

## 6. Appendices

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## **A. How to Access Ecosystem Diagnosis and Treatment (EDT) Input and Output via the Internet.**

The full set of inputs and products from the Ecosystem Diagnostic and Treatment are available on the internet from Mobrand Biometrics Inc.

Specifically, the following products can be downloaded:

- Stream Reach Editor, with input data for Fifteenmile Subbasin;
- Baseline Report;
- Diagnostic Report;
- Scenario Report.

One can also download the various tools used to model the stream system, fish population and to create restoration scenarios and thus experiment with modified input assumptions and alternate restoration scenarios.

To access EDT for the Fifteenmile Creek Subbasin:

1. Navigate to <http://www.mobrand.com/edt/NWPCCC/index.htm>
2. Select Columbia Gorge Province.
3. Log in or register yourself.
4. After you are logged in, select Fifteenmile Creek Subbasin.
5. Follow directions for various downloads. Mobrand Biometrics provides detailed instructions in Adobe Acrobat format.

Information on the EDT model itself, such as the information structure, is available in the Mobrand online library at <http://www.mobrand.com/MBI/library.html> .

**B. Reach Definitions used in the EDT Model.**

<b>Reach code</b>	<b>No.</b>	<b>Reach location/description</b>	<b>Length (meters)</b>
Fifteenmile Cr-1	1	From mouth at Columbia R to Seufert's Falls #51409, called Cushing Falls on Quad map	483
Fifteenmile Cr-2	2	Seufert Falls #51409, called Cushing Falls on Quad map	0
Fifteenmile Cr-3	3	From Seufert Falls #51409, called Cushing Falls on Quad map to Eightmile Cr	2,896
Eightmile Cr-1	4	From mouth at Fifteenmile Cr to Fivemile Cr	2,203
Fivemile Cr-1	5	From mouth at Eightmile Cr to trib at 640 ft level	7,036
Fivemile Cr-2	6	From trib at 640 ft level to the gravel pit just below 800 ft level	1,876
Fivemile Cr-3	7	From gravel pit just below 800 ft level to NF Fivemile Cr	13,828
Fivemile Cr-4	8	From NF to MF/SF confluence	6,179
Fivemile Cr SF-1	9	From confluence with MF/mainstem Fivemile Cr to Forest 4440-160 road crossing just above the mouth	611
Fivemile Cr MF-1	10	From confluence with SF/mainstem Fivemile Cr to culvert at Forest Road 4430 at 3200 ft level	7,717
Fivemile Cr MF-2	11	Culvert - Forest Road 4430 at 3200 ft level	0
Fivemile Cr MF-3	12	From culvert at Forest Road 4430 at 3200 ft level to 3360 ft level	75
Eightmile Cr-2	13	From Fivemile Cr to unnamed trib just above 400 ft level	2,405
Eightmile Cr-3	14	From unnamed trib just above 400 ft level to bridge at Lower Eightmile Road	2,907

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<b>Reach Code</b>	<b>No.</b>	<b>Description</b>	<b>Length (m)</b>
Eightmile Cr-4	15	From bridge at Lower Eightmile Road to trib just below the 720 ft level in section 28	2,161
Eightmile Cr-5	16	From trib just below the 720 ft level in section 28 to Japanese Hollow	5,001
Eightmile Cr-6	17	From Japanese Hollow to Wolf Run	12,798
Eightmile Cr-7	18	From Wolf Run to Rail Hollow	5,305
Eightmile Cr-8	19	From Rail Hollow to road crossing at Lower Eightmile Campground	12,523
Eightmile Cr-9	20	From road crossing at Lower Eightmile Campground to Wolf Run Ditch	1,231
Eightmile Cr-10	21	From Wolf Run Ditch to culvert at Forest Road 4400-120 at Bottle Prairie	3,858
Eightmile Cr-11	22	Culvert - Forest Road 4400-120 at Bottle Prairie	0
Eightmile Cr-12	23	From culvert at Forest Road 4400-120 at Bottle Prairie to culvert at Forest Road 4400	68
Eightmile Cr-13	24	Culvert- Forest Road 4400	0
Eightmile Cr-14	25	From culvert at Forest Road 4400 to 5240 ft level	4,323
Fifteenmile Cr-4	26	From Eightmile Cr to Company Hollow	8,924
Fifteenmile Cr-5	27	From Company Hollow to Davis Cr	17,277
Fifteenmile Cr-6	28	From Davis Cr to Dry Cr	7,902
Dry Cr-1	29	From mouth at Fifteenmile Cr to Mays Canyon Cr	10,870

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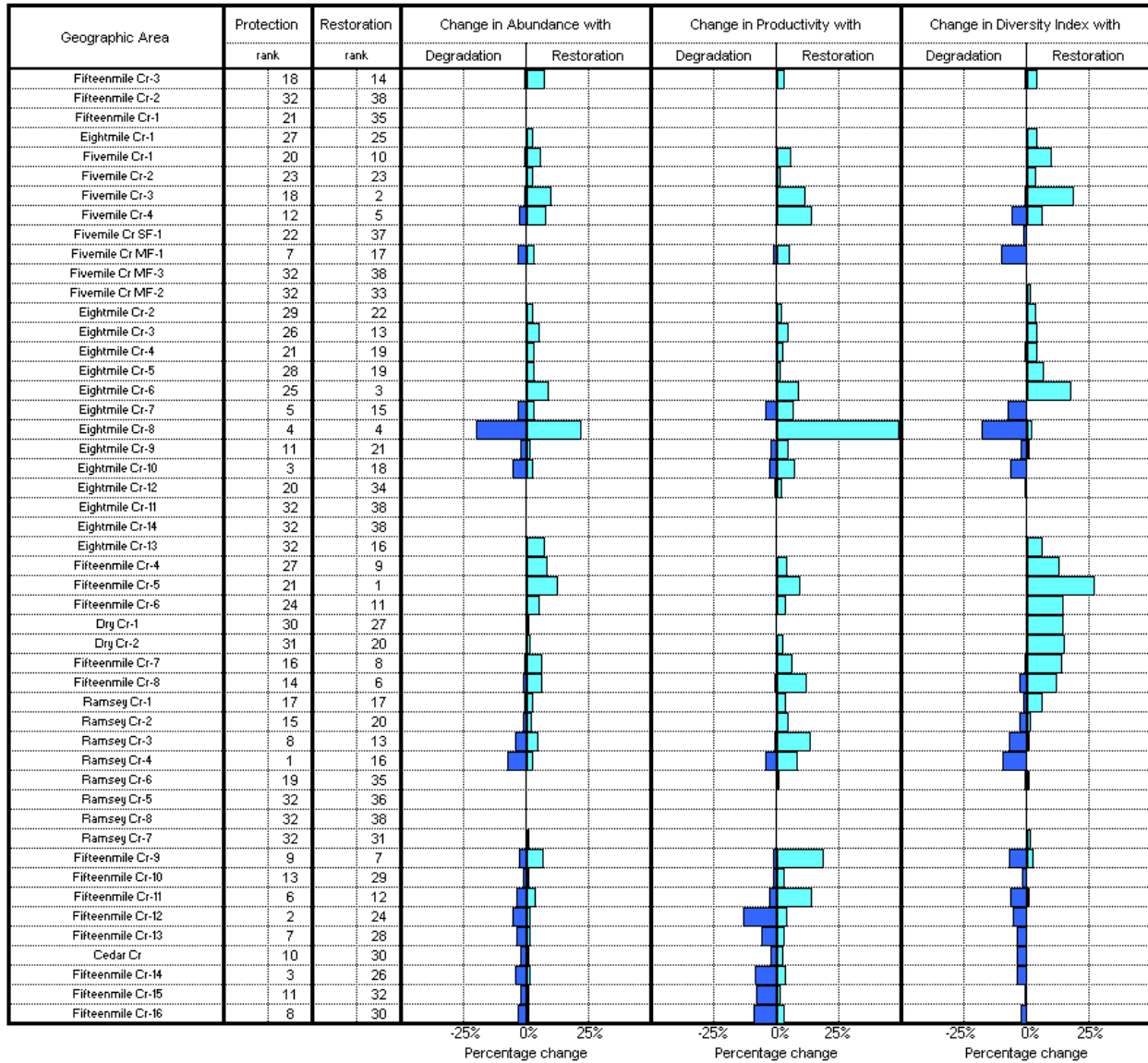
<b>Reach Code</b>	<b>No.</b>	<b>Description</b>	<b>Length (m)</b>
Dry Cr-2	30	From Mays Canyon Cr to trib at 2160 ft level	11,496
Fifteenmile Cr-7	31	From Dry Cr to Pine Cr	9,129
Fifteenmile Cr-8	32	From Pine Cr to Ramsey Cr	8,676
Ramsey Cr-1	33	From mouth at Fifteenmile Cr to Olson's Diversion at road crossing in section 2	4,571
Ramsey Cr-2	34	From Olson's Diversion at road crossing in section 2 to new Mt Hood NF boundary at section line 10/3	2,010
Ramsey Cr-3	35	From new Mt Hood NF boundary at section line 10/3 to trib at 2440 ft level	4,056
Ramsey Cr-4	36	From trib at 2440 ft level to culvert at Forest Road 4450 at 3360 ft level	6,954
Ramsey Cr-5	37	Culvert - Forest Road 4450 at 3360 ft level	0
Ramsey Cr-6	38	From culvert at Forest Road 4450 at 3360 ft level to concrete weir #51386 at pond in section 16	637
Ramsey Cr-7	39	Concrete weir #51386 at pond in section 16	0
Ramsey Cr-8	40	From concrete weir #51386 at pond in section 16 to boulder cascade near 3840 ft level	1,720
Fifteenmile Cr-9	41	From Ramsey Cr to Dufur City Rsv Dam in section 15	6,579
Fifteenmile Cr-10	42	From Dufur City Rsv Dam in section 15 to entrance of canyon reach at 2000 ft level	1,144
Fifteenmile Cr-11	43	From entrance of canyon reach at 2000 ft level to Orchard Ridge Diversion just below Forest Road 4421 at section line 19/20	4,550
Fifteenmile Cr-12	44	From Orchard Ridge Diversion just below Forest Road 4421 at section line 19/20 to upper end of valley at 2560 ft level	3,282

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<b>Reach Code</b>	<b>No.</b>	<b>Description</b>	<b>Length (m)</b>
Fifteenmile Cr- 13	45	From upper end of valley at 2560 ft level to Cedar Cr	1,807
Cedar Cr	46	From mouth at Fifteenmile Cr to Frailey Point Trail in section 28	2,841
Fifteenmile Cr- 14	47	From Cedar Cr to Deadman Gulch	2,372
Fifteenmile Cr- 15	48	From Deadman Gulch to Unnamed Trib at 3080 ft level	545
Fifteenmile Cr- 16	49	From Unnamed Trib at 3080 ft level to cascade barrier at 3460 ft level	1,371

## C. Relative Importance of Geographic Areas for Protection and Restoration Measures

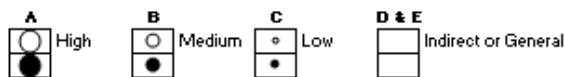
The table shown below is the “Tornado Diagram” from EDT Report 2, showing the relative changes in abundance, productivity and life history diversity from the presettlement condition to the current condition.



## D. Fifteenmile Creek Winter Steelhead Protection and Restoration Priorities

Geographic area priority		Attribute class priority for restoration															
Geographic area	Protection benefit	Restoration benefit	Channel Stability	Chemicals	Competition (other sp.)	Flow	Food	Habitat diversity	Harassment/poaching	Obstructions	Oxygen	Pathogens	Predation	Sediment load	Temperature	Withdrawals	Key habitat quantity
	Fifteenmile Cr-3	○	○	●			●	●	●	●	●	●	●	●	●	●	
Fifteenmile Cr-2	○	○				●	●	●	●	●	●	●	●	●	●		●
Fifteenmile Cr-1	○	○				●	●	●	●	●	●	●	●	●	●		●
Eightmile Cr-1	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Fivemile Cr-1	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Fivemile Cr-2	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Fivemile Cr-3	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Fivemile Cr-4	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Fivemile Cr SF-1	○	○				●	●	●	●	●	●	●	●	●	●		●
Fivemile Cr MF-1	○	○				●	●	●	●	●	●	●	●	●	●		●
Fivemile Cr MF-3	○	○				●	●	●	●	●	●	●	●	●	●		●
Fivemile Cr MF-2	○	○							●								
Eightmile Cr-2	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Eightmile Cr-3	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Eightmile Cr-4	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Eightmile Cr-5	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Eightmile Cr-6	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Eightmile Cr-7	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Eightmile Cr-8	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Eightmile Cr-9	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Eightmile Cr-10	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Eightmile Cr-12	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Eightmile Cr-11	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Eightmile Cr-14	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Eightmile Cr-13	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Fifteenmile Cr-4	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Fifteenmile Cr-5	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Fifteenmile Cr-6	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Dry Cr-1	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Dry Cr-2	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Fifteenmile Cr-7	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Fifteenmile Cr-8	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Ramsey Cr-1	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Ramsey Cr-2	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Ramsey Cr-3	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Ramsey Cr-4	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Ramsey Cr-6	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Ramsey Cr-5	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Ramsey Cr-8	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Ramsey Cr-7	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Fifteenmile Cr-9	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Fifteenmile Cr-10	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Fifteenmile Cr-11	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Fifteenmile Cr-12	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Fifteenmile Cr-13	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Cedar Cr	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Fifteenmile Cr-14	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Fifteenmile Cr-15	○	○	●			●	●	●	●	●	●	●	●	●	●		●
Fifteenmile Cr-16	○	○	●			●	●	●	●	●	●	●	●	●	●		●

Key to strategic priority (corresponding Benefit Category letter also shown)





## E. Sample Diagnostic for Two Reaches in the Fifteenmile Subbasin

The two images shown below are samples of the reach diagnostic pages in EDT Report 2. The full set of diagnostic pages is available from the EDT website, as described in appendix A.

Fifteenmile Reach 5 (From Company Hollow to Davis Cr) was ranked by EDT as the highest restoration priority in Fifteenmile Watershed.

<b>Species/Component:</b> Winter Steelhead				<b>Fifteenmile Winter Steelhead</b>	
<b>Restoration Potential:</b> Current Conditions versus Historic Potential					
<b>Restoration Emphasis:</b> Restoration or maintenance/improvement of historic life histories					
<b>Geographic Area:</b> Fifteenmile Cr-5			<b>Stream:</b>		
<b>Reach:</b> From Company Hollow to Davis Cr			<b>Reach Length (mi):</b> 10.74		
			<b>Reach Code:</b> Fifteenmile Cr-5		
<b>Restoration Benefit Category:</b> 1/	A	<b>Productivity Rank:</b> 1/	8	<b>Potential % change in productivity:</b> 2/	9.0%
<b>Overall Restoration Potential Rank:</b> 1/	1	<b>Average Abundance (Neq) Rank:</b> 1/	2	<b>Potential % change in Neq:</b> 2/	11.9%
<b>(lowest rank possible - with ties)</b> 1/	38	<b>Life History Diversity Rank:</b> 1/	1	<b>Potential % change in diversity:</b> 2/	26.8%
<b>Preservation Benefit Category:</b> 1/	C	<b>Productivity Rank:</b> 1/	22	<b>Loss in productivity with degradation:</b> 2/	0.0%
<b>Overall Preservation Rank:</b> 1/	21	<b>Average Abundance (Neq) Rank:</b> 1/	27	<b>% loss in Neq with degradation:</b> 2/	-0.2%
<b>(lowest rank possible - with ties)</b> 1/	32	<b>Life History Diversity Rank:</b> 1/	22	<b>% loss in diversity with degradation:</b> 2/	-0.3%

Life stage	Relevant months	% of life history trajectories affected	Productivity change (%)	Life Stage Rank	Change in attribute impact on survival																			
					Channel stability	Chemicals	Competition (w/ hatch)	Competition (other sp)	Flow	Food	Habitat diversity	Harassment/poaching	Obstructions	Oxygen	Pathogens	Predation	Sediment load	Temperature	Withdrawals	Key habitat quantity				
Spawning	Mar-Jun	4.0%	-16.3%	9							●	●												
Egg incubation	Mar-Jul	4.0%	-74.8%	3	●				●													●	●	●
Fry colonization	May-Jul	4.0%	-46.6%	4	●			●	●	●	●											●	●	●
0-age active rearing	May-Jul	4.0%	-85.4%	1	●		●	●	●	●	●											●	●	●
0,1-age inactive	Oct-Mar	5.3%	-36.4%	6	●				●	●	●											●	●	●
1-age migrant	Mar-Jun	33.8%	-2.9%	11							●											●	●	●
1-age active rearing	Mar-Oct	5.1%	-42.6%	2	●		●	●	●	●	●											●	●	●
2+age active rearing	Mar-Oct	1.0%	-14.9%	8	●		●		●	●	●											●	●	●
2+age migrant	Mar-Jun	9.3%	-1.5%	13							●											●	●	●
2+age transient rearing																								
Prespawning migrant	Nov-Apr	43.3%	-1.9%	10							●	●										●	●	●
Prespawning holding	Dec-May	4.0%	-17.8%	7							●	●										●	●	●
All Stages Combined		43.3%																						

1/ Ranking based on effect over entire geographic area. 2/ Value shown is for overall population performance.

Notes: Changes in key habitat can be caused by either a change in percent key habitat or in stream width.

Potential % changes in performance measures for reaches upstream of dams were computed with full passage allowed at dams (though reservoir effects still in place).

**KEY**

NA = Not applicable

None		
Small	●	○
Moderate	●	○
High	●	○
Extreme	●	○

## Appendices

Ramsey Creek 4 (from tributary at 2440 ft level to culvert at Forest Road 4450 at 3360 ft level) was ranked by EDT as the highest protection priority.

<b>Species/Component:</b>	Winter Steelhead
<b>Restoration Potential:</b>	Current Conditions versus Historic Potential
<b>Restoration Emphasis:</b>	Restoration or maintenance/improvement of historic life histories

### Fifteenmile Winter Steelhead

<b>Geographic Area:</b> Ramsey Cr-4		<b>Stream:</b>	
<b>Reach:</b> From trib at 2440 ft level to culvert at Forest Road 4450 at 3360 ft level		<b>Reach Length (mi):</b> 4.32	
		<b>Reach Code:</b> Ramsey Cr-4	
<b>Restoration Benefit Category:1/</b>	B	<b>Productivity Rank:1/</b>	10
<b>Overall Restoration Potential Rank:1/</b>	16	<b>Average Abundance (Neq) Rank:1/</b>	22
<b>(lowest rank possible - with ties)1/</b>	38	<b>Life History Diversity Rank:1/</b>	26
<b>Preservation Benefit Category:1/</b>	A	<b>Productivity Rank:1/</b>	6
<b>Overall Preservation Rank:1/</b>	1	<b>Average Abundance (Neq) Rank:1/</b>	2
<b>(lowest rank possible - with ties)1/</b>	32	<b>Life History Diversity Rank:1/</b>	3
		<b>Potential % change in productivity:2/</b>	7.9%
		<b>Potential % change in Neq:2/</b>	2.3%
		<b>Potential % change in diversity:2/</b>	0.1%
		<b>Loss in productivity with degradation:2/</b>	-4.3%
		<b>% loss in Neq with degradation:2/</b>	-7.6%
		<b>% loss in diversity with degradation:2/</b>	-9.3%

Life stage	Relevant months	% of life history trajectories affected	Productivity change (%)	Life Stage Rank	Change in attribute impact on survival															
					Channel stability	Chemicals	Competition (w/ hatch)	Competition (other sp)	Flow	Food	Habitat diversity	Harassment/poaching	Obstructions	Oxygen	Pathogens	Predation	Sediment load	Temperature	Withdrawals	Key habitat quantity
Spawning	Mar-Jun	4.0%	-1.1%	7							●									○
Egg incubation	Mar-Jul	4.0%	-1.1%	6															●	○
Fry colonization	May-Jul	4.5%	-7.6%	3	●				●	●	●									○
0-age active rearing	May-Jul	4.4%	-12.9%	1					●	●	●									○
0,1-age inactive	Oct-Mar	4.3%	-11.2%	3					●		●									○
1-age migrant	Mar-Jun	2.8%	-0.1%	13							●									○
1-age active rearing	Mar-Oct	3.2%	-6.1%	4					●		●									○
2+age active rearing	Mar-Oct	1.2%	-3.1%	8					●		●									○
2+age migrant	Mar-Jun	1.3%	-0.1%	14							●									○
2+age transient rearing																				
Prespawning migrant	Nov-Apr	5.8%	0.0%	12							●									○
Prespawning holding	Dec-May	4.0%	-0.5%	11							●									○
All Stages Combined		5.8%																		

1/ Ranking based on effect over entire geographic area.

2/ Value shown is for overall population performance.

Notes: Changes in key habitat can be caused by either a change in percent key habitat or in stream width.

Potential % changes in performance measures for reaches upstream of dams were computed with full passage allowed at dams (though reservoir effects still in place).

**KEY**

NA = Not applicable

None			
Small	●	○	
Moderate	●	○	
High	●	○	
Extreme	●	○	

Appendices

## F. Life History Viabilities by Reach

The following tables were provided by Mobrand Biometrics by contract with Wasco County SWCD.

**Table F.1. Percentage of Viable Life Histories in the Template Condition by Smolt Age and Migrant or Resident Life History Pattern**

	Migrant Life Histories			Resident Life Histories			AVERAGE
	Age 1 Smolts	Age 2 Smolts	Age 3+ Smolts	Age 1 Smolts	Age 2 Smolts	Age 3+ Smolts	
Fifteenmile Cr-3	50%	30%	0%	100%	95%	100%	62%
Eightmile Cr-1	42%	57%	0%	100%	100%	100%	66%
Fivemile Cr-1	95%	68%	100%	100%	100%	100%	94%
Fivemile Cr-2	100%	93%	100%	100%	100%	100%	99%
Fivemile Cr-3	100%	92%	91%	100%	100%	100%	97%
Fivemile Cr-4	100%	100%		100%	100%	100%	100%
Fivemile Cr SF-1	100%	100%		100%	100%	100%	100%
Fivemile Cr MF-1	100%	100%	100%	100%	100%	100%	100%
Fivemile Cr MF-3	100%	100%	100%	100%	100%	100%	100%
Eightmile Cr-2	100%	75%		100%	100%	100%	95%
Eightmile Cr-3	100%	85%	75%	100%	100%	100%	93%
Eightmile Cr-4	100%	93%	50%	100%	100%	100%	91%
Eightmile Cr-5	80%	90%	100%	100%	100%	100%	95%
Eightmile Cr-6	97%	95%	94%	100%	100%	100%	98%
Eightmile Cr-7	100%	100%	100%	100%	100%	100%	100%
Eightmile Cr-8	100%	100%	100%	100%	100%	100%	100%
Eightmile Cr-9	100%	100%	100%	100%	100%	100%	100%
Eightmile Cr-10	100%	100%	100%	100%	100%	100%	100%
Eightmile Cr-12	100%	100%	100%	100%	100%		100%
Eightmile Cr-14	100%	100%	100%	100%	100%	100%	100%
Fifteenmile Cr-4	67%	63%	40%	100%	100%	100%	78%
Fifteenmile Cr-5	93%	95%	96%	100%	100%	100%	97%
Fifteenmile Cr-6	95%	100%	100%	100%	100%	100%	99%
Dry Cr-1	100%	100%	100%	100%	100%	100%	100%
Dry Cr-2	100%	100%	100%	100%	100%	100%	100%
Fifteenmile Cr-7	100%	100%	100%	100%	100%	100%	100%
Fifteenmile Cr-8	100%	100%	100%	100%	100%	100%	100%
Ramsey Cr-1	100%	100%	100%	100%	100%	100%	100%
Ramsey Cr-2	100%	100%	100%	100%	100%	100%	100%
Ramsey Cr-3	100%	100%	100%	100%	100%	100%	100%
Ramsey Cr-4	100%	100%	100%	100%	100%	100%	100%
Ramsey Cr-6	100%	100%		100%	100%	100%	100%
Ramsey Cr-8	100%	100%	100%	100%	100%	100%	100%
Fifteenmile Cr-9	100%	100%	100%	100%	100%	100%	100%
Fifteenmile Cr-10	100%	100%	100%	100%	100%	100%	100%
Fifteenmile Cr-11	100%	100%	100%	100%	100%	100%	100%
Fifteenmile Cr-12	100%	100%	100%	100%	100%	100%	100%
Fifteenmile Cr-13	100%	100%	100%	100%	100%	100%	100%
Cedar Cr	100%	100%	100%	100%	100%	100%	100%
Fifteenmile Cr-14	100%	100%	100%	100%	100%	100%	100%
Fifteenmile Cr-15	100%	100%			100%	100%	100%
Fifteenmile Cr-16	100%	100%	100%	100%	100%	100%	100%

Red indicates less than 40% viable life histories.

Orange indicates 41%-79% viable life histories.

Green indicates 80% or more viable life histories.

Appendices

**Table F2. Percentage of Viable Life Histories in the Current Condition by Smolt Age and Migrant or Resident Life History Pattern**

	Migrant Life Histories			Resident Life Histories			AVERAGE
	Age 1 Smolts	Age 2 Smolts	Age 3+ Smolts	Age 1 Smolts	Age 2 Smolts	Age 3+ Smolts	
Fifteenmile Cr-3	0%	0%	0%	0%	0%	0%	0%
Eightmile Cr-1	0%			0%	0%	0%	0%
Fivemile Cr-1	0%	0%	0%	0%	0%	0%	0%
Fivemile Cr-2	0%	0%	0%	0%	0%	0%	0%
Fivemile Cr-3	0%	0%	0%	0%	0%	0%	0%
Fivemile Cr-4	89%	33%		100%	52%	0%	55%
Fivemile Cr SF-1	100%	88%		100%	90%	0%	76%
Fivemile Cr MF-1	100%	98%	63%	100%	96%	100%	93%
Fivemile Cr MF-3	0%	0%	0%	0%	0%	0%	0%
Eightmile Cr-2	0%	0%	0%	0%	0%	0%	0%
Eightmile Cr-3	0%	0%	0%	0%	0%	0%	0%
Eightmile Cr-4	0%	0%	0%	0%	0%	0%	0%
Eightmile Cr-5	0%	0%	0%	0%	0%	0%	0%
Eightmile Cr-6	0%	0%	0%	0%	0%	0%	0%
Eightmile Cr-7	100%	83%	28%	100%	77%	100%	81%
Eightmile Cr-8	100%	99%	44%	100%	89%	100%	89%
Eightmile Cr-9	100%	100%	0%	100%	87%	100%	81%
Eightmile Cr-10	100%	100%	83%	100%	98%	100%	97%
Eightmile Cr-12	100%	100%	50%	100%			88%
Eightmile Cr-14	0%	0%	0%	0%	0%	0%	0%
Fifteenmile Cr-4	0%	0%	0%	0%	0%	0%	0%
Fifteenmile Cr-5	0%	0%	0%	0%	0%	0%	0%
Fifteenmile Cr-6	0%	0%	0%	0%	0%	0%	0%
Dry Cr-1	0%	0%	0%	0%	0%	0%	0%
Dry Cr-2	0%	0%	0%	0%	0%	0%	0%
Fifteenmile Cr-7	10%	0%	0%	0%	3%	0%	2%
Fifteenmile Cr-8	30%	0%	0%	47%	7%	0%	14%
Ramsey Cr-1	100%	5%	0%	63%	25%	0%	32%
Ramsey Cr-2	100%	13%	0%	100%	32%	50%	49%
Ramsey Cr-3	100%	100%	0%	100%	85%	100%	81%
Ramsey Cr-4	100%	100%	75%	100%	93%	100%	95%
Ramsey Cr-6	100%	80%		100%	80%	100%	92%
Ramsey Cr-8	0%	0%	0%	0%	0%	0%	0%
Fifteenmile Cr-9	95%	72%	0%	100%	63%	92%	70%
Fifteenmile Cr-10	100%	100%	100%	100%		100%	100%
Fifteenmile Cr-11	100%	90%	0%	100%	82%	100%	79%
Fifteenmile Cr-12	100%	100%	88%	100%	95%	100%	97%
Fifteenmile Cr-13	100%	100%	50%	100%	91%	100%	90%
Cedar Cr	100%	100%	100%	100%	100%	100%	100%
Fifteenmile Cr-14	100%	100%	50%	100%	96%	100%	91%
Fifteenmile Cr-15	100%	100%				100%	100%
Fifteenmile Cr-16	100%	100%	100%	100%	100%	100%	100%

Red indicates less than 40% viable life histories.

Orange indicates 41%-79% viable life histories.

Green indicates 80% or more viable life histories.

## G. Assumptions used in Restoration Scenarios

As described in the Fifteenmile Subbasin Assessment, a series of restoration scenarios were used to model the effects of restoring habitat in the Fifteenmile Subbasin. These scenarios were based on fourteen separate actions, each of them described using the EDT Scenario Builder.

The Scenario Builder starts by comparing the template (presettlement) and current conditions for each of the 46 environmental attributes that serve as input for EDT. When modeling a particular restoration action, the modeler makes an assumption regarding the extent to which that action will RESTORE each environmental attribute from the current to the template condition. For example: A particular reach has an irrigation diversion that withdraws 80% of the flow. The template condition for “Changes to Low Flows” is rated as “2”, meaning natural flow, whereas the current condition is rated as “4”, meaning significant withdrawal of water. If the modeler wants to model the effect of reducing a water withdrawal by 30% through irrigation conveyance efficiency, then she would input “30%” to the “Changes in Low Flows” parameter. The scenario condition would then become “3.4”—i.e. 30% recovered from current toward template. Negative values imply degradation of a resource.

<b>Modeled Restoration Action</b>	<b>Effectiveness Assumptions</b>	<b>Affects These Reaches</b>
1) 100% Restoration—thought experiment only	ALL PARAMETERS: 100%	ALL REACHES
2) No-till—Convert all cropland acres to no-till	High Flows: 40% Low Flows: 10% Intra-annual Flow Pattern: 50% Embeddedness: 50% Fine Sediment: 50% Turbidity: 50% Nutrient Enrichment: 20% Max Temp: 10% Temp—spatial variation: 10%	Fifteenmile 1-9 Eightmile 1-7 Fivemile 1-3 Dry Creek 1-2 Ramsey Creek 1-3
3) Restore Low Flows to Presettlement condition—thought experiment only	Low Flows: 100% Dissolved oxygen: 100% Metals in sediments: 100% Misc. toxics: 80% Max Temp: 90% Temp—spatial variation: 90%	ALL REACHES

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<b>Modeled Restoration Action</b>	<b>Effectiveness Assumptions</b>	<b>Affects These Reaches</b>
4) Riparian Buffers- put all private streams in buffer system wide enough to restore floodplain function	Intra-annual Flow Pattern: 20% Channel Length: 70% Channel Max Width: 100% Gradient: 70% Confinement Hydromodifications: 70% Riparian Function: 100% Wood: 80% Embeddedness: 50% Fine Sediment: 20% Turbidity: 60% Dissolved Oxygen: 40% Metals in water: 60% Metals in sediment: 60% Misc. Toxics: 60% Nutrient Enrichment: 50% Max Temp: 40% Temp—spatial variation: 40% Harassment: 20%	Fifteenmile 3-9 Eightmile 1-9 Fivemile 1-4 Dry Creek 1-2 Ramsey Creek 1-3
5) Riverkeeper: Restore Fifteenmile 9-11 with large wood, fix up ditch	Low Flows: 50% Channel Length: 100% Channel Width Max: 100% Gradient: 100% Confinement—hydromodifications: 100% Habitat types: 100% Riparian Function: 100% Wood: 100%	Fifteenmile 9-11
6) Strategic Large Wood Placements: Place large wood in stream in priority reaches	Channel Length: 70% Channel Width Max: 70% Gradient: 70% Confinement—hydromodifications: 70% Habitat types: 100% Riparian Function: 70% Wood: 100%	Fifteenmile 4-9 Eightmile 6, 8 Fivemile 1, 3, 4
7) 50% Low Flow Restoration	Low Flows: 50% Dissolved Oxygen: 50% Metals in sediments: 40% Misc. Toxics: 40% Nutrient Enrichment: 40% Max Temp: 45% Temp—spatial variation: 45%	ALL REACHES
8) Remove obstruction at Fivemile MF2	Improve passage survival by 100%	Fivemile MF-2

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<b>Modeled Restoration Action</b>	<b>Effectiveness Assumptions</b>	<b>Affects These Reaches</b>
9) Remove obstruction at Eightmile 11	Improve passage survival by 100%	Eightmile 11
10) Remove obstruction at Eightmile 13	Improve passage survival by 100%	Eightmile 13
11) Remove obstruction at Ramsey 5	Improve passage survival by 100%	Ramsey 5
12) Remove Ramsey 7	Improve passage survival by 100%	Ramsey 7
13) Orchard Ridge Ditch Blowout: Streambank erosion undercuts Orchard Ridge Ditch, causing diverted water to flow back into creek over steep cutbank.	Low Flows: 90% Embeddedness: -100% Fine Sediment: -100% Turbidity: -100% Max Temp: 90%	Fifteenmile 9-11

## H. Reach Definitions used in the Qualitative Habitat Assessment

Watershed	Reach name	Comment	Length
Chenowith	Chenoweth Cr.-1	from top of Bonneville Pool to the animal control shelter--this reach is wetland area braided channels. Jennifer Clark has seen steelhead spawning at low pool. Beaver activity.	155.111
Chenowith	Chenoweth Cr.-2	from top of wetland at Animal Control Shelter to HWY 84 crossing (concrete box culvert--not a passage problem--low gradient)	393.218
Chenowith	Chenoweth Cr.-3	from HWY 84 box culvert to HWY 30 crossing (bridge). This reach is heavily impacted by grazing and organic contaminants. Creek is recently fenced (2003).	393.218
Chenowith	Chenoweth Cr.-4	from HWY 30 crossing to 10th Street crossing (bridge). This is an urban reach residential on south side pasture on north. Channelized moderately constrained.	1129.695
Chenowith	Chenoweth Cr.-5	from 10th Street bridge to Brown's Creek. Creek is seasonally dry above this tributary.	3526.008
Fifteenmile	Deadman Gulch	from mouth at Fifteenmile Cr. to 3200' contour	894.341
Fifteenmile	Fivemile North Fork 1		87.155
Fifteenmile	Fivemile North Fork 2		1.598
Fifteenmile	Fivemile North Fork 3		6805.387
Fifteenmile	Japanese Hollow	from mouth at Eightmile Cr. to springs at trib on south border of section 9 (1200' contour)	7153.727
Fifteenmile	Pine Cr.-1	from mouth at Fifteenmile Cr. to Hwy 197 crossing (bridge)	1490.708
Fifteenmile	Pine Cr.-2	from Hwy 197 bridge to point where Pine Creek turns southwest from road at 1480' contour.	2644.599
Fifteenmile	Pine Cr.-3	from point where Pine Cr. turns southwest from Hwy 197 to Larch Creek	5498.658
Fifteenmile	Rail Hollow	from mouth at Eightmile Creek to first trib junction (.2 miles upstream from mouth)	328.708



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<b>Watershed</b>	<b>Reach name</b>	<b>Comment</b>	<b>Length</b>
Mill	Alder Cr.	from confluence with Crow Cr. to upper end of cutthroat distribution at 3280' contour	2982.74
Mill	Crow Cr.-1	reach inside Crow Creek reservoir from confluence with SF Mill Creek to edge of reservoir. (this stream called Alder Cr. in GIS 100K hydro layer)	312.611
Mill	Crow Cr.-2	from edge of Crow Cr. reservoir to Alder Cr. (this stream called 'Alder Creek' in 100k Gis hydro layer)	625.24
Mill	Crow Cr.-3	from Alder Creek to end of cutthroat distribution	5938.011
Mill	Mill Cr. NF unnamed trib #1	from mouth at NF Mill Creek to elevation between 3840' and 3880' contours at section 14 boundary (24K reach)	1045.01
Mill	Mill Cr. NF unnamed trib #2	from mouth at NF Mill Creek near headwaters to elevation just below the 3840' contour at Gibson Prairie in section 14 (24K reach)	400.317
Mill	Mill Cr. NF-01	Mouth at Mill Creek to 1560' contour (based on downstream end of confined reach)	5902.79
Mill	Mill Cr. NF-02	From 1560' contour line to 1680' contour line (reach confined by hillslope and road).	610.734
Mill	Mill Cr. NF-03	From 1680' contour to 1880-ish' contour line (in section 35 upper road crossing)	1893.442
Mill	Mill Cr. NF-04	From 1880'-ish contour to FS Rd 1711-630 at culvert barrier (close to the end of anadromous distribution)	7365.895
Mill	Mill Cr. NF-05	culvert barrier at FS Rd 1711-630	1.611
Mill	Mill Cr. NF-06	from culvert barrier at FS Rd 1711-630 to partial barrier culvert near unnamed trib just below the 3800' contour	3948.022
Mill	Mill Cr. NF-07	partial barrier--seasonal--culvert in section 14 just below southern-most unnamed trib	1.611
Mill	Mill Cr. NF-08	from partial barrier culvert just below southern-most unnamed trib to southern-most unnamed trib just below 3800' contour	35.452
Mill	Mill Cr. NF-09	from unnamed trib just below 3800' contour to culvert barrier between the two unnamed tribs at the headwaters at Gibson Prairie	264.276

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<b>Watershed</b>	<b>Reach name</b>	<b>Comment</b>	<b>Length</b>
Mill	Mill Cr. NF-10	culvert barrier--no fish passage--between unnamed tribs at N Fk Mill Creek headwaters	1.611
Mill	Mill Cr. NF-11	from culvert barrier to unnamed trib at headwaters to Gibson Prairie (Gary Asbridge has observed cutthroat here)	402.858
Mill	Mill Cr. NF-12	from unnamed trib near N Fk Mill headwaters to absolute headwaters of N Fk Mill (Gary Asbridge has observed cutthroat here)	611.116
Mill	Mill Cr. SF unnamed trib #1		359.963
Mill	Mill Cr. SF unnamed trib #2	from mouth at SF Mill Cr. to end of cutthroat distribution near 3560' contour	389.946
Mill	Mill Cr. SF unnamed trib #3		837.863
Mill	Mill Cr. SF unnamed trib #4	from mouth at SF Mill Cr. to end of cutthroat distribution at headwaters (100k)	1400.329
Mill	Mill Cr. SF-01	from mouth at fork with mainstem Mill Cr. to Wicks Water Treatment Plant (diversion with ladder and screen)	1408.451
Mill	Mill Cr. SF-02	Wicks Water Treatment Plant diversion with screen and ladder	1.612
Mill	Mill Cr. SF-03	from Wicks Water Treatment Plant to Mill Creek Falls	3424.44
Mill	Mill Cr. SF-04	Mill Creek Falls #53171--barrier to anadromy	1.611
Mill	Mill Cr. SF-05	from Mill Creek Falls to trib in section 12 where SF Mill Creek flows into the canyon.	4031.91
Mill	Mill Cr. SF-06	from canyon entrance to Crow Creek Reservoir Dam.	7480.228
Mill	Mill Cr. SF-07	Crow Creek Reservoir Dam #50277	1.611
Mill	Mill Cr. SF-08	reach inside Crow Creek Reservoir--from dam to Crow Cr. trib	327.103
Mill	Mill Cr. SF-09	reach through Crow Creek reservoir from confluence with Crow Creek to edge of reservoir at 2560' contour.	285.228

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<b>Watershed</b>	<b>Reach name</b>	<b>Comment</b>	<b>Length</b>
Mill	Mill Cr. SF-10	from edge of Crow Creek reservoir at 2560' contour to unnamed 24k trib in section 36 near 3360' contour	4797.263
Mill	Mill Cr. SF-11	from unnamed 24k trib at 3360' to unnamed 100K trib at contour near 3440' contour	457.648
Mill	Mill Cr. SF-12	from unnamed trib #2 at 3440' contour to unnamed trib at 3560' contour	578.488
Mill	Mill Cr. SF-13	from unnamed trib #3 to unnamed trib #4 at 3600' contour.	338.392
Mill	Mill Cr. SF-14	from unnamed trib #4 to end of cutthroat distribution.	1055.47
Mill	Mill Cr. -01	800 foot culvert from mouth to west 2nd street	265.511
Mill	Mill Cr.-02	from box culvert (24K) to Honnald diversion at southwest edge to Ericksen's Addition.	2573.681
Mill	Mill Cr.-03	from Honnald diversion at southwest edge of Ericksen's Addition to North/South Mill creek forks.	9712.548
Mosier	Honeysuckle Cr.-1	from mouth at Mosier Creek to Lucky Canyon. Moderately low gradient great habitat (Steve Pribyl). Perennial.	1228.206
Mosier	Honeysuckle Cr.-2	from Lucky Canyon to end of fish at road crossing near southern boundary of section 6. (100K hydro calls this creek Ladore).	538.222
Mosier	Indian Cr.-1	from mouth at Mosier Creek to first road crossing (logging road) culvert. Steep narrowly confined channel. Perennial.	1941.797
Mosier	Lucky Canyon-1	from confluence with Honeysuckle to end of fish/perennial water at southern boundary of section 6.	815.426
Mosier	McVey Spring-1	from mouth at Mosier Creek to first tributary. Fish bearing (cutt most likely).	199.821
Mosier	Mosier Cr. unnamed trib-1	from mouth at Mosier Creek to gradient break at 2800' contour in section 27. Moderately steep gradient (4-8%) very confined.	1742
Mosier	Mosier Cr. unnamed trib-2	from gradient break at 2800' contour to lower end of wetland/marsh near border of sections 32/33. Moderate gradient (2-4%).	2679.877

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<b>Watershed</b>	<b>Reach name</b>	<b>Comment</b>	<b>Length</b>
Mosier	Mosier Cr. unnamed trib-3	reach through wetland/marsh at headwaters of unnamed trib to Mosier Creek in section 32	934.694
Mosier	Mosier Cr. WF-01	from confluence with mainstem to unnamed trib in center of section 26. Gradient levels out here.	4033.493
Mosier	Mosier Cr. WF-02	from unnamed trib at center of section 26 to Snyder Canyon. This reach is moderately constrained with 2-4% gradient (channel steep below this reach). Best habitat above falls.	625.243
Mosier	Mosier Cr. WF-03	from Snyder Canyon to Baker Canyon. Constrained 2-4% gradient.	1316.569
Mosier	Mosier Cr. WF-04	from Baker Canyon to end of cutthroat distribution at unnamed trib in center of section 10.	3727.327
Mosier	Mosier Cr.-01	from mouth at Columbia R. to HWY 30 high bridge. This reach is single channel beaver activity somewhat impacted by Bonneville Pool (sediment) coho and steelhead spawning.	167.588
Mosier	Mosier Cr.-02	from HWY 30 bridge to first bend near the cemetery. This reach is braided channel wetland active beaver population unconstrained wide flood plain.	162.754
Mosier	Mosier Cr.-03	from bend near cemetery to Pocket Falls. This reach is semi-constrained--narrow canyon with good vegetation in bottom.	293.28
Mosier	Mosier Cr.-04	Pocket Falls--about 50' in height anadromy ends here cutthroat above falls.	1.611
Mosier	Mosier Cr.-05	from Pocket Falls to confluence with West Fork Mosier. This reach dominated by gravel and bedrock generally medium gradient. Cutthroat distribution.	4450.895
Mosier	Mosier Cr.-06	from confluence with West Fork Mosier to Mosier Creek Road crossing (bridge) at section 30/31 boundary. moderate gradient moderately confined hydric soils in flood plain.	3248.737
Mosier	Mosier Cr.-07	From bridge crossing at Mosier Creek Road at section 30/31 boundary to Honeysuckle Creek. moderate gradient confined.	1937.042

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<b>Watershed</b>	<b>Reach name</b>	<b>Comment</b>	<b>Length</b>
Mosier	Mosier Cr.-08	from Honeysuckle Creek to culvert at Mosier Creek road crossing in section 1.	773.524
Mosier	Mosier Cr.-09	partial jump barrier culvert at Mosier Creek Road crossing in section 1.	1.611
Mosier	Mosier Cr.-10	from culvert at Mosier Creek road crossing in section 1 to Indian Creek. Moderate gradient some confined some unconfined.	3803.068
Mosier	Mosier Cr.-11	from Indian Creek to McVey Spring.	1173.152
Mosier	Mosier Cr.-12	from McVey Spring to unnamed trib at west side of section 23. moderately steep gradient (4-8%) V-shaped channel.	1364.962
Mosier	Mosier Cr.-13	from unnamed trib in section 23 to seasonally dry ford/subterranean flow where four section corners meet, 27-26-34-35	2436.55
Mosier	Mosier Cr.-14	from seasonally dry ford at four corners to Ketchum Reservoir Road crossing. Doug Thiesies ODF has information on this road crossing.	1651.728
Mosier	Mosier Cr.-15	from road crossing at Ketchum Reservoir Road to Mt Hood NF boundary at south boundary of section 33. Verified no fish above this point on Mosier Creek.	1044.214
Rock	Campbell Cr.-1	from mouth at Rock Creek to Proctor Road crossing (small culvert).	388.354
Rock	Rock Cr.-1	from mouth at Columbia River to quarry just above the Historic HWY 30. This reach is subterranean due to quarry activity but is under rehab currently (2003--riparian project).	328.741
Rock	Rock Cr.-2	Through quarry. Stream highly channelized and rip-rapped	680.864
Rock	Rock Cr.-2.5	from upper end of quarry to Campbell Creek. Moderately-to-tightly confined 2-4% gradient.	774.249
Rock	Rock Cr.-3	from Campbell Creek to falls barrier at approximate center of section 10.	1443.871
Rock	Rock Cr.-4	Falls barrier approximately 2.5 mi from mouth in section 10. The definite location of this anadromous barrier is unknown.	1.611
Rock	Rock Cr.-5	from falls barrier in section 10 to gradient change in section 28 near the 1560' contour. Gradient is from 4-8%.	5912.445

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<b>Watershed</b>	<b>Reach name</b>	<b>Comment</b>	<b>Length</b>
Rock	Rock Cr.-6	from gradient change at 1560' contour in section 28 to forks with unnamed trib in section 5 at the 2000' contour. Gradient is 2-4%.	3313.197
Threemile	Threemile Cr.-01	from mouth at Columbia to HWY 84 crossing--2 6'x6' concrete box culverts may be partial barriers at times (high flow). Wetland reach.	147.884
Threemile	Threemile Cr.-02	2 culverts--6' x 6' concrete boxes at HWY 84 crossing partial barriers especially at high flow. Downstream end has been excavated. ODOT plans to excavate upstream as well--ongoing maintenance issue. Juvenile coho above culvert (Steve Pribyl).	1.612
Threemile	Threemile Cr.-03	from HWY 84 double culvert to old highway crossing culvert. No passage information on this culvert.	299.755
Threemile	Threemile Cr.-04	from old highway crossing to HWY 197 interchange. This reach is channelized--paved parking lots on either side.	117.646
Threemile	Threemile Cr.-05	culvert barrier at HWY 197 interchange--currently being upgraded (summer 2003); replacing both culverts with open-bottom arch.	1.612
Threemile	Threemile Cr.-06	from HWY 197 interchange to HWY 197 culvert--reach is confined by highway	257.854
Threemile	Threemile Cr.-07	first HWY 197 culvert--concrete box most likely gradient barrier	1.612
Threemile	Threemile Cr.-08	from first HWY 197 culvert to second HWY 197 culvert--reach constrained by highway	322.318
Threemile	Threemile Cr.-09	second HWY 197 culvert--concrete box culvert gradient barrier	1.611
Threemile	Threemile Cr.-10	from second HWY 197 culvert to Old Dufur Highway crossing (slope break)--culvert here unknown passage	900.881
Threemile	Threemile Cr.-11	from Old Dufur Highway crossing to Haener's driveway crossing in section 45	4535.005
Threemile	Threemile Cr.-12	Haener's driveway crossing--passage barrier since 1996 flood. Stabilized headcut with rock 10-20' jump (?)	1.611

Appendices

# I. Qualitative Habitat Assessment for Resident Trout (Cutthroat and Rainbow)

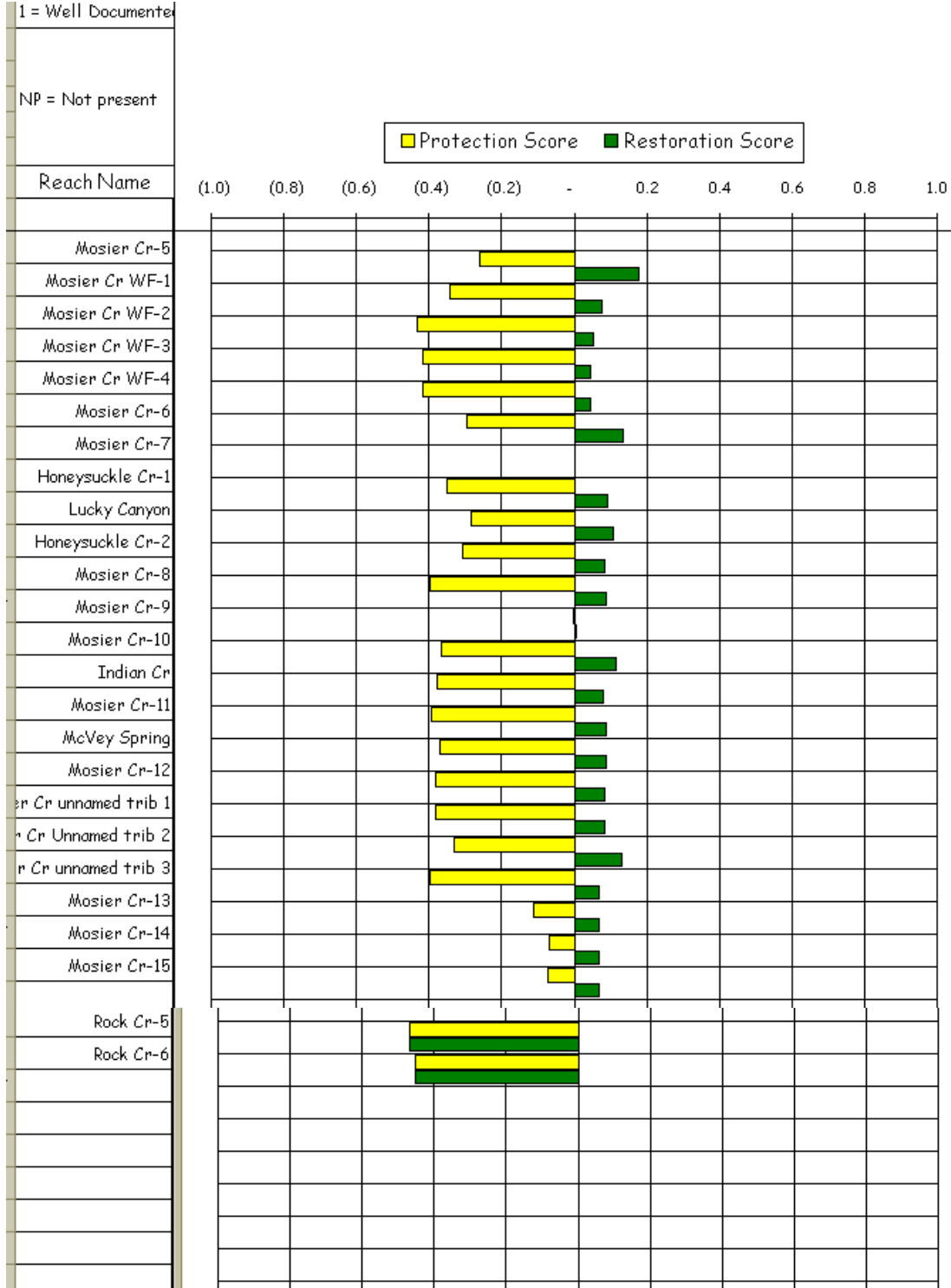
Qualitative Habitat Assessment (QHA) was used to rank the restoration and protection priorities of the resident fish streams in the Fifteenmile Subbasin.

**Table I.1. Input values for streams above anadromous barriers**

Reach Name	Scoring		Describe the natural physical condition of the stream													
	Confidence Rating	Attribute Rating	Stream Name: O													
Definition:			Describe the current condition for this stream in regard to the <b>physical conditions</b> relative to this ecological province.													
0 = Specu	0 = 0% of normative															
1 = Expert	1 = 25% of normative															
2 = Well D	2 = 50% of normative															
3 = 75% of normative	3 = 75% of normative															
Attribute Confidence			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Attribute Toggle			1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Not Rated	Riparian Condition	Channel stability	Habitat Diversity	Fine sediment	High Flow	Low Flow	Oxygen	Low Temperature	High Temperature	Pollutants	Obstructions				
Mosier Cr-5		2.0	2.0	1.5	2.0	3.0	2.0	4.0	4.0	2.5	2.0	3.0				
Mosier Cr WF-1		3.0	3.0	3.0	3.0	3.5	3.0	4.0	4.0	3.5	3.5	3.5				
Mosier Cr WF-2		3.5	3.5	3.5	3.0	3.5	3.5	4.0	4.0	3.5	3.5	4.0				
Mosier Cr WF-3		3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	3.5	3.5	4.0				
Mosier Cr WF-4		3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	3.5	3.5	3.5				
Mosier Cr-6		2.5	2.0	2.5	2.5	3.0	2.0	4.0	4.0	3.0	3.0	3.0				
Mosier Cr-7		3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	3.0	3.5	3.5				
Honeysuckle Cr-1		2.5	3.0	2.5	2.5	3.0	3.0	4.0	4.0	3.0	3.5	4.0				
Lucky Canyon		2.5	2.0	2.0	2.0	3.0	3.0	4.0	4.0	3.0	3.5	4.0				
Honeysuckle Cr-2		2.5	3.0	2.5	2.5	3.0	3.0	4.0	4.0	3.0	3.5	4.0				
Mosier Cr-8		3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	3.0	3.5	3.5				
Mosier Cr-9												1.0				
Mosier Cr-10		2.5	2.5	2.0	2.5	3.0	3.0	4.0	4.0	3.0	3.5	3.5				
Indian Cr		3.0	3.0	3.0	2.5	3.0	3.0	4.0	4.0	3.5	3.5	2.0				
Mosier Cr-11		3.0	3.0	3.0	2.5	3.0	3.0	4.0	4.0	3.5	3.5	2.0				
McVey Spring		2.5	3.0	2.5	2.5	3.0	3.0	4.0	4.0	3.5	3.5	4.0				
Mosier Cr-12		3.0	3.0	3.0	2.5	3.0	3.0	4.0	4.0	3.5	3.5	4.0				
Mosier Cr unnamed trib 1		3.0	3.0	3.0	2.5	3.0	3.0	4.0	4.0	3.5	3.5	4.0				
Mosier Cr Unnamed trib 2		2.0	2.0	2.0	2.5	2.5	3.0	4.0	4.0	3.0	3.5	2.0				
Mosier Cr unnamed trib 3		3.5	3.5	3.0	3.0	3.0	3.0	4.0	4.0	3.5	3.5	4.0				
Mosier Cr-13		2.5	2.5	2.5	3.0	3.0	3.0	4.0	4.0	3.5	3.5	4.0				
Mosier Cr-14		2.5	2.5	2.5	3.0	3.0	3.0	4.0	4.0	3.5	3.5	2.0				
Mosier Cr-15		2.5	2.5	2.5	3.0	3.0	3.0	4.0	4.0	3.5	3.5	4.0				
Rock Cr-5		3.5	4.0	4.0	4.0	4.0	3.5	4.0	4.0	3.5	4.0	3.5				
Rock Cr-6		3.0	4.0	4.0	4.0	4.0	2.5	4.0	4.0	3.5	4.0	3.5				
Mill Cr SF-5		4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0				
Mill Cr SF-6		4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0				
Crow Cr-2		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Alder Cr		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5				
Crow Cr-3		3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Mill Cr SF-10		3.5	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0				
Mill Cr SF unnamed tributary #1		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5				
Mill Cr SF-11		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5				
Mill Cr SF unnamed tributary #2		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Mill Cr SF-12		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Mill Cr SF unnamed tributary #3		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Mill Cr SF-13		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Mill Cr SF unnamed tributary #4		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Mill Cr SF-14		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				

Appendices

**Table I.2. Restoration and Protection Priorities for Steelhead in Fifteenmile Subbasin outside of Fifteenmile Watershed.**





Appendices

Table I.2. cont.

Mill Cr SF-5								
Mill Cr SF-6								
Mill Cr SF-7								
Mill Cr SF-8								
Crow Cr-1								
Crow Cr-2								
Alder Cr								
Crow Cr-3								
Mill Cr SF-9								
Mill Cr SF-10								
named tributary #1								
Mill Cr SF-11								
named tributary #2								
Mill Cr SF-12								
named tributary #3								
Mill Cr SF-13								
named tributary #4								
Mill Cr SF-14								

Appendices

## J. Qualitative Habitat Assessment: Steelhead

Qualitative Habitat Assessment (QHA) was used to rank the restoration and protection priorities of the steelhead streams in the Fifteenmile Subbasin outside of the Fifteenmile Watershed.

**Table J.1. Input values for steelhead streams**

Reach Name	Scoring		Describe the natural physical condition of the stream											
	Confidence Rating	Attribute Rating	Stream Name:	Steelhead										
0 = Speculative			Describe the current condition for this stream in regard to the <b>physical conditions</b> relative to the optimum in this ecological province.											
1 = Expert														
2 = Well Documented														
3 = 75% of normative														
Definition: normative														
Attribute Confidence			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Attribute Toggle			1	1	1	1	1	1	1	1	1	1	1	1
	Not Rated	Riparian Condition	Channel stability	Habitat Diversity	Fine sediment	High Flow	Low Flow	Oxygen	Low Temperature	High Temperature	Pollutants	Obstructions		
Mosier Cr-1		1.5	3.0	1.5	2.0	3.0	2.0	4.0	4.0	2.5	2.0	4.0		
Mosier Cr-2		2.5	3.0	2.0	2.5	3.0	2.0	4.0	4.0	2.5	2.0	4.0		
Mosier Cr-3		3.0	4.0	3.0	2.5	3.0	2.0	4.0	4.0	2.5	2.0	4.0		
Mosier Cr-4														
Rock Cr-1		0.5	0.5	0.5	4.0	4.0	0.5	4.0	4.0	3.0	3.5	2.0		
Rock Cr-2		0.5	0.5	0.5	4.0	4.0	1.0	4.0	4.0	3.0	4.0	2.0		
Rock Cr-2.5		3.0	3.0	3.0	4.0	4.0	3.5	4.0	4.0	3.0	4.0	4.0		
Campbell Cr		4.0	3.5	3.5	3.0	4.0	2.0	4.0	4.0	3.0	4.0	4.0		
Rock Cr-3		3.5	4.0	4.0	4.0	4.0	3.5	4.0	4.0	3.5	4.0	4.0		
Rock Cr-4														0.0
Threemile Cr-1		2.5	2.5	2.5	0.5	0.5	1.0	4.0	4.0	1.0	3.0	4.0		
Threemile Cr-2														1.0
Threemile Cr-3		2.5	2.5	2.5	0.5	3.5	1.0	4.0	4.0	1.0	3.0	4.0		
Threemile Cr-4		0.5	0.5	0.5	2.0	3.5	1.0	4.0	4.0	1.0	3.0	4.0		
Threemile Cr-5														3.5
Threemile Cr-6		2.5	2.0	2.5	2.0	3.5	1.0	4.0	4.0	1.0	3.5	3.5		
Threemile Cr-7														2.0
Threemile Cr-8		2.5	2.0	2.5	2.0	3.5	1.0	4.0	4.0	1.0	3.5	3.5		
Threemile Cr-9														2.0
Threemile Cr-10		2.5	2.0	2.5	2.0	3.5	1.0	4.0	4.0	1.0	3.5	3.5		
Threemile Cr-11		1.5	1.5	1.5	2.5	3.5	1.0	4.0	4.0	1.0	3.0	2.5		
Threemile Cr-12														0.0
Chenoweth Cr-1		3.0	3.5	3.0	3.5	4.0	3.0	4.0	4.0	2.0	3.0	4.0		
Chenoweth Cr-2		3.0	3.5	3.0	3.5	4.0	3.0	4.0	4.0	2.0	3.0	4.0		
Chenoweth Cr-3		2.5	2.5	3.0	3.5	4.0	3.0	4.0	4.0	2.0	3.0	4.0		
Chenoweth Cr-4		2.5	2.5	2.5	3.5	4.0	3.0	4.0	4.0	2.0	3.0	4.0		
Chenoweth Cr-5		3.5	3.5	3.0	4.0	4.0	3.0	4.0	4.0	2.0	3.0	4.0		
Mill Cr-1		0.0	0.0	0.0	3.0	3.0	2.5	4.0	4.0	2.0	2.0	2.5		
Mill Cr-2		1.0	1.5	1.5	3.0	3.0	2.5	4.0	4.0	2.0	2.0	1.5		

## Appendices

**Table J.1. continued.**

Mill Cr-3			1.5	1.5	1.5	3.0	3.5	2.5	4.0	4.0	2.0	2.0	3.0
Mill Cr SF-1			2.5	2.0	2.0	3.5	3.0	1.5	4.0	4.0	2.0	4.0	3.5
Mill Cr SF-2													3.5
Mill Cr SF-3			3.5	3.5	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
Mill Cr SF-4													
Mill Cr NF-1			3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	3.0	3.5
Mill Cr NF-2			1.5	2.0	2.0	2.0	4.0	4.0	4.0	4.0	4.0	3.5	4.0
Mill Cr NF-3			3.0	3.5	3.5	1.5	4.0	4.0	4.0	4.0	4.0	3.5	4.0
Mill Cr NF-4			4.0	4.0	4.0	3.5	4.0	4.0	4.0	4.0	4.0	4.0	3.0
Mill Cr NF-5													1.0
Mill Cr NF-6			3.0	4.0	3.5	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Mill Cr NF-7													2.0
Mill Cr NF-8			2.5	3.0	3.0	2.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Mill Cr NF unnamed tributary #1			2.5	3.0	3.0	2.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Mill Cr NF-9			2.5	2.5	2.5	2.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Mill Cr NF-10													0.0
Mill Cr NF-11			2.5	2.5	2.5	2.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Mill Cr NF unnamed tributary #2			2.5	2.5	2.5	2.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Mill Cr NF-12			2.5	2.5	2.5	2.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Pine Cr-1			0.5	1.0	1.0	2.0	3.5	2.0	4.0	4.0	2.0	3.0	4.0
Pine Cr-2			0.5	1.0	1.0	2.0	3.5	2.0	4.0	4.0	2.0	3.0	3.5
Pine Cr-3			3.0	3.0	2.0	3.0	3.5	2.0	4.0	4.0	2.0	4.0	4.0
Japanese Hollow			0.5	1.0	1.0	1.0	1.5	1.5	4.0	4.0	1.5	3.5	4.0
Fivemile Cr NF-1			2.0	3.0	1.5	3.0	4.0	1.5	4.0	4.0	3.0	4.0	4.0
Fivemile Cr NF-2													1.0
Fivemile Cr NF-3			2.0	3.0	1.5	3.0	4.0	1.5	4.0	4.0	3.0	4.0	4.0
Rail Hollow			1.5	2.0	1.0	1.0	1.5	1.5	4.0	4.0	1.5	3.5	4.0
Deadman Gulch			3.0	3.0	3.0	3.0	4.0	2.0	4.0	4.0	4.0	4.0	4.0

## Appendices

**Table J.2. Restoration and Protection Priorities for Steelhead in Fifteenmile Subbasin outside of Fifteenmile Watershed.**

