

CHEHALIS MAINSTEM MANAGEMENT UNIT

MAINSTEM CHEHALIS RIVER

Description:

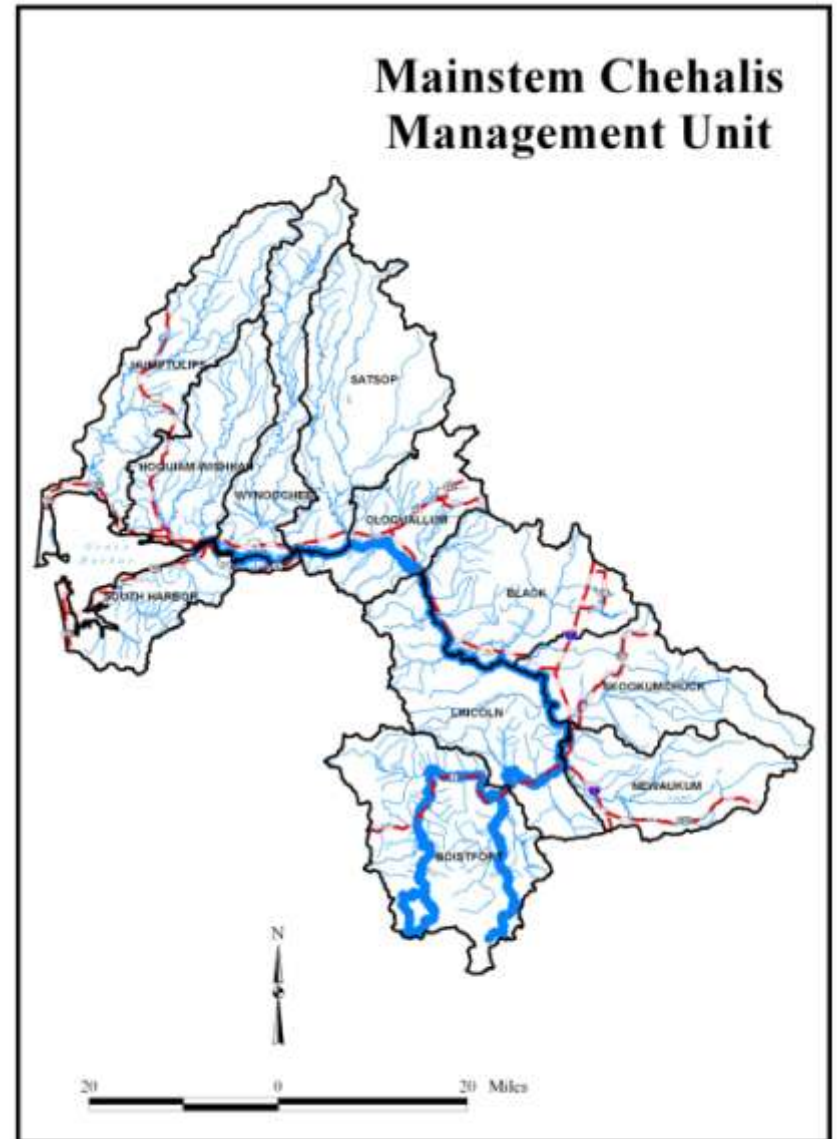
The Chehalis River Mainstem originates at the confluence of the East Fork Chehalis River and the West Fork Chehalis River at river mile 118.9. The mainstem has numerous tributaries with headwaters originating in the Olympic Mountains, Willapa Hills, Bald Hills, Black Hills, and a spur of the Cascade Mountains. It flows near several towns and cities including Pe Ell, Chehalis, Centralia, Oakville, Elma, and Montesano before it eventually drains into the Grays Harbor Estuary at Aberdeen.

The upper mainstem is confined to a low-to-moderate gradient with a land use dominated by forestry. As it nears the Newaukum River confluence, the floodplain broadens and the main land use is agriculture. The reach flowing near Centralia and Chehalis is incised and primarily developed for urban and industrial land uses. Downstream of Centralia, the mainstem again borders agricultural land. From Montesano to the mouth of the mainstem, the river is tidally influenced and contains several sloughs (Smith Wenger 2001).

Major Tributaries: Wynoochee River, Satsop River, Black River, Scatter Creek, Skookumchuck River, Newaukum River, South Fork Chehalis River, Elk Creek, Lincoln Creek, and Bunker Creek

Land Uses: Forestry, Agriculture, Urban and Industrial

Anadromous Fish Stocks: Fall Chinook*, spring Chinook, summer Chinook*, coho, fall chum, cutthroat, winter steelhead*, summer steelhead, and bull trout* (*denotes priority stock)



Chehalis River Mainstem Tier 1 Concerns

Chehalis River Mainstem Tier 1		
RIPARIAN		
Symptom	Cause	General Actions
<p>➔ 105 miles have reduced shade canopy (Smith Wenger 2001).</p>	<p>➔ Urbanization is the cause of riparian vegetation loss in the lower reach and the Centralia-Chehalis reach (Smith Wenger 2001).</p> <p>➔ Agriculture is the largest contributor to riparian loss throughout the Chehalis River Mainstem (Smith Wenger 2001).</p>	<p>➔ Control invasive species. See Section 5.</p> <p>➔ Identify specific degraded riparian areas for restoration</p> <p>➔ Install riparian fencing to exclude or reduce livestock access</p> <p>➔ Interplant conifers in deciduous dominant areas where appropriate</p> <p>➔ Protect by fee simple or easement key properties of riparian habitat.</p> <p>➔ Revegetate open riparian areas with native plants.</p>

Chehalis River Mainstem Tier 1		
WATER QUALITY		
Symptom	Cause	General Actions
<p>➔ Many reaches in the Chehalis Mainstem are on the 303d List for temperature, fecal coliform, and dissolved oxygen (Smith Wenger 2001).</p> <p>➔ The segments with temperature problems are scattered between RM 33.8 and RM101.7 and one segment located near RM 13. Within these areas the most impacted are:</p> <ul style="list-style-type: none"> • Between the Newaukum and Skookumchuck. • Between the Skookumchuck and Scatter Creek. • Between Scatter Creek and Porter (Smith Wenger 2001). <p>➔ The segments with dissolved temperature problems are near the mouth of the Satsop River and from Porter to the confluence of the East and West Forks of the Chehalis River (Smith Wenger 2001). Priority areas (DOE) for dissolved oxygen in the mainstem are:</p> <ul style="list-style-type: none"> • RM 70.0 • RM 77.6 – RM 97.9. 	<p>➔ Riparian degradation and loss. Lack of adequate riparian vegetation to provide shade is a likely contributor to high temperature levels.</p> <p>➔ Excessive aggradations of sediment has caused poor width-to-depth ratios which is an indicator of poor channel conditions that cause temperature problems (Smith Wenger 2001).</p> <p>➔ Causes of low dissolved oxygen in the Chehalis Mainstem are:</p> <ul style="list-style-type: none"> • From Porter to Scammon Creek – livestock waste. • From Scammon Creek to Newaukum River – urban stormwater, food processing plants, and upriver dairies. • From Newaukum River to Rock Creek – livestock waste. • From Rock Creek to the confluence of the East Fork and West Fork Chehalis River – livestock waste and sewage discharge (Pe Ell) (Smith Wenger 2001). 	<p>➔ Identify specific degraded riparian areas for restoration</p> <p>➔ Install riparian fencing to exclude or reduce livestock access</p> <p>➔ Interplant conifers in deciduous dominant areas where appropriate</p> <p>➔ Protect by fee simple or easement key properties of riparian habitat.</p> <p>➔ Remove invasive species. See Section 5.</p> <p>➔ Revegetate open riparian areas with native plants</p> <p>➔ TMDL implementation – temperature, pH, fecal coliform</p>

Chehalis River Mainstem Tier 1 FLOODPLAIN		
Symptom	Cause	General Actions
<ul style="list-style-type: none"> ➔ The areas near the confluences of the Skookumchuck River, Newaukum River, Salzer Creek, and the SF Chehalis are rated as having “poor” conditions because of extensive riprap (Smith Wenger 2001). ➔ RM 1-11 is rated as having “good” floodplain conditions (Smith Wenger 2001). ➔ RM 13-20 has lost some off-channel habitat (Smith Wenger 2001). ➔ RM 20-57 (Satsop – Grand Mound) has been identified as having areas of channel incision, but this reach is less impacted than the reaches above it (Smith Wenger 2001). ➔ RM 57-79 (Grand Mound – Stearns Creek) the mainstem appears to be incised and disconnected from floodplain and off-channel habitat. More data needed on channel incision from RM 57-79 (Smith Wenger 2001). 	<ul style="list-style-type: none"> ➔ Riprap and other bank protection. 8.1 miles of the 118 miles have been armored with riprap. The riprap is concentrated in the areas near the confluences of the Skookumchuck River, Newaukum River, Salzer Creek and the SF Chehalis (Smith Wenger 2001). ➔ Past practices of removing large woody debris from the mainstem have likely contributed to the channel incision. ➔ Splash dams. Historically, there were 7 splash dams located on the on the Chehalis Mainstem located upstream of the confluence of Bunker Creek. The effects of these splash dams are known to have had long lasting effects of channel incision (Smith Wenger 2001). ➔ Low recruitment potential from riparian corridor has likely contributed to channel incision (Smith Wenger 2001). 	<ul style="list-style-type: none"> ➔ Assess floodplain conditions and identify impacts. ➔ Assessment to focus upstream of RM 20. ➔ Implement alternative methods of bank stabilization (bioengineering). ➔ Protect by fee simple or easement key properties to facilitate natural channel migration and reconnection to the floodplain ➔ Reconnect and restore off-channel habitat identified in USACE (2002) and Ralph and Peterson (1994). ➔ Relocate gravel mining away from shorelines and 100-year floodplain. ➔ See LWD section.

Chehalis River Mainstem Tier 2 Concerns

Chehalis River Mainstem Tier 2		
LARGE WOODY DEBRIS (LWD)		
Symptom	Cause	General Actions
<ul style="list-style-type: none"> ➔ Data gap for LWD. ➔ Although detailed data is lacking for LWD quantities in the Chehalis Mainstem, the effects of historical splash dam activity, LWD removal, and poor recruitment potential from the riparian corridor caused the condition to be rated poor. 	<ul style="list-style-type: none"> ➔ Splash dams. Historically, there were 7 splash dams on the Chehalis Mainstem located upstream of the confluence of Bunker Creek (Smith Wenger 2001). ➔ Low levels of LWD. Low recruitment potential from riparian corridor has contributed to the low levels of LWD. 	<ul style="list-style-type: none"> ➔ Determine LWD levels in Chehalis Mainstem. ➔ Develop LWD supplementation plan if LWD levels are low. ➔ Install logjams and single key piece placement using large conifer if possible.

Chehalis River Mainstem Tier 2		
WATER QUANTITY		
Symptom	Cause	General Actions
<ul style="list-style-type: none"> ➔ Data from the Porter gauge and the Grand Mound gauge indicate poor water quantity conditions for the Chehalis River Mainstem (Smith Wenger 2001). 	<ul style="list-style-type: none"> ➔ Records show water rights on the Chehalis River Mainstem exceed summer instream flows by 400% (Smith Wenger 2001). ➔ Landscape manipulations that cause quick surface water runoff do not allow for aquifer recharge (groundwater). Groundwater is the main source of water for the Chehalis River, especially during the summer months. 	<ul style="list-style-type: none"> ➔ Determine if water withdrawals are being followed in accordance with current water rights. ➔ Implement activities for natural aquifer recharge ➔ Increase hydrologic continuity – reduce impervious surfaces ➔ Reduce stormwater discharge directly to streams ➔ Reduce water withdrawals from surface sources ➔ Restore wetlands for water storage

Chehalis River Mainstem Tier 3 Concerns

Chehalis River Mainstem Tier 3		
SEDIMENT		
Symptom	Cause	General Actions
<p>➔ Sediment transport appears to be a major problem in the Chehalis Mainstem (Smith Wenger 2001).</p>	<p>➔ High sediment loading and lack of LWD. Excessive sediment transport is primarily a result of high sediment loading from tributaries and a lack of LWD. The main sediment contributors are the Satsop River, Wynoochee River, Newaukum, SF Chehalis River, and Mainstem above Doty (Smith Wenger 2001).</p> <p>➔ A mass wasting site along the left bank of the mainstem at RM 11.5- 21.</p> <p>➔ A high potential soil erosion site located at RM 11.5-18.</p> <p>➔ Landslides. Shallow rapid landslides primarily in tributaries are a result of failing sidecast constructed roads and clearcuts on steep slopes (Smith Wenger 2001).</p> <p>➔ Bank erosion from RM 57 to RM 79 is likely due to lack of riparian vegetation coupled with land use practices including agriculture and urbanization (Smith Wenger 2001).</p>	<p>➔ Implement alternative methods of bank stabilization</p> <p>➔ Revegetate stream/river banks for added erosion protection</p> <p>➔ Implement corrective actions in tributaries to decrease sediment delivery into mainstem</p> <ul style="list-style-type: none"> • Satsop • Wynoochee • Newaukum • Upstream of Doty <p>➔ Reduce road densities to reduce sediment loading</p> <ul style="list-style-type: none"> • Upstream of Doty • Tributaries with high sediment contributions <p>➔ Upgrade all logging roads to comply with Forest and Fish Agreement (1999)</p> <ul style="list-style-type: none"> • Upstream of Doty • Tributaries with high sediment contributions

Chehalis River Mainstem Tier 3		
FISH PASSAGE		
Symptom	Cause	General Actions
<p>➔ No man-made fish passage barriers on mainstem.</p>		