

## **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.

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## Limiting Factors identified during Subbasin Planning by Watershed

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### HUC4: Upper Yakima ( 17030001 )

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#### Watershed Upper Yakima ( 1703000101 ) (HUC5): River

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**Limiting Factor:**

Channel Stability

Flow

Food

Habitat Diversity

Key Habitat Quantity

Obstructions

Predation

Sediment Load

Water Temperature

#### Watershed Tenaway River ( 1703000102 ) (HUC5):

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**Limiting Factor:**

Channel Stability

Flow

Food

Habitat Diversity

Key Habitat Quantity

Obstructions

Predation

Sediment Load

Water Temperature

#### Watershed Middle Yakima ( 1703000103 ) (HUC5): River

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**Limiting Factor:**

Channel Stability

Flow

Food

Habitat Diversity

Key Habitat Quantity

Obstructions

Predation

Sediment Load

Water Temperature

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## Limiting Factors identified during Subbasin Planning by Watershed

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**Watershed Yakima River- ( 1703000104 )**  
**(HUC5): Umatanum**  
**Creek**

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**Limiting Factor:**

Channel Stability

Flow

Food

Habitat Diversity

Key Habitat Quantity

Obstructions

Pathogens

Predation

Sediment Load

Water Temperature

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## Limiting Factors identified by Tribes during Remand by Watershed

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### HUC4: Upper Yakima ( 17030001 )

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#### Watershed Upper Yakima ( 1703000101 ) (HUC5): River

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**Limiting Factor:**

Water Quality – Chemistry  
Riparian / Floodplain  
Side Channel Reconnection  
Pools  
Passage / Entrainment  
Ecologic – Community  
Water Quality - Temperature  
Water Quality - Toxics  
In-channel Characteristics  
Watershed - Hydrology  
Water Quantity – Flow  
Sediment

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#### Watershed Tenaway River ( 1703000102 ) (HUC5):

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**Limiting Factor:**

Watershed - Hydrology  
Ecologic – Community  
In-channel Characteristics  
Passage / Entrainment  
Riparian / Floodplain  
Water Quality – Chemistry  
Side Channel Reconnection  
Water Quality - Temperature  
Water Quality - Toxics  
Water Quantity – Flow  
Sediment  
Pools

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## Limiting Factors identified by Tribes during Remand by Watershed

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**Watershed Middle Yakima ( 1703000103 )**  
**(HUC5): River**

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**Limiting Factor:**

Sediment  
In-channel Characteristics  
Ecologic – Community  
Passage / Entrainment  
Pools  
Riparian / Floodplain  
Water Quality – Chemistry  
Water Quality - Temperature  
Water Quality - Toxics  
Water Quantity – Flow  
Side Channel Reconnection  
Watershed - Hydrology

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**Watershed Yakima River- ( 1703000104 )**  
**(HUC5): Umatanum**  
**Creek**

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**Limiting Factor:**

Side Channel Reconnection  
Water Quality – Chemistry  
Ecologic – Community  
In-channel Characteristics  
Riparian / Floodplain  
Pools  
Water Quality - Temperature  
Water Quality - Toxics  
Water Quantity – Flow  
Sediment  
Passage / Entrainment  
Watershed - Hydrology

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