

Workbook Info

Project: Expert Panel 2015-2016

Meeting: Wallowa-Imnaha Look Back

Primary Data Recorder: Nick Legg, Geomorphologist, Cardno Inc.

Latest Revision: 5/27/2016

Workbook Description

This workbook is the "Calculation Tables" used to capture completed actions and calculate functional uplift during the Wallowa-Imnaha Look Back Process on May 3-4, 2016. This table was created in support of the biological notes taken in the same meeting, and contained in the spreadsheets Wallowa_Chinook_HabFunctions2013-2018_LBLF_BioNotes_QA_05272016 and Wallowa_Steelhead_HabFunctions2013-2018_LBLF_BioNotes_QA_05272016. The biological notes spreadsheet also documents the

Filename: Wallowa_LookBack_CalcSpreadsheet_QA_052716

Sheets: Sheets are produced for individual Assessment Units and named by the Assessment Unit Code. When the panel identified no actions in an assessment unit, a sheet was generally not created.

Highlighting Key:
Yellow highlights require follow-up and additional data from the panel.

IRC1

Lower Imnaha Mainstem

Stream Miles Denominator used in Uplift
Calculation (in appropriate Limiting Factors)

36.3 mi

IRC1 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|--|---------------|--|---------------------------------|
| Marr Habitat (Planting, Bank Bioengineering, Side Channel Maintenance) | 0.07 | 100% | 0.07 |
| Total Project Length | 0.07 | | 0.07 |
| Total # Projects | 1 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0.07 | | 0.066287879 |
| Total Stream Miles (Denominator) | 36.3 mi. | | |
| % Uplift (2018) | 0.2% | | |

IRC1 - LF 8.1 (Water Quality: Temperature)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|--|---------------|--|---------------------------------|
| Marr Habitat (Planting, Bank Bioengineering, Side Channel Maintenance) | 0.07 | 0% | 0 |
| Total Project Length | 0.07 | | 0 |
| Total # Projects | 1 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 36.3 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRC1 - LF 8.2 (Water Quality: Oxygen)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 36.3 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRC1- LF 9.2 (Water Quantity: Decreased Water Quantity)

| <u>Action</u> | <u>Permanent Acquisition</u> | <u>Annual Amounts (cfs)</u> | | | |
|---------------|----------------------------------|-----------------------------|-------------|-------------|-------------|
| | | <u>2012</u> | <u>2013</u> | <u>2014</u> | <u>2015</u> |
| No Actions | | | | | |
| Total | 0 | 0 | 0 | 0 | 0 |

| | | | |
|------------------|---------|--------------------|-----|
| Total | 0.0 cfs | Annual Average ==> | 0.0 |
| Total # Projects | 1 | | |
| Denominator | cfs | Example: Base Flow | |
| % Uplift (2018) | #DIV/0! | | |

BSC1

Lower Big Sheep and Little Sheep Creeks

Stream Miles Denominator used in Uplift Calculation (in appropriate Limiting Factors)

22.2 mi

BSC1 - LF 1.1 (Anthropogenic Barriers)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| Big Sheep/Buhler Irrigation and Fish Passage Improvement (2012) | 10.5 | 33% | 3.465 |
| Total Project Length | 10.5 | | 3.465 |
| Total # Projects | 1 | | |
| Total Stream Miles Affected (Weighted for 2018) | 3.465 | | |
| Total Stream Miles (Denominator) | 22.2 mi. | | |
| % Uplift (2018) | 15.6% | | |

BSC1 - LF 2.1 (Injury and Mortality: Predation)

| <u>Action</u> | <u>Design Flow of Screen (cfs)</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (flow)</u> |
|---|--|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | | 0 | |
| Total Flow (Denominator) | | cfs | |
| % Uplift (2018) | #DIV/0! | | |

BSC1 - LF 3.1 (Food: Altered Primary Productivity)

| <u>Action</u> | <u>Design Flow of Screen (cfs)</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (flow)</u> |
|---|--|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Flow (Denominator) | cfs | | |
| % Uplift (2018) | #DIV/0! | | |

BSC1 - LF 4.1 (Riparian Vegetation)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 22.2 mi. | | |
| % Uplift (2018) | 0.0% | | |

BSC1 - LF 5.2 (Peripheral and Transitional Habitats: Floodplain Condition)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|--|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | | | 0 |
| Total # Projects | 0 | | |
| Total Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 22.2 mi. | | |
| % Uplift (2018) | 0.0% | | |

BSC1 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 22.2 mi. | | |
| % Uplift (2018) | 0.0% | | |

BSC1 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 22.2 mi. | | |
| % Uplift (2018) | 0.0% | | |

BSC1 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 22.2 mi. | | |
| % Uplift (2018) | 0.0% | | |

BSC1 - LF 8.1 (Water Quality: Temperature)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 22.2 mi. | | |
| % Uplift (2018) | 0.0% | | |

BSC1 - LF 8.2 (Water Quality: Oxygen)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 22.2 mi. | | |
| % Uplift (2018) | 0.0% | | |

BSC1 - LF 9.1 (Water Quantity: Increased Water Quantity)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|----------------------|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |

Total Stream Miles Affected (Weighted for 2018)
Total Stream Miles (Denominator)

0
22.2 mi.

% Uplift (2018)

0.0%

BSC1 - LF 9.2 (Water Quantity: Decreased Water Quantity)

| <u>Action</u> | <u>Permanent Acquisition</u> | <u>Annual Amounts (cfs)</u> | | | |
|---------------|----------------------------------|-----------------------------|-------------|-------------|-------------|
| | | <u>2012</u> | <u>2013</u> | <u>2014</u> | <u>2015</u> |
| No Actions | | | | | |
| Total | 0 | 0 | 0 | 0 | 0 |

Total

0.0 cfs

Annual Average ==>0.0

Total # Projects

#REF!

Denominator

cfs

% Uplift (2018)

#DIV/0!

Example: Base Flow

BSC2

Upper Big Sheep Creek

Stream Miles Denominator used in Uplift Calculation (in appropriate Limiting Factors)

18.8 mi

BSC2 - LF 1.1 (Anthropogenic Barriers)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|---|---------------|--|---------------------------------|
| Big Sheep/Buhler Irrigation and Fish Passage Improvement (2012) | 18.8 | 33% | 6.204 |
| Total Project Length | 18.8 | | 6.204 |
| Total # Projects | 1 | | |
| Total Stream Miles Affected (Weighted for 2018) | 6.204 | | |
| Total Stream Miles (Denominator) | 18.8 mi. | | |
| % Uplift (2018) | 33.0% | | |

BSC2 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|---|---------------|--|---------------------------------|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 18.8 mi. | | |
| % Uplift (2018) | 0.0% | | |

BSC2 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|------------|---------------|--|---------------------------------|
| No Actions | | | 0 |

| | | |
|---|---------------|---------------|
| Total Project Length | <div></div> 0 | <div></div> 0 |
| Total # Projects | 0 | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | |
| Total Stream Miles (Denominator) | 18.8 mi. | |
| % Uplift (2018) | 0.0% | |

BSC2 - LF 8.1 (Water Quality: Temperature)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | <div></div> 0 | | <div></div> 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 18.8 mi. | | |
| % Uplift (2018) | 0.0% | | |

BSC2 - LF 8.2 (Water Quality: Oxygen)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | <div></div> 0 | | <div></div> 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 18.8 mi. | | |
| % Uplift (2018) | 0.0% | | |

BSC2 - LF 9.2 (Water Quantity: Decreased Water Quantity)

Annual Amounts (cfs)

Action

No Actions

Total

Permanent
Acquisition

2012

2013

2014

2015

0

0

0

0

0

Annual Average ==>

0.0

Total

0.0 cfs

Total # Projects

#REF!

Denominator

cfs

Example: Base Flow

% Uplift (2018)

#DIV/0!

BSC3

Big Sheep Creek Tributaries

Stream Miles Denominator used in Uplift
Calculation (in appropriate Limiting Factors)6.8 mi

BSC3 - LF 1.1 (Anthropogenic Barriers)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|---|---------------|--|---------------------------------|
| Big Sheep/Buhler Irrigation and Fish Passage Improvement (2012) | 6.5 | 10% | 0.65 |
| Total Project Length | 6.5 | | 0.65 |
| Total # Projects | 1 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0.65 | | |
| Total Stream Miles (Denominator) | 6.8 mi. | | |
| % Uplift (2018) | 9.6% | | |

BSC3 - LF 5.2 (Peripheral and Transitional Habitats: Floodplain Condition)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|--|---------------|--|---------------------------------|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 6.8 mi. | | |
| % Uplift (2018) | 0.0% | | |

BSC3 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|--------|---------------|--|---------------------------------|
|--------|---------------|--|---------------------------------|

| | | |
|---|-------------|---|
| No Actions | | 0 |
| Total Project Length | 0 | 0 |
| Total # Projects | 0 | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | |
| Total Stream Miles (Denominator) | 6.8 mi. | |
| % Uplift (2018) | 0.0% | |

BSC3 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 6.8 mi. | | |
| % Uplift (2018) | 0.0% | | |

BSC3 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 6.8 mi. | | |
| % Uplift (2018) | 0.0% | | |

BSC3 - LF 8.2 (Water Quality: Oxygen)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 6.8 mi. | | |
| % Uplift (2018) | 0.0% | | |

WLC3 Upper Wallowas River (Dry Cr. To Wallowas Lake)

Stream Miles Denominator used in
Uplift Calculation (in appropriate
Limiting Factors) 36.6 mi

WLC3 - LF 1.1 (Anthropogenic Barriers)

| Action | Miles treated | 2018 % Improve ment (proratin g factor) | Realized Change in 2018 (mi) |
|---|------------------|---|------------------------------------|
| Trout Creek/Alpine Meadows Irrigation and Fish Pa | 2 | 0% | 0 |
| Wallowa River/Cross Country Canal Diversion Repla | 15 | 10% | 1.5 |
| Total Project Length | 17 | | 1.5 |
| Total # Projects | 2 | | |
| | | | |
| Total Stream Miles Affected (Weighted for 2018) | 1.5 | | |
| Total Stream Miles (Denominator) | 36.6 mi. | | |
| % Uplift (2018) | 4.1% | | |

WLC3 - LF 4.1 (Riparian Vegetation)

| Action | Miles treated | 2018 % Improve ment (proratin g factor) | Realized Change in 2018 (mi) |
|---|------------------|---|------------------------------------|
| Wallowa River - Six Ranch Restoration Project 2 (20 | 0.38 | 3% | 0.0114 |
| Total Project Length | 0.38 | | 0.0114 |
| Total # Projects | 1 | | |
| | | | |
| Total Stream Miles Affected (Weighted for 2018) | 0.0114 | | |
| Total Stream Miles (Denominator) | 36.6 mi. | | |
| % Uplift (2018) | 0.03% | | |

WLC3 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improve ment (proratin g factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| Wallowa River - Six Ranch Restoration Project 2 (20 | 0.38 | 75% | 0.285 |
| Total Project Length | 0.38 | | 0.285 |
| Total # Projects | 1 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0.285 | | |
| Total Stream Miles (Denominator) | 36.6 mi. | | |
| % Uplift (2018) | 0.8% | | |

WLC3 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improve ment (proratin g factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| Wallowa River - Six Ranch Restoration Project 2 (20 | 0.38 | 50% | 0.19 |
| Total Project Length | 0.38 | | 0.19 |
| Total # Projects | 1 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0.19 | | 350 |
| Total Stream Miles (Denominator) | 36.6 mi. | | 1800 5.4878049 63.77777778 |
| % Uplift (2018) | 0.5% | | 3.280839895 |

WLC3 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improve ment (proratin g factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| Wallowa River - Six Ranch Restoration Project 2 (20 | 0.38 | 60% | 0.228 |
| Wallowa River/Cross Country Canal Diversion Repla | 0.09 | 30% | 0.026 |
| Total Project Length | 0.47 | | 0.254 |
| Total # Projects | 0 | | |

Total Stream Miles Affected (Weighted for 2018) 0.25
Total Stream Miles (Denominator) 36.6 mi.

% Uplift (2018) 0.7%

WLC3 - LF 8.1 (Water Quality: Temperature)

| Action | Miles treated | 2018 % Improvement | | Realized Change in 2018 (mi) |
|---|---------------|-----------------------|--|------------------------------------|
| | | (prorating factor) | | |
| Trout Creek/Alpine Meadows Irrigation and Fish Pa | 2 | 0% | | 0 |
| Total Project Length | 2 | | | 0 |
| Total # Projects | 1 | | | |

Total Stream Miles Affected (Weighted for 2018) 0
Total Stream Miles (Denominator) 36.6 mi.

% Uplift (2018) 0.0%

WLC3 - LF 8.2 (Water Quality: Oxygen)

| Action | Miles treated | 2018 % Improvement | | Realized Change in 2018 (mi) |
|----------------------|---------------|-----------------------|--|------------------------------------|
| | | (prorating factor) | | |
| No Actions | | | | 0 |
| Total Project Length | 0 | | | 0 |
| Total # Projects | 0 | | | |

Total Stream Miles Affected (Weighted for 2018) 0
Total Stream Miles (Denominator) 36.6 mi.

% Uplift (2018) 0.0%

WLC3 - LF 9.2 (Water Quantity: Decreased Water Quantity)

| Action | Permanent Acquisition | Annual Amounts (cfs) | | | |
|--------|-----------------------|----------------------|------|------|------|
| | | 2012 | 2013 | 2014 | 2015 |

| | | | | | |
|---|----------|----------|----------|----------|----------|
| Trout Creek/Alpine Meadows Irrigation and Fish Passage (2013) | 1 | | 1 | 1 | 1 |
| Total | 1 | 0 | 1 | 1 | 1 |

| | | | |
|------------------|---------|-----------------------|-----|
| | | Annual | |
| | | Average ==> | 0.8 |
| Total | 0.8 cfs | | |
| Total # Projects | 1 | | |

| | | |
|-------------|---------|--|
| | | Estimate of mean daily flow in Wallowa River in August and September (critical period). |
| Denominator | 150 cfs | |

| | |
|------------------------|-------------|
| % Uplift (2018) | 0.5% |
|------------------------|-------------|

WLC7 **Lower Lostine River (Mouth to Silver Cr.)**

Stream Miles Denominator used in Uplift Calculation (in appropriate Limiting Factors)

14.1 mi

WLC7 - LF 1.1 (Anthropogenic Barriers)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|--|----------------------|--|---|
| Lostine River City of Lostine Diversion Structure (2012) Combined Passage Benefit of: Carlsen Acquisition (2012-2015), 2012-2015 Lostine Minimum Flow Agreement, Wolfe Permanent Diversion (2012) | 2 | 50% | 1 |
| | 3 | 60% | 1.8 |
| Total Project Length | 5 | | 2.8 |
| Total # Projects | 2 | | |
| Total Stream Miles Affected (Weighted for 2018) | 2.8 | | |
| Total Stream Miles (Denominator) | 14.1 mi. | | |
| % Uplift (2018) | 19.9% | | |

WLC7 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|--|----------------------|--|---|
| Lostine River City of Lostine Diversion Structure Replacement (2012) | 0.066287879 | 15% | 0.009943 |
| Total Project Length | 0.066287879 | | 0.009943 |
| Total # Projects | 1 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0.009943182 | | |
| Total Stream Miles (Denominator) | 14.1 mi. | | |
| % Uplift (2018) | 0.1% | | |

WLC7 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 14.1 mi. | | |
| % Uplift (2018) | 0.0% | | |

WLC7 - LF 8.1 (Water Quality: Temperature)

| <u>Action</u> | <u>Miles treated</u> | <u>2015 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|--|----------------------|--|---|
| 2012-2015 Lostine Minimum Flow Agreement (RMs 5.5-9) | 3.5 | 5% | 0.175 |
| 2012-2015 Lostine Minimum Flow Agreement (RMs 0-5.5) | 5.5 | 0% | 0 |
| Total Project Length | 9 | | 0.175 |
| Total # Projects | 2 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0.175 | | |
| Total Stream Miles (Denominator) | 14.1 mi. | | |
| % Uplift (2018) | 1.2% | | |

WLC7 - LF 8.2 (Water Quality: Oxygen)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 14.1 mi. | | |

% Uplift (2018)

0.0%

WLC7 - LF 9.2 (Water Quantity: Decreased Water Quantity)

| Action | Permanent Acquisition | Annual Amounts (cfs) | | | | Weighting Factor | Temporal Weighting (percent of irrigation season) | | Weighted Average of Flow |
|--|-----------------------|----------------------|-------|-------|-------|------------------|---|--|--------------------------|
| | | 2012 | 2013 | 2014 | 2015 | | | | |
| Carlsen Acquisition (2012-2015) | | 1.5 | 1.5 | 1.5 | 1.5 | 60% | 40% | | 0.4 |
| 2012-2015 Lostine Minimum Flow Agreement | | 15 | 15 | 15 | 17.1 | 64% | 40% | | 4.0 |
| Wolfe Permanent Diversion (2012) | | 0.39 | 0.39 | 0.39 | 0.39 | 35% | 40% | | 0.1 |
| Total | 0 | 16.89 | 16.89 | 16.89 | 18.99 | | | | 4.4 |

Total4.4 cfs

Total # Projects3

Denominator35 cfs

Panel estimate of base flow prior to irrigation

% Uplift (2018)

12.5%

WLC8

Upper Lostine River (Silver Cr. To Headwaters)

Stream Miles Denominator used in Uplift
Calculation (in appropriate Limiting Factors)

12.3 mi

WLC8 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|---|---------------|--|---------------------------------|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 12.3 mi. | | |
| % Uplift (2018) | 0.0% | | |

WLC8 - LF 8.1 (Water Quality: Temperature)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|---|---------------|--|---------------------------------|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 12.3 mi. | | |
| % Uplift (2018) | 0.0% | | |

WLC8 - LF 8.2 (Water Quality: Oxygen)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|--------|---------------|--|---------------------------------|
|--------|---------------|--|---------------------------------|

| | | | |
|----------------------|--|--|---|
| No Actions | | | 0 |
| Total Project Length | | | 0 |
| Total # Projects | | | 0 |

| | |
|---|----------|
| Total Stream Miles Affected (Weighted for 2018) | 0 |
| Total Stream Miles (Denominator) | 12.3 mi. |

% Uplift (2018)

0.0%

WRS13 Upper Wallowa River (Upstream of Lostine River) and Small Tributaries

Stream Miles Denominator used in Uplift

Calculation (in appropriate Limiting Factors)

36.3 mi

WRS13 - LF 1.1 (Anthropogenic Barriers)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|--|----------------------|--|---|
| Trout Creek/Alpine Meadows Irrigation and Fish Passage (2013) | 1.9 | 25% | 0.475 |
| Wallowa River/Cross Country Canal Diversion Replacement (2012) | 15 | 10% | 1.5 |
| Total Project Length | 16.9 | | 1.975 |
| Total # Projects | 2 | | |
| Total Stream Miles Affected (Weighted for 2018) | 1.975 | | |
| Total Stream Miles (Denominator) | 36.3 mi. | | |
| % Uplift (2018) | 5.4% | | |

WRS13 - LF 4.1 (Riparian Vegetation)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|--|----------------------|--|---|
| Wallowa River - Six Ranch Restoration Project 2 (2015) | 0.38 | 3% | 0.0114 |
| Total Project Length | 0.38 | | 0.0114 |
| Total # Projects | 1 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0.0114 | | |
| Total Stream Miles (Denominator) | 36.3 mi. | | |
| % Uplift (2018) | 0.03% | | |

WRS13 - LF 5.2 (Peripheral and Transitional Habitats: Floodplain Condition)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|--|----------------------|--|---|
| Wallowa River - Six Ranch Restoration Project 2 (2015) | 0.38 | 75% | 0.285 |
| Total Project Length | 0.38 | | 0.285 |
| Total # Projects | 0 | | |
| Total Miles Affected (Weighted for 2018) | 0.285 | | |
| Total Stream Miles (Denominator) | 36.3 mi. | | |
| % Uplift (2018) | 0.8% | | |

WRS13 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|--|----------------------|--|---|
| Wallowa River - Six Ranch Restoration Project 2 (2015) | 0.38 | 50% | 0.19 |
| Total Project Length | 0.38 | | 0.19 |
| Total # Projects | 1 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0.19 | | |
| Total Stream Miles (Denominator) | 36.3 mi. | | |
| % Uplift (2018) | 0.5% | | |

WRS13 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|--|----------------------|--|---|
| Wallowa River - Six Ranch Restoration Project 2 (2015) | 0.38 | 60% | 0.228 |
| Wallowa River/Cross Country Canal Diversion Replacement (2012) | 0.09 | 30% | 0.026 |
| Total Project Length | 0.47 | | 0.253568182 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0.253568182 | | |
| Total Stream Miles (Denominator) | 36.3 mi. | | |

% Uplift (2018)

0.7%

WRS13 - LF 8.2 (Water Quality: Oxygen)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|---|---------------|--|---------------------------------|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 36.3 mi. | | |

% Uplift (2018)

0.0%

WRS13 - LF 9.2 (Water Quantity: Decreased Water Quantity)

| Action | Permanent Acquisition | Annual Amounts (cfs) | | | |
|---|--------------------------|----------------------|------|------|------|
| | | 2012 | 2013 | 2014 | 2015 |
| Trout Creek/Alpine Meadows Irrigation and Fish Passage (2013) | | | 1 | 1 | 1 |
| Total | 0 | 0 | 1 | 1 | 1 |

Total

0.8 cfs

Total # Projects

1

Annual Average ==>

0.8

Denominator

150 cfs

Estimate of mean daily flow in Wallowa River in August and September (critical period).

% Uplift (2018)

0.5%

JCS1

Joseph Creek Mainstem

Stream Miles Denominator used in Uplift
Calculation (in appropriate Limiting Factors)

48.4 mi

JCS1 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|---|---------------|--|---------------------------------|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 48.4 mi. | | |
| % Uplift (2018) | 0.0% | | |

JCS1 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|---|---------------|--|---------------------------------|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 48.4 mi. | | |
| % Uplift (2018) | 0.0% | | |

JCS1 - LF 8.1 (Water Quality: Temperature)

| Action | Streammiles Treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|--------|---------------------|--|---------------------------------|
|--------|---------------------|--|---------------------------------|

| | | | |
|---|----------|----|------|
| Birkmaier Lease/Renewal | 0.8 | 5% | 0.04 |
| Total Project Length | 0.8 | | 0.04 |
| Total # Projects | 1 | | |
| | | | |
| Total Stream Miles Affected (Weighted for 2018) | 0.04 | | |
| Total Stream Miles (Denominator) | 48.4 mi. | | |
| % Uplift (2018) | 0.1% | | |

JCS1 - LF 8.2 (Water Quality: Oxygen)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|---|---------------|--|---------------------------------|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| | | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 48.4 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRS1

Lower Imnaha R.

Stream Miles Denominator used in Uplift
Calculation (in appropriate Limiting Factors)

36.4 mi

IRS1 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|---|---------------|--|---------------------------------|
| Marr Habitat (Planting, Bank Bioengineering, Side Channel Maintenance) | 0.07 | 100% | 0.07 |
| Total Project Length | 1 | | 0.07 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0.07 | | |
| Total Stream Miles (Denominator) | 36.4 mi. | | |
| % Uplift (2018) | 0.2% | | |

IRS1 - LF 8.1 (Water Quality: Temperature)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|---|---------------|--|---------------------------------|
| Marr Habitat (Planting, Bank Bioengineering, Side Channel Maintenance) | 0.07 | 0% | 0 |
| Total Project Length | 0.07 | | 0 |
| Total # Projects | 1 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 36.4 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRS1 - LF 8.2 (Water Quality: Oxygen)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 36.4 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRS1 - LF 9.2 (Water Quantity: Decreased Water Quantity)

| <u>Action</u> | <u>Permanent Acquisition</u> | <u>Annual Amounts (cfs)</u> | | | |
|---------------|----------------------------------|-----------------------------|-------------|-------------|-------------|
| | | <u>2012</u> | <u>2013</u> | <u>2014</u> | <u>2015</u> |
| No Actions | | | | | |
| Total | 0 | 0 | 0 | 0 | 0 |

| | | | |
|------------------------|----------------|------------------------------|-----|
| Total | 0.0 cfs | Annual Average ==> | 0.0 |
| Total # Projects | #REF! | | |
| Denominator | cfs | Example: Base Flow | |
| % Uplift (2018) | #DIV/0! | | |

IRS6

Lower Big Sheep Mainstem

Stream Miles Denominator used in Uplift Calculation (in appropriate Limiting Factors)

53.1 mi

IRS6 - LF 1.1 (Anthropogenic Barriers)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|---|---------------|---|------------------------------|
| Big Sheep/Buhler Irrigation and Fish Passage Improvement (2012) | 17 | 33% | 5.61 |
| Total Project Length | 17 | | 5.61 |
| Total # Projects | 1 | | |
| Total Stream Miles Affected (Weighted for 2018) | 5.61 | | |
| Total Stream Miles (Denominator) | 53.1 mi. | | |
| % Uplift (2018) | 10.6% | | |

IRS6 - LF 2.1 (Injury and Mortality: Predation)

| Action | Design Flow of Screen (cfs) | 2018 % Improvement (prorating factor) | Realized Change in 2018 (flow) |
|---|-----------------------------|---|--------------------------------|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Flow (Denominator) | cfs | | |
| % Uplift (2018) | #DIV/0! | | |

IRS6 - LF 3.1 (Food: Altered Primary Productivity)

| <u>Action</u> | <u>Design Flow of Screen (cfs)</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (flow)</u> |
|---|--|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Flow (Denominator) | cfs | | |
| % Uplift (2018) | #DIV/0! | | |

IRS6 - LF 4.1 (Riparian Vegetation)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 53.1 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRS6 - LF 5.2 (Peripheral and Transitional Habitats: Floodplain Condition)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|--|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 53.1 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRS6 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 53.1 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRS6 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 53.1 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRS6 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 53.1 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRS6 - LF 8.1 (Water Quality: Temperature)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 53.1 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRS6 - LF 8.2 (Water Quality: Oxygen)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 53.1 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRS6 - LF 9.1 (Water Quantity: Increased Water Quantity)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|----------------------|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |

Total Stream Miles Affected (Weighted for 2018)
Total Stream Miles (Denominator)

0
53.1 mi.

% Uplift (2018)

0.0%

IRS6- LF 9.2 (Water Quantity: Decreased Water Quantity)

| <u>Action</u> | <u>Permanent Acquisition</u> | <u>Annual Amounts (cfs)</u> | | | | |
|---------------|------------------------------|-----------------------------|-------------|-------------|-------------|--|
| | | <u>2012</u> | <u>2013</u> | <u>2014</u> | <u>2015</u> | |
| No Actions | | | | | | |
| Total | 0 | 0 | 0 | 0 | 0 | |

Total

0.0 cfs

Annual Average ==>0.0

Total # Projects

#REF!

Denominator

cfs

% Uplift (2018)

#DIV/0!

Example: Base Flow

IRS7

Lower Big Sheep and Little Sheep Cr. Tributaries

Stream Miles Denominator used in Uplift
Calculation (in appropriate Limiting Factors)

51.1 mi

IRS7 - LF 1.1 (Anthropogenic Barriers)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|---|---------------|--|---------------------------------|
| Big Sheep/Buhler Irrigation and Fish Passage Improvement (2012) | 13 | 33% | 4.29 |
| | | | 0 |
| | | | 0 |
| | | | 0 |
| Total Project Length | 13 | | 4.29 |
| Total # Projects | 1 | | |
| Total Stream Miles Affected (Weighted for 2018) | 4.29 | | |
| Total Stream Miles (Denominator) | 51.1 mi. | | |
| % Uplift (2018) | 8.4% | | |

IRS7 - LF 2.1 (Injury and Mortality: Predation)

| Action | Design Flow of Screen (cfs) | 2018 % Improvement (prorating factor) | Realized Change in 2018 (flow) |
|---|--------------------------------|--|-----------------------------------|
| | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Flow (Denominator) | cfs | | |
| % Uplift (2018) | #DIV/0! | | |

IRS7 - LF 3.1 (Food: Altered Primary Productivity)

| <u>Action</u> | <u>Design Flow of Screen (cfs)</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (flow)</u> |
|---|--|--|---|
| | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Flow (Denominator) | cfs | | |
| % Uplift (2018) | #DIV/0! | | |

IRS7 - LF 4.1 (Riparian Vegetation)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 51.1 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRS7 - LF 5.2 (Peripheral and Transitional Habitats: Floodplain Condition)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|--|----------------------|--|---|
| | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 51.1 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRS7 - LF 6.1 (Channel Structure and Form: Bed and Channel Form)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | 0 |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 51.1 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRS7 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | 0 |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 51.1 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRS7 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | 0 |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 51.1 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRS7 - LF 8.1 (Water Quality: Temperature)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 51.1 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRS7 - LF 8.2 (Water Quality: Oxygen)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 51.1 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRS7 - LF 9.1 (Water Quantity: Increased Water Quantity)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|----------------------|----------------------|--|---|
| | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |

Total Stream Miles Affected (Weighted for 2018)
Total Stream Miles (Denominator)

0
51.1 mi.

% Uplift (2018)

0.0%

IRS7 - LF 9.2 (Water Quantity: Decreased Water Quantity)

| <u>Action</u> | <u>Permanent Acquisition</u> | <u>Annual Amounts (cfs)</u> | | | |
|---------------|------------------------------|-----------------------------|-------------|-------------|-------------|
| | | <u>2012</u> | <u>2013</u> | <u>2014</u> | <u>2015</u> |
| Total | 0 | 0 | 0 | 0 | 0 |

Total
Total # Projects
Denominator

0.0 cfs
0
cfs

Annual Average ==> 0.0

Example: Base Flow

% Uplift (2018)

#DIV/0!

IRS8

Upper Big Sheep & Little Sheep Mainstems

Stream Miles Denominator used in Uplift
Calculation (in appropriate Limiting Factors)

11.9 mi

IRS8 - LF 1.1 (Anthropogenic Barriers)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|---|---------------|--|---------------------------------|
| Big Sheep/Buhler Irrigation and Fish Passage Improvement (2012) | 11.9 | 10% | 1.19 |
| Total Project Length | 11.9 | | 1.19 |
| Total # Projects | 1 | | |
| Total Stream Miles Affected (Weighted for 2018) | 1.19 | | |
| Total Stream Miles (Denominator) | 11.9 mi. | | |
| % Uplift (2018) | 10.0% | | |

IRS8 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|---|---------------|--|---------------------------------|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 11.9 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRS8 - LF 8.1 (Water Quality: Temperature)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| Total Project Length | #REF! | | #REF! |
| Total # Projects | | 0 | |
| Total Stream Miles Affected (Weighted for 2018) | #REF! | | |
| Total Stream Miles (Denominator) | | 11.9 mi. | |
| % Uplift (2018) | #REF! | | |

IRS8 - LF 9.2 (Water Quantity: Decreased Water Quantity)

| <u>Action</u> | <u>Permanent Acquisition</u> | <u>Annual Amounts (cfs)</u> | | | |
|------------------------|----------------------------------|------------------------------|-------------|-------------|-------------|
| | | <u>2012</u> | <u>2013</u> | <u>2014</u> | <u>2015</u> |
| No Actions | | | | | |
| Total | 0 | 0 | 0 | 0 | 0 |
| Total | 0.0 cfs | Annual Average ==> | | 0.0 | |
| Total # Projects | 1 | | | | |
| Denominator | cfs | Example: Base Flow | | | |
| % Uplift (2018) | #DIV/0! | | | | |

IRS9

Upper Big Sheep & Little Sheep Tributaries

Stream Miles Denominator used in Uplift
Calculation (in appropriate Limiting Factors)

21.8 mi

IRS9 - LF 1.1 (Anthropogenic Barriers)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|---|---------------|--|---------------------------------|
| Big Sheep/Buhler Irrigation and Fish Passage Improvement (2012) | 5.5 | 10% | 0.55 |
| Total Project Length | 5.5 | | 0.55 |
| Total # Projects | 1 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0.55 | | |
| Total Stream Miles (Denominator) | 21.8 mi. | | |
| % Uplift (2018) | 2.5% | | |

IRS9 - LF 4.1 (Riparian Vegetation)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|---|---------------|--|---------------------------------|
| | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 21.8 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRS9 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

| Action | Miles treated | 2018 % Improvement (prorating factor) | Realized Change in 2018 (mi) |
|--------|---------------|--|---------------------------------|
|--------|---------------|--|---------------------------------|

| | | |
|---|-------------|-------------|
| Total Project Length | <div></div> | <div></div> |
| Total # Projects | 0 | 0 |
| Total Stream Miles Affected (Weighted for 2018) | 0 | |
| Total Stream Miles (Denominator) | 21.8 mi. | |
| % Uplift (2018) | 0.0% | |

IRS9 - LF 8.1 (Water Quality: Temperature)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| Total Project Length | <div></div> | | <div></div> |
| Total # Projects | 0 | | 0 |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 21.8 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRS9 - LF 8.2 (Water Quality: Oxygen)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| Total Project Length | <div></div> | | <div></div> |
| Total # Projects | 0 | | 0 |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 21.8 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRS9 - LF 9.1 (Water Quantity: Increased Water Quantity)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 21.8 mi. | | |
| % Uplift (2018) | 0.0% | | |

IRS9- LF 9.2 (Water Quantity: Decreased Water Quantity)

| <u>Action</u> | <u>Permanent Acquisition</u> | <u>Annual Amounts (cfs)</u> | | | |
|---------------|----------------------------------|-----------------------------|-------------|-------------|-------------|
| | | <u>2012</u> | <u>2013</u> | <u>2014</u> | <u>2015</u> |
| Total | 0 | 0 | 0 | 0 | 0 |

| | | | |
|------------------|---------|--------------------|-----|
| Total | 0.0 cfs | Annual Average ==> | 0.0 |
| Total # Projects | 0 | | |
| Denominator | cfs | Example: Base Flow | |
| % Uplift (2018) | #DIV/0! | | |

WRS10 **Lostine River**

Stream Miles Denominator used in Uplift Calculation (in appropriate Limiting Factors)

26.3 mi

WRS10 - LF 1.1 (Anthropogenic Barriers)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|--|----------------------|--|---|
| Lostine River City of Lostine Diversion Structure (2012) Combined Passage Benefit of: Carlsen Acquisition (2012-2015), 2012-2015 Lostine Minimum Flow Agreement, Wolfe Permanent Diversion (2012) | 2 | 50% | 1 |
| | 3 | 60% | 1.8 |
| Total Project Length | 5 | | 2.8 |
| Total # Projects | 2 | | |
| Total Stream Miles Affected (Weighted for 2018) | 2.8 | | |
| Total Stream Miles (Denominator) | 26.3 mi. | | |
| % Uplift (2018) | 10.6% | | |

WRS10 - LF 6.2 (Channel Structure and Form: Instream Structural Complexity)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|--|----------------------|--|---|
| Lostine River City of Lostine Diversion Structure Replacement (2012) | 0.066287879 | 15% | 0.009943 |
| Total Project Length | 0.066287879 | | 0.009943 |
| Total # Projects | 1 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0.009943182 | | |
| Total Stream Miles (Denominator) | 26.3 mi. | | |
| % Uplift (2018) | 0.04% | | |

WRS10 - LF 7.2 (Sediment Conditions: Increased Sediment Quantity)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | 0 |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 26.3 mi. | | |
| % Uplift (2018) | 0.0% | | |

WRS10 - LF 8.1 (Water Quality: Temperature)

| <u>Action</u> | <u>Miles treated</u> | <u>2015 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|--|----------------------|--|---|
| 2012-2015 Lostine Minimum Flow Agreement (RMs 5.5-9) | 3.5 | 5% | 0.175 |
| 2012-2015 Lostine Minimum Flow Agreement (RMs 0-5.5) | 5.5 | 0% | 0 |
| Total Project Length | 9 | | 0.175 |
| Total # Projects | 2 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0.175 | | |
| Total Stream Miles (Denominator) | 26.3 mi. | | |
| % Uplift (2018) | 0.7% | | |

WRS10 - LF 8.2 (Water Quality: Oxygen)

| <u>Action</u> | <u>Miles treated</u> | <u>2018 % Improvement (prorating factor)</u> | <u>Realized Change in 2018 (mi)</u> |
|---|----------------------|--|---|
| No Actions | | | 0 |
| Total Project Length | 0 | | 0 |
| Total # Projects | 0 | | |
| Total Stream Miles Affected (Weighted for 2018) | 0 | | |
| Total Stream Miles (Denominator) | 26.3 mi. | | |
| % Uplift (2018) | 0.0% | | |

WRS10 - LF 9.2 (Water Quantity: Decreased Water Quantity)

| Action | Permanent Acquisition | Annual Amounts (cfs) | | | | Weighting Factor | Weighted Average of Flow |
|--|-----------------------|----------------------|-------|-------|-------|------------------|--------------------------|
| | | 2012 | 2013 | 2014 | 2015 | | |
| Carlsen Acquisition (2012-2015) | | 1.5 | 1.5 | 1.5 | 1.5 | 60% | 0.9 |
| 2012-2015 Lostine Minimum Flow Agreement | | 15 | 15 | 15 | 17.1 | 64% | 9.9 |
| Wolfe Permanent Diversion (2012) | | 0.39 | 0.39 | 0.39 | 0.39 | 35% | 0.1 |
| Total | 0 | 16.89 | 16.89 | 16.89 | 18.99 | | 11.0 |

| | | | | | |
|------------------|----------|----------------|--|-----|---|
| | | Annual Average | | ==> | 17.4 |
| Total | 11.0 cfs | | | | |
| Total # Projects | 3 | | | | |
| Denominator | 35 cfs | | | | Panel estimate of base flow prior to irrigation |
| % Uplift (2018) | 31.3% | | | | |