

## **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: Lower Columbia-Sandy ( 17080001 )**

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**Watershed Salmon River ( 1708000101 ) (HUC5):**

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**Limiting Factor:**

Flow

Food

Habitat Diversity

Key Habitat Quantity

Sediment Load

Water Temperature

**Watershed Zigzag River ( 1708000102 ) (HUC5):**

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**Limiting Factor:**

Channel Stability

Flow

Food

Habitat Diversity

Key Habitat Quantity

Sediment Load

**Watershed Upper Sandy River ( 1708000103 ) (HUC5):**

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**Limiting Factor:**

Channel Stability

Chemicals

Flow

Food

Habitat Diversity

Key Habitat Quantity

Sediment Load

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## Limiting Factors identified during Subbasin Planning by Watershed

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**Watershed Middle Sandy ( 1708000104 )**  
**(HUC5): River**

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**Limiting Factor:**

Channel Stability

Chemicals

Flow

Food

Habitat Diversity

Key Habitat Quantity

Obstructions

Sediment Load

Water Temperature

**Watershed Bull Run River ( 1708000105 )**  
**(HUC5):**

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**Limiting Factor:**

Channel Stability

Flow

Food

Habitat Diversity

Key Habitat Quantity

Obstructions

Sediment Load

Water Temperature

**Watershed Washougal ( 1708000106 )**  
**(HUC5): River**

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**Limiting Factor:**

Channel Stability

Competition (Hatchery)

Flow

Habitat Diversity

Key Habitat Quantity

Obstructions

Pathogens

Predation

Sediment Load

Water Temperature

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## Limiting Factors identified during Subbasin Planning by Watershed

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**Watershed Columbia** ( 1708000107 )  
**(HUC5): Gorge Tributary**

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**Limiting Factor:**

Flow

Habitat Diversity

Harassment

Key Habitat Quantity

Sediment Load

Water Temperature

**Watershed Lower Sandy** ( 1708000108 )  
**(HUC5): River**

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**Limiting Factor:**

Channel Stability

Flow

Food

Habitat Diversity

Key Habitat Quantity

Obstructions

Predation

Sediment Load

Water Temperature