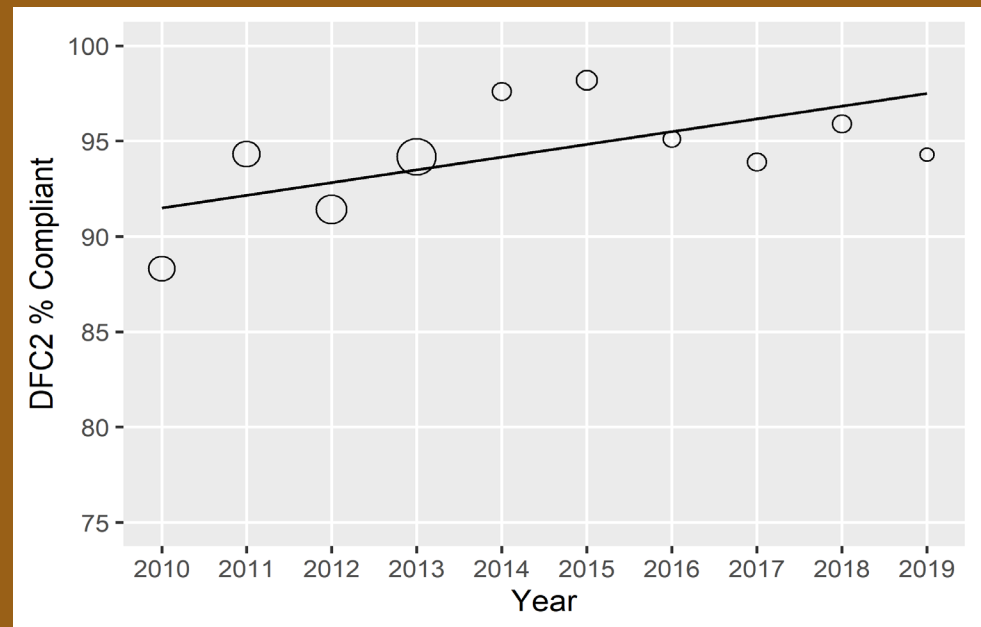
(pg. 55)

- **Compliance rates varied from 88%-98%**

- **Weighted *p=0.066***

- **Year over year increase 0.7%**

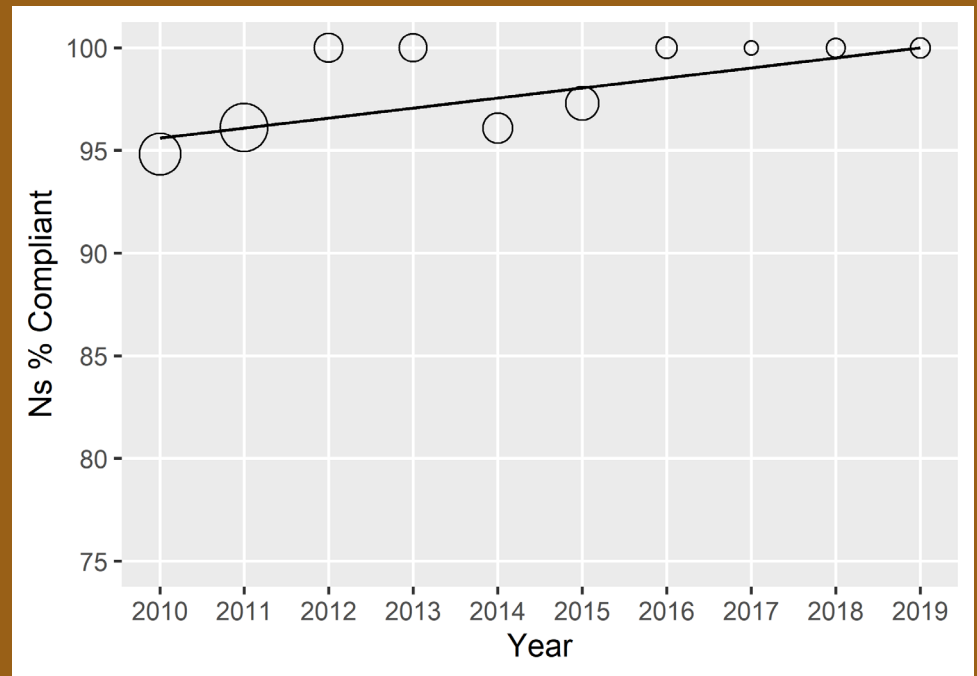# Desired Future Condition Option 1

(pg. 54 & 55)

- **Compliance rates varied from 82%- 98%**

- **Weighted *p=0.096***

- **Year over year increase 0.95%**

Non-fish seasonal streams

(pg. 57)

- **Compliance rates varied from 95%-100%**

- **Weighted *p=0.025***

- **Year over year increase 0.54%**

2019 Unstable Slopes Study

(Chapter 9. pg.66)

- **Random FPA/N selection criteria**: FPAs must contain identified or potential rule identified landforms (RILs) in/around the FPA/N footprint and completed forest practices activities

- Field reviews and compliance determinations were conducted by **qualified experts** from DNR Forest Practices' Science Team and Ecology's Forestry Unit

- Compliance determinations based on **FPA/N compliance only**

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Unstable Slopes FPA/N Compliance Questions
(pg. 66)

1. Is the harvest/activity in or around potentially unstable features?

2. Did the landowner avoid operating in or around potentially unstable rule identified features as identified on their FPA/N (Question 31)?

3. Did NO harvest occur within the identified no harvest area associated with potentially unstable rule identified features?

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Unstable Slopes Results
(pg. 67)

- **1 deviation observed where not all RILs were identified in/around FPA/N footprint**

- **No deviations were observed where operating occurred in or around potentially unstable rule identified features.**

- **1 deviation observed where harvest occurred within an identified no harvest area associated with potentially unstable rule identified features**

Unstable Slopes	
Sample Size	36
Mean Cluster Size	2.8
Questions Evaluated	102
Questions 'yes'	100
Mean 'yes'	**98%**
95% Confidence Interval	(95%, 100%)

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Forest Practices Operations Use of the Results

High Compliance Rates on Rule Implementation

- **Field reviewed compliance rates are near or above 90%**

- **Trends show improvement – no negative trends**

Rule Implementation and Enforcement is Working

- **High rates of compliance from landowners and representatives**

- **DNR assists landowners via pre-application reviews and small forest landowner assistance**

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Forest Practices Operations Use of the Results

Operations Proactively and Deliberately Continues to Make Improvements

- **Compliance Monitoring Program Improvements each Year**

- **Operations Improvements each Year**

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Recommendations/ Actions

- **Forest Practices work plans - FP Rule and Board Manual clarifications/additions**

- **Updates to the FPA/N form and instructions**

  - **Wetland – Clarification related to fish associated wetlands**

- **Timber, Fish, and Wildlife (TFW) meetings**

- **Training**

  - **Wetlands - Rule interpretation and implementation**

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Questions?

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