

Fish Creek WAG

January 15, 2008

Coeur d'Alene Regional Office

6-9 pm



Introductions



TMDL Development

- Setting limits on pollutants impairing beneficial uses
 - Temperature
 - Sediment
 - Bacteria



TMDL Findings

- Temperature
- Sediment
- Bacteria

Fish Creek Watershed Assessment and Total Maximum Daily Loads



Draft



Department of Environmental Quality

December 2007

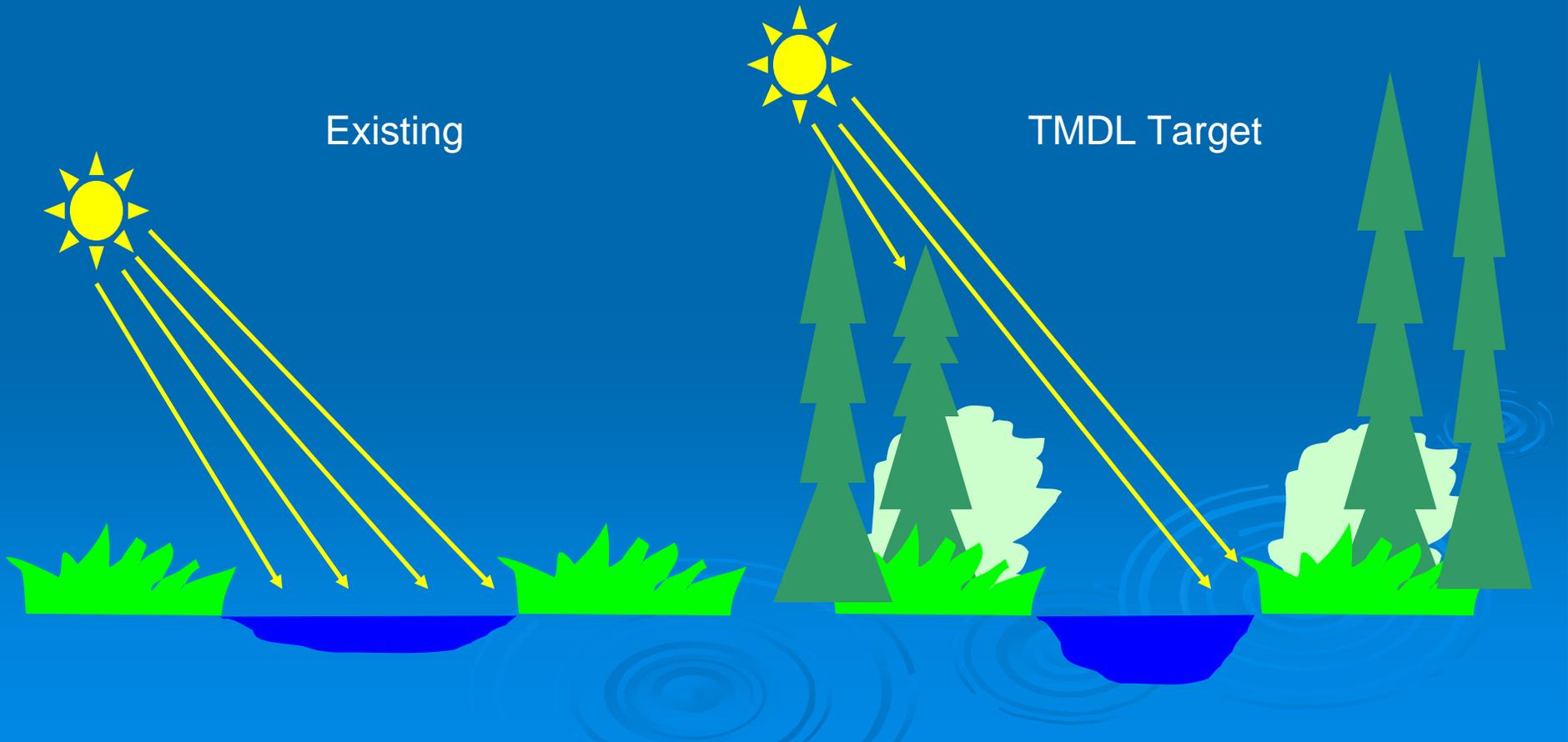
TMDL Findings

➤ Temperature

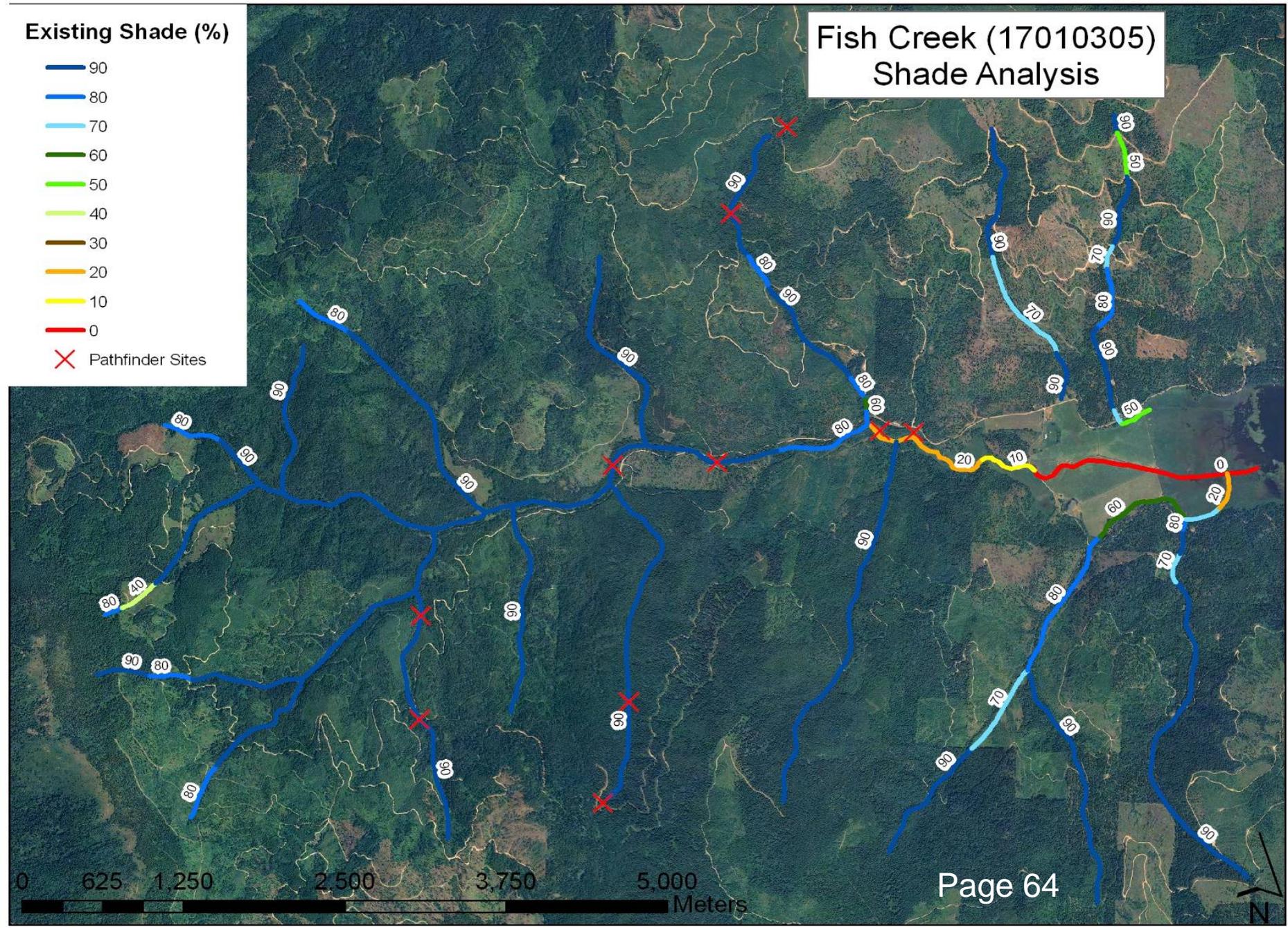
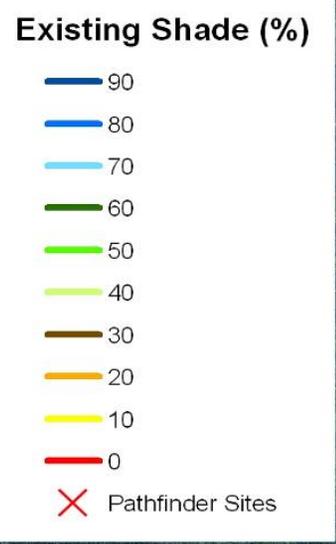
- Water quality standard
 - Numeric water quality criteria - Water Temperature
OR
 - *When natural background conditions exceed any applicable water quality criteria set forth...(page 7)*
- TMDL target
 - Increases in shade to natural levels

TMDL Findings

➤ Temperature



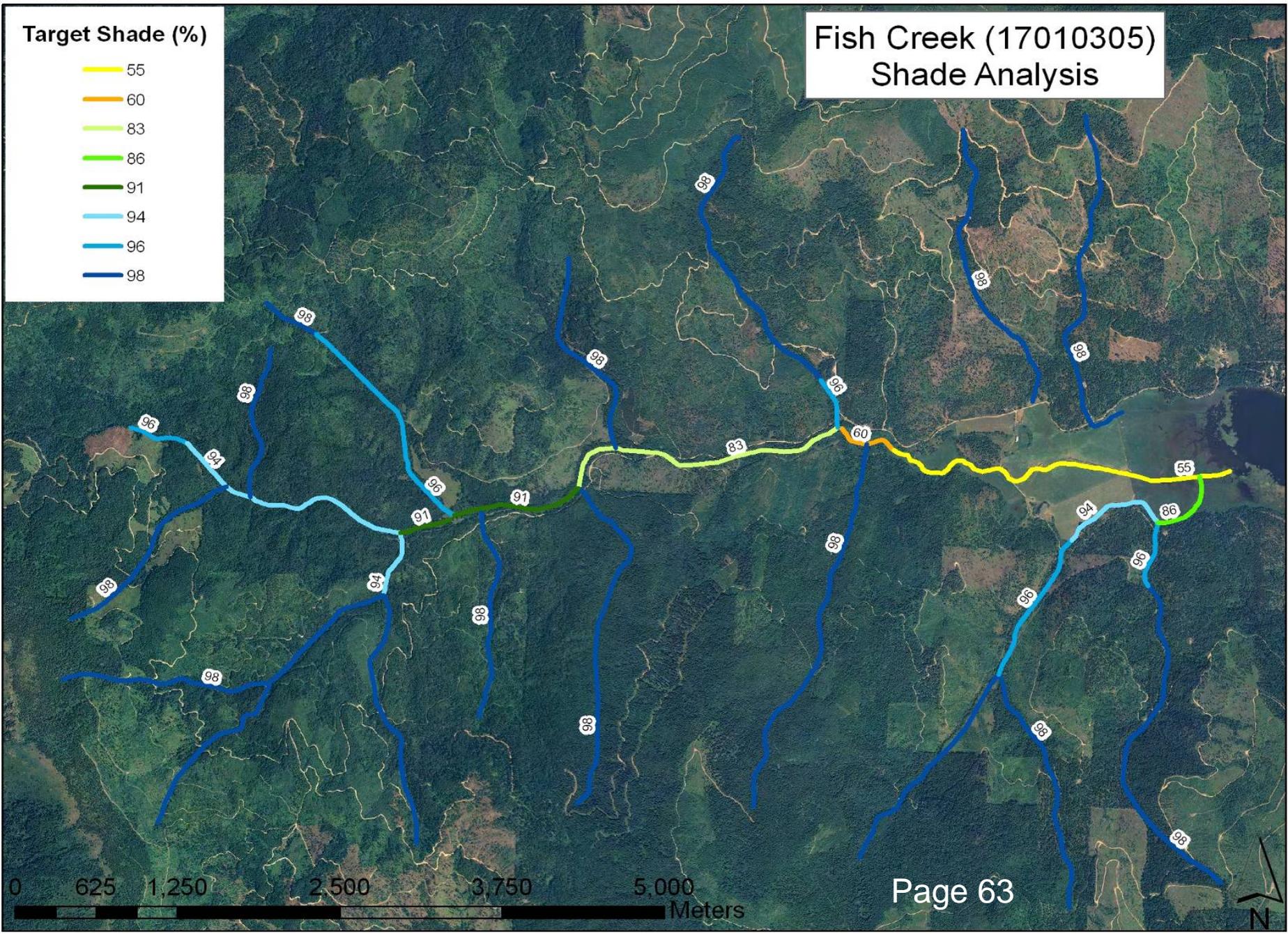
Fish Creek (17010305) Shade Analysis



Target Shade (%)

- 55
- 60
- 83
- 86
- 91
- 94
- 96
- 98

**Fish Creek (17010305)
Shade Analysis**

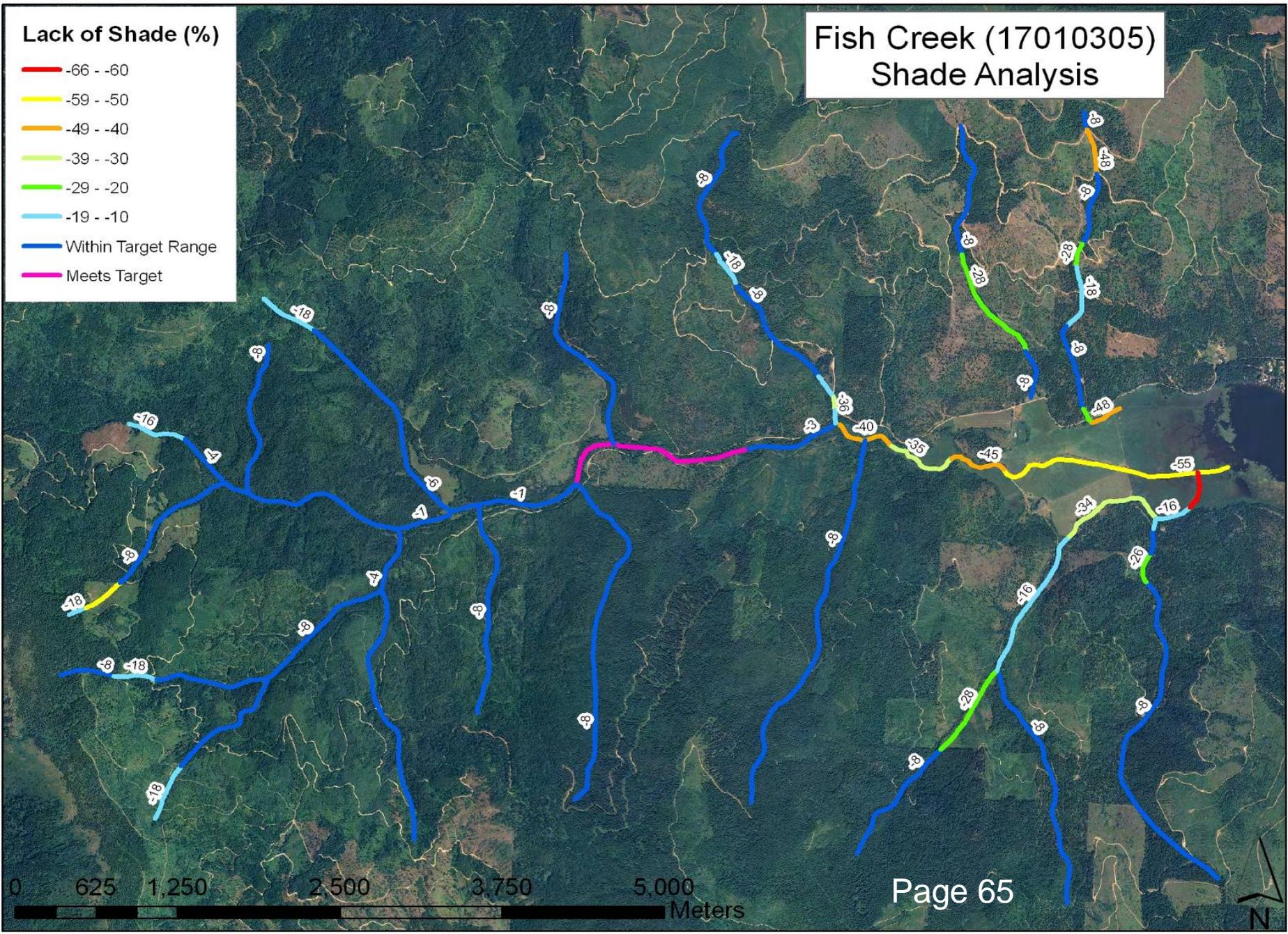


0 625 1,250 2,500 3,750 5,000 Meters

Lack of Shade (%)

- -66 - -60
- -59 - -50
- -49 - -40
- -39 - -30
- -29 - -20
- -19 - -10
- Within Target Range
- Meets Target

**Fish Creek (17010305)
Shade Analysis**



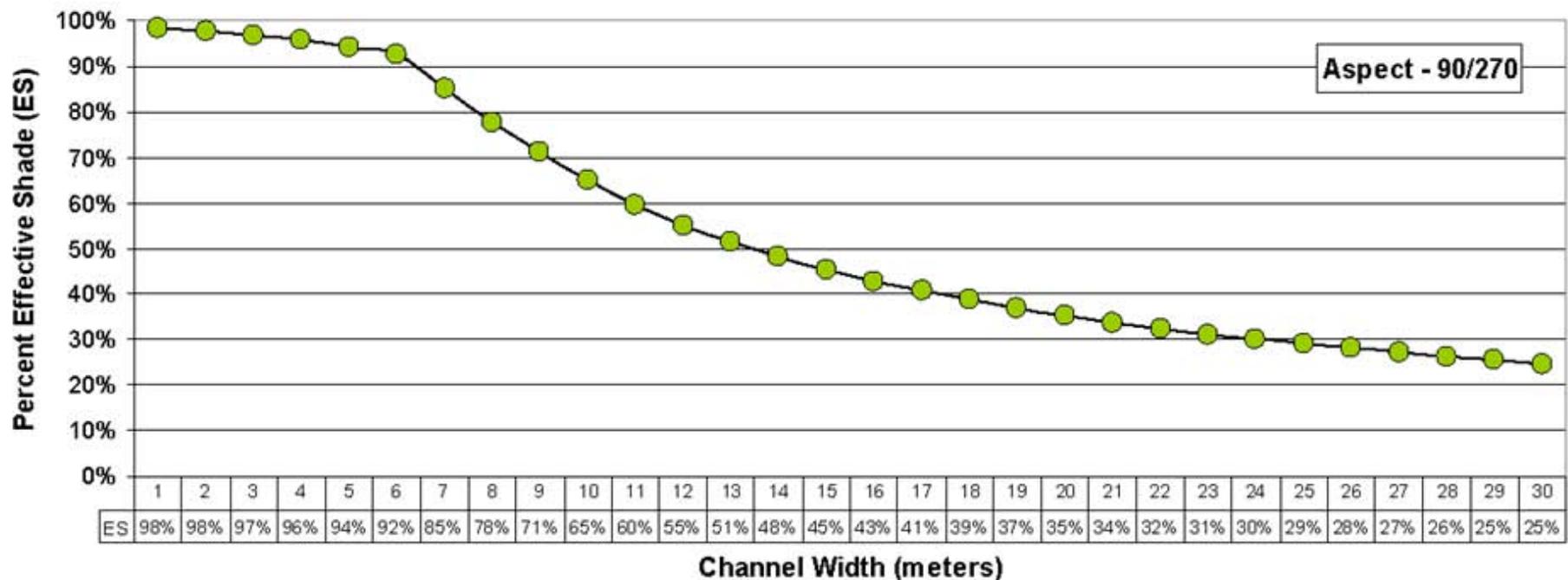
0 625 1,250 2,500 3,750 5,000 Meters

TMDL Findings

➤ System Potential Shade Curves

- Appendix X

Forest Group B

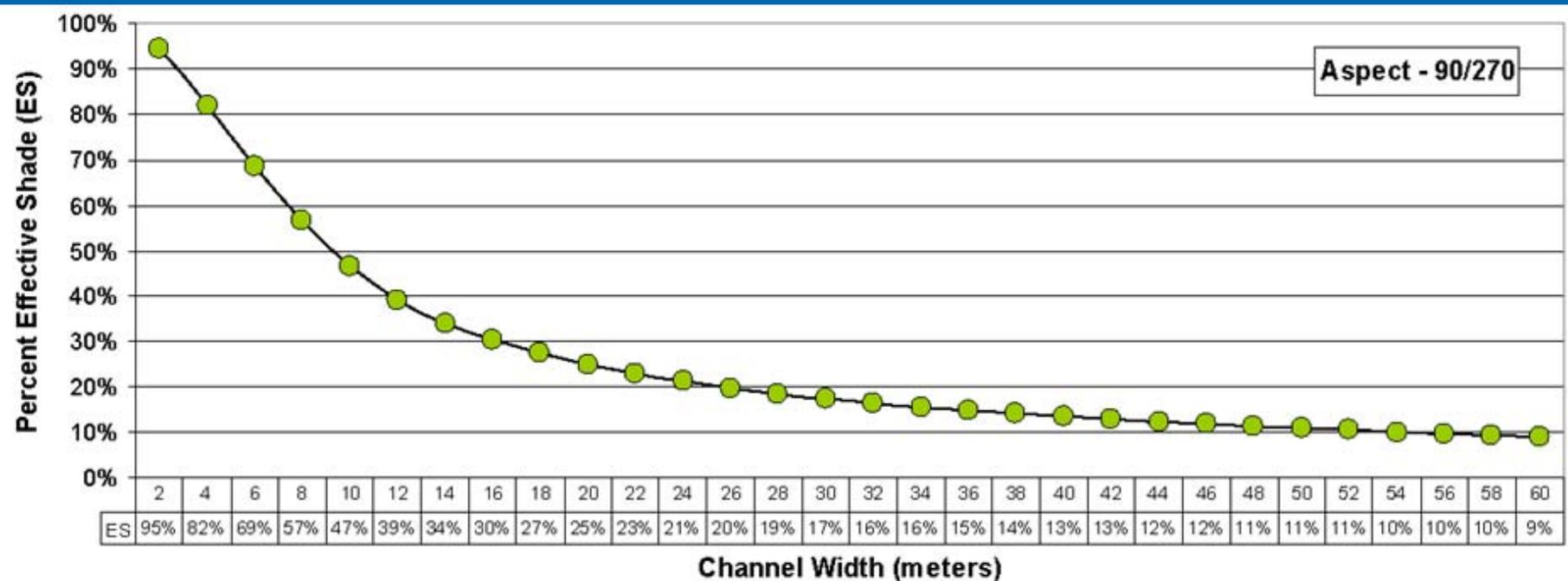


TMDL Findings

➤ System Potential Shade Curves

- Appendix X

Non-Forest Group 1



TMDL Findings

➤ Temperature

Table 19. Excess Solar Loads and Percent Reductions for Fish Creek and Tributaries.

Water Body	Excess Load (kWh/day)	Percent Reduction Necessary
Fish Creek	72,872 (up to 12,116 as MD)	37 – 45%
South-side Tributaries	37,179 (up to 21,031 as MD)	35 – 81%
North-side Tributaries	17,319 (up to 10,359 as MD)	33 – 83%

MD = Method Difference, explained in text.

TMDL Findings

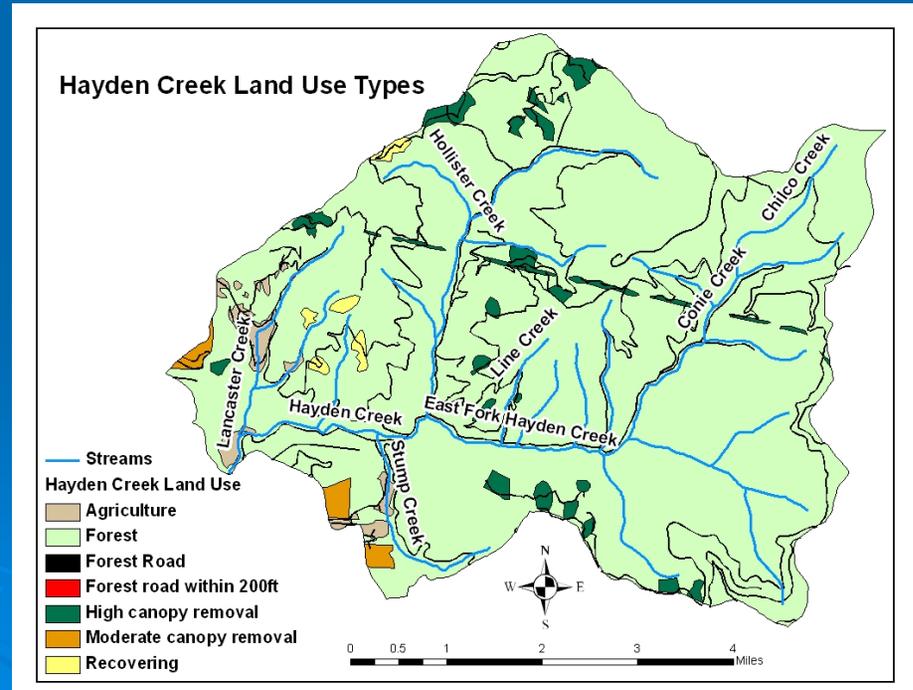
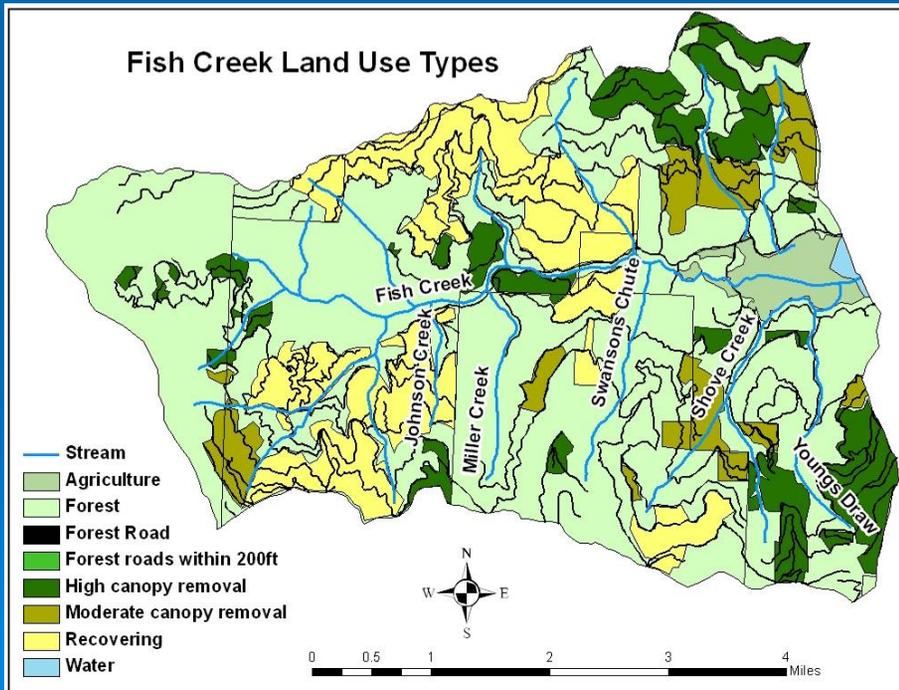
➤ Sediment

- Water quality standard
 - Narrative standard – “free from”
 - *Sediment shall not exceed quantities which impair designated beneficial uses. (page 6)*
- TMDL Target
 - Reduce sediment by 85%

TMDL Findings

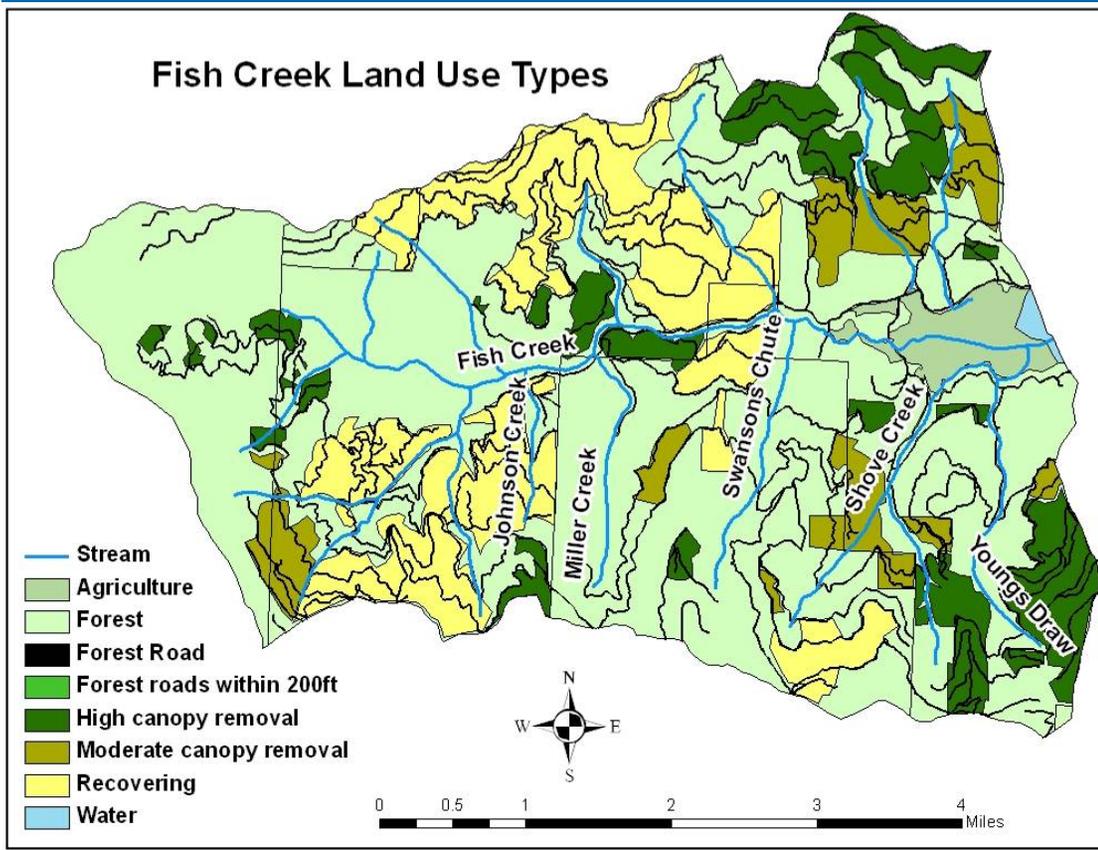
➤ Sediment

- Modeling approach with use of a reference watershed



TMDL Findings

➤ Sediment



➤ Sediment Yield Coef. (tons/acre/year) pg 157

- Forest 0.23
- HCA 0.21
- MCA 0.07
- LCA 0.025
- Recovering 0.024
- Forest Rd 0.9-0.046
- Forest Rd* 9.06-2.17
- Agriculture 0.04

* Road within 200 feet of a stream

TMDL Findings

➤ Sediment

Table 22. Estimated existing sediment loads from nonpoint sources in the Fish Creek watershed.

Land Use Type	Acres of land use type	Load (tons/year)	Estimation Method
Agriculture	345	14	Modeled
High Canopy Removal	1,447	304	Modeled
Medium Canopy Removal	826	58	Modeled
Recovering Harvest	2,431	61	Modeled
Forest (natural background) ¹	8,504	196	Modeled
Forest road	583	38	Modeled
Forest road within 200 feet of stream	67	157	Modeled
Water	34	0	Modeled
Total Acres	14,237	828	-

¹Naturally occurring land use type, contributing load was not allocated for reduction.

TMDL Findings

➤ Sediment

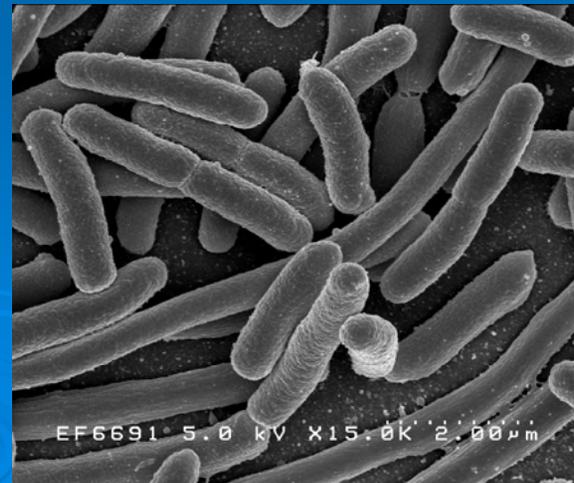
Table 23. Sediment existing load, target load, and load reduction for the Fish Creek watershed.

Watershed	Existing Load (tons/year)	Target Load (tons/year)	Load Reduction (tons/year)	Percent Load Reduction (%)
Fish Creek	827	549	278	85

TMDL Findings

➤ Bacteria

- Water quality standard
 - *“Waters designated for primary or secondary contact recreation are not to contain E. coli bacteria in concentrations exceeding a geometric mean of one hundred twenty-six (126) E. coli organisms per one hundred (100) ml based on a minimum of five (5) to seven (7) days over a thirty (30) day period.” (page 7)*



TMDL Findings

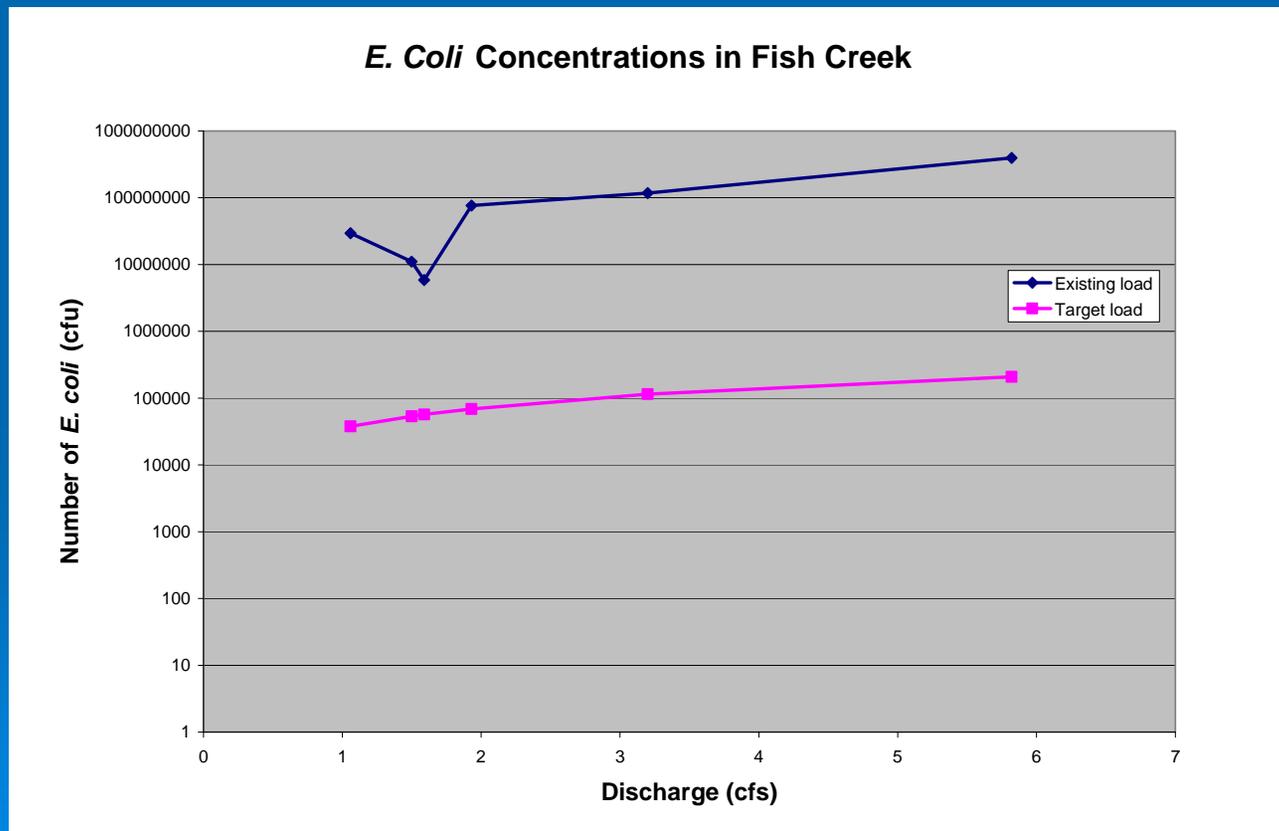
➤ Bacteria

- Water Quality Standard = 126 cfu/100 ml *E. coli*
 - cfu = colony forming units
- A flow of 1 cfs can contain 35,679 cfu of *E. coli* at loading capacity

1 cubic foot	28,316.85 milliliters	126 cfu
	1 cubic foot	100 milliliters

TMDL Findings

➤ Bacteria



TMDL Findings

➤ Bacteria

Table 24. Numbers of *E. coli* colonies at target load capacity, current load, and reduced load, and percent load reduction necessary for the Fish Creek watershed.

Measured <i>E. coli</i> concentration	Discharge (cfs) at sample collection	Load Capacity at time of bacteria sampling (cfu/100ml)	Current Load	Reduction Necessary	% Load Reduction Necessary
>2,400 ¹	5.82	207,653	395,529,761	395,322,108	190,376
1,400	1.93	68,861	76,512,129	76,443,268	111,011
980	1.06	37,820	29,415,544	29,377,724	77,678
1,300	3.20	114,174	117,798,096	117,683,922	103,075
260	1.50	53,519	11,043,572	10,990,053	20,535
130	1.59	56,730	5,853,093	5,796,363	10,217

¹ The upper bound of the lab reporting limit of *E. coli* is 2,400 cfu/100ml.

TMDL Findings

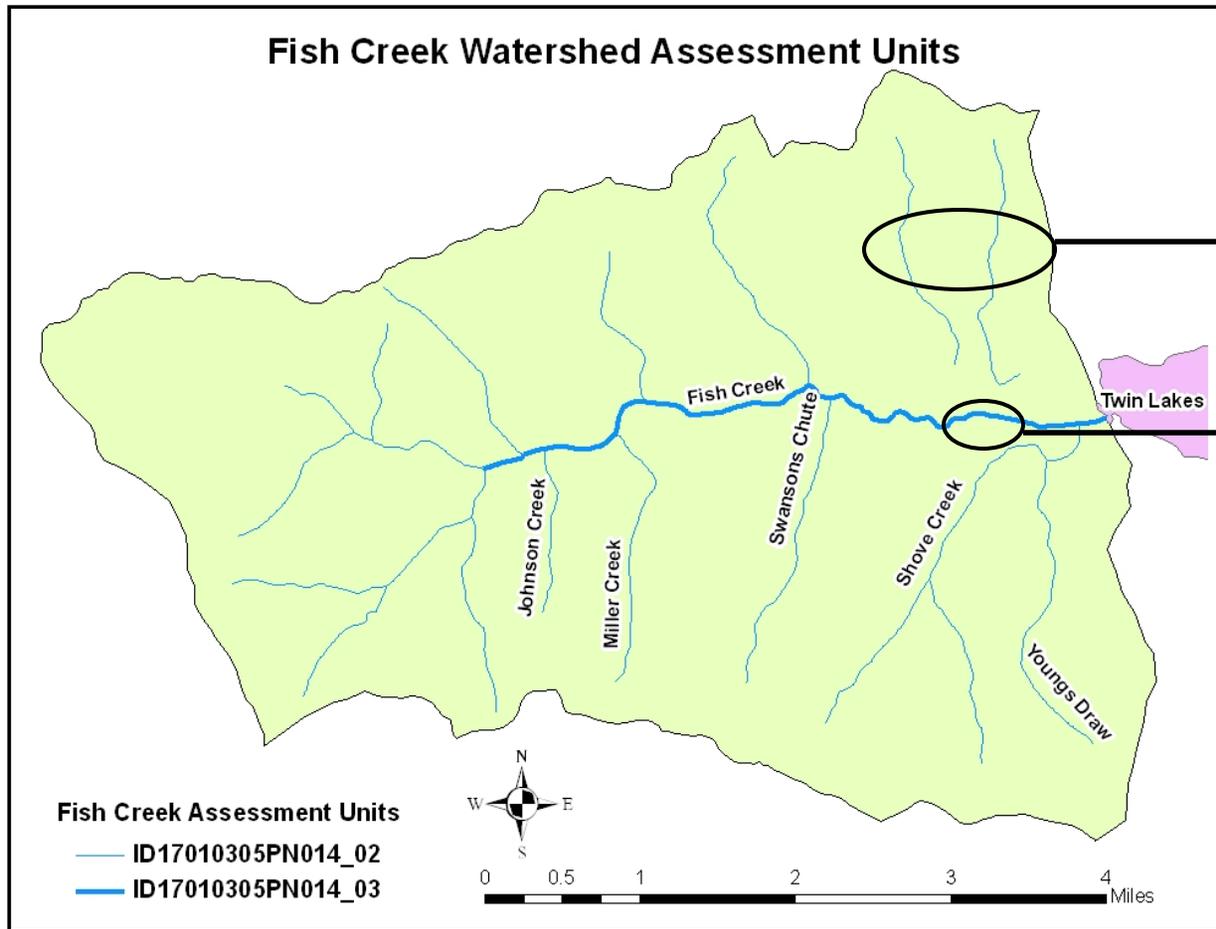
➤ TMDL outcomes

Table 25. Summary of assessment outcomes.

Stream	Assessment Unit	Pollutant	TMDL(s) Completed	Recommended Changes to §303(d) List	Justification
Fish Creek, tributaries	ID17010305PN014_02	Temperature	Yes	Move to section 4a ¹ of Integrated Report	TMDL Completed
Fish Creek, tributaries	ID17010305PN014_02	Sediment	Yes	Move to section 4a ¹ of Integrated Report	TMDL Completed
Fish Creek, mainstem	ID17010305PN014_03	Temperature	Yes	Move to section 4a ¹ of Integrated Report	TMDL Completed
Fish Creek, mainstem	ID17010305PN014_03	Sediment	Yes	Move to section 4a ¹ of Integrated Report	TMDL Completed
Fish Creek, mainstem	ID17010305PN014_03	Bacteria	Yes	Move to section 4a ¹ of Integrated Report	TMDL Completed

¹ Section 4a of Integrated Report, Rivers with EPA Approved TMDLs.

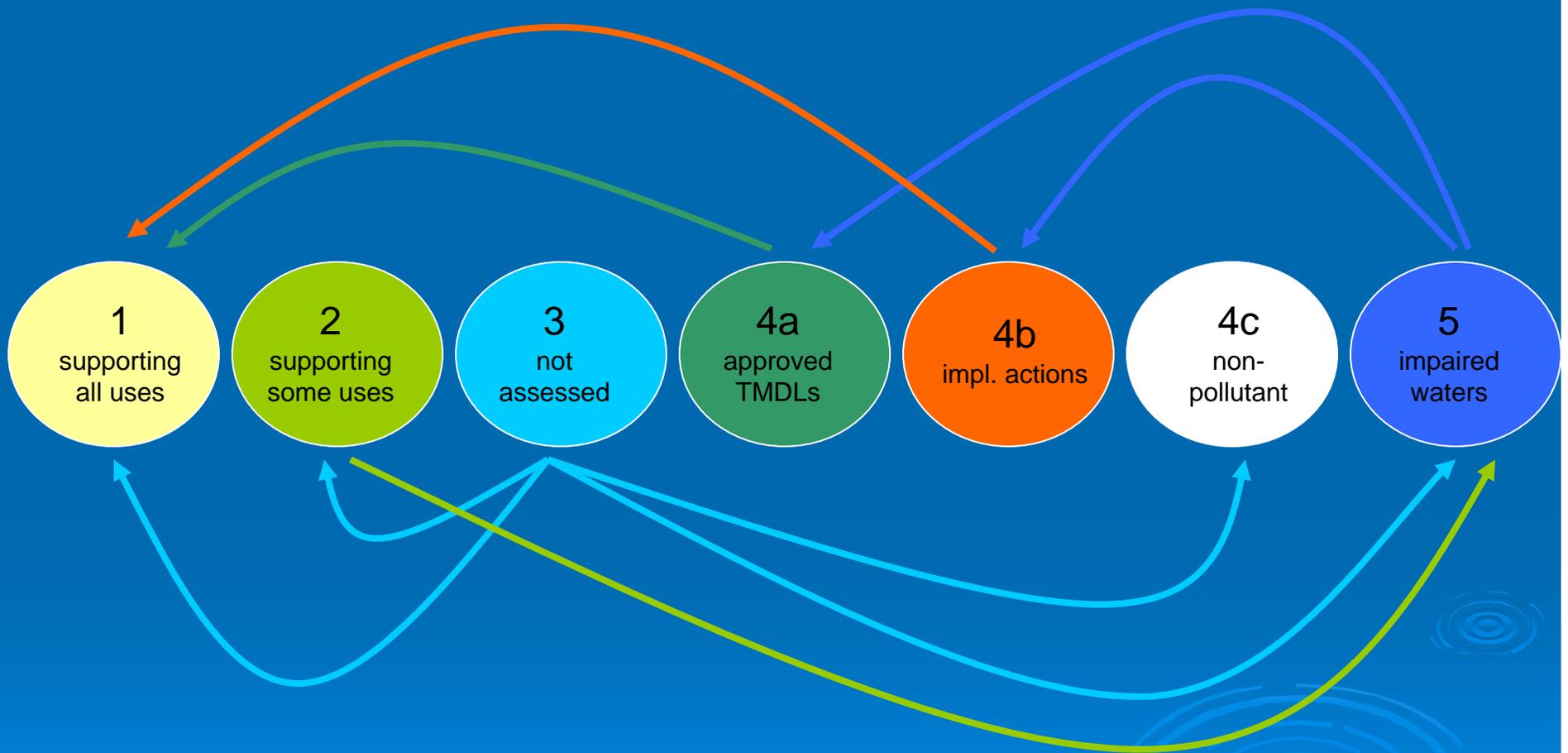
2008 Integrated Report Updates



Temperature

Temperature
Sediment
Bacteria

2008 Integrated Report Updates



Once the TMDL is approved by EPA the assessment unit/pollutant combination for which the TMDL was written will move to Section 4a.

Next Steps

- Incorporate WAG comments
 - Initiate public comment period
 - Incorporate comments received
 - Submit to EPA for approval
- 

Public Comment Period

- 30 day public comment period
- Notice posted in local papers
- Copies made available at local libraries and through the internet

Public Comment Period

- Following public comment period
 - Comments will be addressed accordingly
- WAG will be made aware of comments received
- Document will be submitted to EPA with WAG and BAG's consent
- EPA will review and approve

Timeline

January 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
		WAG Meeting				
20	21	22	23	24	25	26
	Holiday	_____				
27	28	29	30	31		

February 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2

3	4	5	6	7	8	9

10	11	12	13	14	15	16

17	18	19	20	21	22	23

24	25	26	27	28	29	

30 day comment period