

### 3.11 MORSE CREEK RECOMMENDATIONS

Section 3.4 contains recommendations for instream flows and Section 3.3 contains other recommendations for small rural and urban streams, habitat restoration, salmon recovery, and related environments (e.g., riparian corridors, wetlands, estuaries) that are intended to be considered for all WRIA 18 streams and rivers. Sections 3.1 and 3.2 contain water quantity and water quality recommendations that also apply to all WRIA 18 subbasins.

**Issue:** Morse Creek is the largest of the independent drainages to salt water between the Dungeness and Elwha rivers, entering the Strait of Juan de Fuca approximately 2 miles east of Port Angeles. The stream extends 16.3 miles from its headwaters in the Olympic National Park. Its moderate watershed (52.7+ mi<sup>2</sup>)<sup>1</sup> drains steep headwaters, including Hurricane Ridge, Mount Angeles, and Deer Park. Fishery stocks known to have inhabited Morse Creek include spring/summer chinook, coho, chum, and pink salmon, summer and winter steelhead, and searun cutthroat trout. Natural falls at river mile 4.9 divide the watershed, posing an impassable barrier to anadromous fish (Haring 1999), and a resident population of rainbow trout occurs above the falls. The City of Port Angeles holds water rights on Morse Creek for both hydropower generation and for emergency back-up water supply (see Section 2.6.7 for more details and a map). With the planned removal of the Elwha dams, the City is reserving its Morse Creek water right for emergency domestic water supply. The Limiting Factors Analysis (LFA) (Haring, 1999) has identified water quality and/or habitat recommendations to address on this stream.

#### Existing Conditions and Current Actions

Morse Creek is among the smaller WRIA 18 “snow streams,” with bimodal peak flow developed by winter storms and by spring runoff from its snow-fed headwaters in Olympic National Park. Streams having bimodal peak flows are quite productive, and Morse Creek is particularly productive for its size. Morse Creek is classified a Tier 1 stream by the North Olympic Lead Entity. For its size, it has great historic diversity of existing native fish stocks and high potential to provide quality salmon habitat. Habitat quality and conditions are excellent in the watershed above the Olympic National Park boundary at RM 9.0, and conditions are generally good to excellent above RM 3 to the Olympic National Park boundary. Current issues and concerns include the operation of the City of Port Angeles hydroelectric facility (which includes a bypass reach of approximately 0.5 miles of anadromous habitat below the falls); diking and bank hardening in the lower 3 miles of the creek; and the loss of stream meander, large woody debris, and sediment (spawning gravels) in the lower river. In addition, the effects of the two large “Four Seasons” land developments (at River Mile 2 and on the Morse Creek estuary), as well as possible future development in the Mining Creek and Frog Creek watersheds, are sources of concern.

The most serious impacts to the Morse Creek watershed are present in the lower 2 miles. In this area the stream has been almost completely channelized, with two dense residential developments resulting in homes and yards immediately adjacent to the creek.

---

<sup>1</sup>The City of Port Angeles FERC application gives the watershed area as 46 mi<sup>2</sup> above the diversion at RM 7.2. Perry (*draft* 2001) describes the upland and highland areas as totaling 46.6 mi<sup>2</sup>, and in appendices, describes the Morse Creek lowland area as 6.055 mi<sup>2</sup>. WDOE (1983) gives the total drainage area as 57 mi<sup>2</sup>.

This has virtually eliminated functional riparian and floodplain functions. The watershed's history of logging has caused a degradation of the quantity and quality of LWD, which has been compounded in the lower 2 miles by a history of active LWD removal in the name of avoiding logjam-caused flooding. Highway 101 and the former railroad trestle now incorporated in the Olympic Discovery Trail represent constrictions to flood flows and functional wood recruitment processes. The estuary has been severely degraded by both the upland residential activities and the widespread alterations to Port Angeles Harbor, including inter-tidal filling, shoreline armoring, log storage, pulp mill operations, and urban run-off.

Recent land acquisitions immediately above and below Highway 101 offer important opportunities to restore a meandering channel, healthy riparian habitat, and some functional floodplain. Substantial funding will be required to move on to these projects. Beyond these pending opportunities, there are no active restoration/improvement actions or programs being undertaken in the Morse Creek watershed.

### **Desired Conditions and Outcomes**

- Fish habitat restoration addressed by appropriate agencies and local jurisdictions.
- Properly functioning water quality and habitat conditions adequate to support healthy populations of all naturally occurring anadromous stocks.
- Preservation of existing high-quality habitat in Morse Creek.

### **Recommendations**

#### **A. Water Quality**

1. Monitoring: Clallam County and the City of Port Angeles, with assistance from the Clallam Conservation District and Clallam PUD No. 1, should cooperatively establish and manage a comprehensive water quality monitoring program to evaluate pollutants, including suspended sediments in the water column, and stream sediments. Sources may include: landslides, land clearing, landfills, septic systems, fish-rearing facilities, and runoff from golf courses, lawns, agricultural lands, and other impervious surfaces. As indicated by monitoring results, steps (such as the preparation of TMDLs, point-source abatement) should be taken to manage water quality problems.<sup>2</sup>
2. Recognize that leachate from creosoted pilings has deleterious effects on water quality. If an opportunity should arise and funding is available, the railroad bridge pilings on Morse Creek should be replaced or appropriate and acceptable mitigation measures applied. Such actions should not compromise the Olympic Discovery Trail crossing of Morse Creek.

---

<sup>2</sup> The City of Port Angeles currently has no jurisdiction in the Morse Creek watershed. This recommendation would apply to the City only in the event that its jurisdiction is extended at some future date.

3. Develop and implement strategies to retain sediment in Morse Creek (e.g., slow stream velocity by meander restoration, by LWD placement, or by developing instream structure and diversity of channel form and function).

## B. Habitat

1. Habitat Restoration: Respecting existing property rights and working with willing property owners, seek opportunities to restore habitat and recover salmonids. Where possible and as needed, based on habitat and changing conditions, achieve the following objectives using tools such as conservation easements, donations, purchases, and City or County planning, zoning and critical areas ordinances and regulations:
  - a. Restore stream meanders in the lower river, below and immediately above the Highway 101 bridge (the WDFW properties).
  - b. Encourage conifer regeneration in deciduous stands along the creek.
  - c. Restore and protect natural stream banks, including natural riparian vegetation.
  - d. Restore and protect estuarine and nearshore marine properly functioning conditions. Eliminate or mitigate nearshore and shoreline structures where these impair properly functioning conditions. However, continue to protect the Olympic Discovery Trail. Restore drift processes and recruitment of marine sediments to the west of Morse Creek.
    - i. Conduct a feasibility study addressing both estuary and drift cell restoration.
    - ii. Determine sediment sources (whether from Morse Creek or longshore drift).
    - iii. Collaborate with and educate landowners. Encourage affected landowner involvement
  - e. Eliminate artificial fish passage barriers.
  - f. Restore large woody debris (LWD) throughout the channel.
  - g. Restore side channels.
  - h. Implement BMPs where vegetation management is necessary (e.g., under powerlines) to minimize effects on properly functioning conditions throughout the watershed.
2. Stream gaging: Clallam County, working with the Department of Ecology, USGS, and others, should (1) maintain the existing stream gage in lower Morse Creek; and (2) place a continuous recording, telemetered flow gage in the bypass reach of Morse Creek.
3. Collaboration with homeowners: Initiate work with Four Seasons Ranch and Four Seasons Park homeowners associations to integrate flood control and road maintenance with habitat restoration on Lower Morse Creek.

C. Instream Flows – See Section 3.4 (and subsection and Table 3.4-2). The recommended instream flows in Table 3.4-2 apply to the entire stream. However, existing water rights are not subject to these flows, including hydropower operation between RM 4.3 and 7.3 (known as the "bypass reach") for which specific instream flow requirements have been established in a separate forum (see pgs. 3.4-1 and 2). Effective habitat for salmonids exists in the lowest 0.7 miles of the bypass reach, downstream of an impassable falls at approximately river mile 5.0.