

Limiting Factor Report

This report contains a list of limiting factors by watershed (HUC5) as generated during multiple processes. These factors have been described as impediments to fish productivity or abundance that occur in the tributary habitat of the species. They pertain to salmon, generally Chinook or Steelhead, that spawn, rear, or migrate through these watersheds. We provide these lists here for Tribal PCSRF project solicitors so that they may use them as needed for project selection and design, and also for documentation of how projects will meet the objectives to remedy limiting factors in their areas. Because limiting factor definitions were not standardized between these different sources, they are provided here as separate lists.

Up to three sources of limiting factors are provided here, although not all basins were assessed for each process:

1) Subbasin Planning: Limiting Factors were identified at CRITFC as they were documented in the 2001/2002 Subbasin Plans. Generally, this information was generated for Ecosystems Diagnosis & Treatment (EDT) or Qualitative Habitat and Analysis (QHA) modeling of subbasin processes, but in many cases the Subbasin Planners edited these lists for publication in the Subbasin Plans according to their knowledge.

2) Tribal Remand Process: During the Tribal response and habitat action proposal process of the BiOp Remand, Tribal biologists identified limiting factors by watershed that affect Chinook and Steelhead habitat. These limiting factors were used to assess the potential benefit for survival improvement if habitat actions occur. These lists of limiting factors are provided here.

3) NOAA Technical Recovery Team: We have been assured that NOAA will generate a standardized set of limited factors for use, probably during the Fall of 2007. When these lists are made available, we will add them here.

Limiting Factors identified during Subbasin Planning by Watershed

HUC4: Walla Walla (17070102)

Watershed Upper Walla (1707010201) (HUC5): Walla River

Limiting Factor:

Channel Stability

Flow

Food

Habitat Diversity

Key Habitat Quantity

Oxygen

Sediment Load

Water Temperature

Watershed Mill Creek- (1707010202) (HUC5): Walla Walla River

Limiting Factor:

Channel Stability

Flow

Habitat Diversity

Key Habitat Quantity

Obstructions

Sediment Load

Water Temperature

Watershed Upper Touchet (1707010203) (HUC5): River

Limiting Factor:

Channel Stability

Flow

Food

Habitat Diversity

Key Habitat Quantity

Sediment Load

Water Temperature

Limiting Factors identified during Subbasin Planning by Watershed

Watershed Middle Touchet (1707010204)
(HUC5): River

Limiting Factor:

Channel Stability
Competition (Hatchery)
Flow
Food
Habitat Diversity
Key Habitat Quantity
Pathogens
Predation
Sediment Load
Water Temperature

Watershed Whetstone (1707010205)
(HUC5): Hollow

Limiting Factor:

Channel Stability
Competition (Hatchery)
Flow
Habitat Diversity
Key Habitat Quantity
Pathogens
Predation
Sediment Load
Water Temperature

Watershed Winnett Canyon (1707010206)
(HUC5):

Limiting Factor:

Channel Stability
Competition (Hatchery)
Flow
Habitat Diversity
Key Habitat Quantity
Pathogens
Predation
Sediment Load
Water Temperature

Limiting Factors identified during Subbasin Planning by Watershed

Watershed Lower Touchet (1707010207)
(HUC5): River

Limiting Factor:

Channel Stability
Competition (Hatchery)
Flow
Habitat Diversity
Key Habitat Quantity
Pathogens
Predation
Sediment Load
Water Temperature

Watershed Cottonwood (1707010208)
(HUC5): Creek

Limiting Factor:

Channel Stability
Flow
Food
Habitat Diversity
Harassment
Key Habitat Quantity
Obstructions
Oxygen
Sediment Load
Water Temperature

Watershed Pine Creek (1707010209)
(HUC5):

Limiting Factor:

Channel Stability
Flow
Habitat Diversity
Key Habitat Quantity
Pathogens
Sediment Load
Water Temperature

Limiting Factors identified during Subbasin Planning by Watershed

Watershed Dry Creek (1707010210)
(HUC5):

Limiting Factor:

Channel Stability

Flow

Food

Habitat Diversity

Key Habitat Quantity

Obstructions

Sediment Load

Water Temperature

Watershed Lower Walla (1707010211)
(HUC5): Walla River

Limiting Factor:

Channel Stability

Competition (Hatchery)

Flow

Food

Habitat Diversity

Key Habitat Quantity

Obstructions

Pathogens

Predation

Sediment Load

Water Temperature

Limiting Factors identified by Tribes during Remand by Watershed

HUC4: Walla Walla (17070102)

Watershed Upper Walla (1707010201)
(HUC5): Walla River

Limiting Factor:

In-channel Characteristics

Passage / Entrainment

Riparian / Floodplain

Watershed Mill Creek- (1707010202)
(HUC5): Walla Walla
River

Limiting Factor:

Riparian / Floodplain

In-channel Characteristics

Passage / Entrainment

Watershed Upper Touchet (1707010203)
(HUC5): River

Limiting Factor:

Riparian / Floodplain

Passage / Entrainment

In-channel Characteristics

Watershed Middle Touchet (1707010204)
(HUC5): River

Limiting Factor:

In-channel Characteristics

Passage / Entrainment

Riparian / Floodplain

Watershed Whetstone (1707010205)
(HUC5): Hollow

Limiting Factor:

In-channel Characteristics

Passage / Entrainment

Riparian / Floodplain

Limiting Factors identified by Tribes during Remand by Watershed

**Watershed Winnett Canyon (1707010206)
(HUC5):**

Limiting Factor:

Passage / Entrainment

Riparian / Floodplain

In-channel Characteristics

**Watershed Lower Touchet (1707010207)
(HUC5): River**

Limiting Factor:

Passage / Entrainment

Riparian / Floodplain

In-channel Characteristics

**Watershed Cottonwood (1707010208)
(HUC5): Creek**

Limiting Factor:

In-channel Characteristics

Passage / Entrainment

Riparian / Floodplain

**Watershed Pine Creek (1707010209)
(HUC5):**

Limiting Factor:

Riparian / Floodplain

In-channel Characteristics

Passage / Entrainment

**Watershed Dry Creek (1707010210)
(HUC5):**

Limiting Factor:

Riparian / Floodplain

In-channel Characteristics

Passage / Entrainment

Limiting Factors identified by Tribes during Remand by Watershed

Watershed Lower Walla (1707010211)
(HUC5): Walla River

Limiting Factor:

In-channel Characteristics

Passage / Entrainment

Riparian / Floodplain