Flowline

Data dictionary

This layer was developed by NOAA Fisheries as part of the Chehalis Aquatic Species Restoration Plan planning process and represents a modified version of the NHD streamline network. Line segment locations and species spawning distributions were modified by ICF for the EDT model, and provided in an updated layer to NOAA. NOAA segmented the stream network into 200m segments and calculated a variety of metrics for each stream segment. In the data processing steps used to run the NOAA LCM, modelling results from other efforts were joined to this layer, but these are not shown here. For example, Chehalis Thermalscape temperatures (Winkowski, 2019) and EDT wetted widths were used but are not given here.

Field Name	Description	Units
Reach	EDT Reach name	
UniqueID	EDT Reach ID	
noaaid	NOAA Reach ID, each reach is approx. 200m	
Macrohab	Habitat type: large river, small stream or tidal	
Area_km2	area of catchment draining to this reach (National Elevation Dataset, https://ned.usgs.gov)	Km2
mn_precip	mean precipitation in the catchment draining to this this reach (Prism Climate Data, https://prism.oregonstate.edu/)	mm
mn_imperv	Mean percent cover by impervious surfaces in the catchment draining to this reach	%
slope	Slope of reach	%
BF_width	Current bankfull width, calculated by NOAA	m
wet_width	Current wetted width, calculated by NOAA	m
Spawn_Surv	This field is used for estimation of large river spawning habitat. If the reach was visible, spawning gravel was digitized as a polygon in the Riffle layer. If not, this field has an "N" and the average spawning gravel for the Large River reaches in this subbasin was used.	
tm_chg_np	Change in temperature from natural potential conditions due to reduction in stream shading, as predicted by Seixas et al. (2018). The Seixas temperature model predicts Current and Historical temperatures which we use to calculate a temperature difference which is applied to the Chehalis Thermalscape modeled temperatures (Winkowski, 2019) to calculate historical temperatures.	°C

tm_chg_mid	Change in temperature by mid-century (2040) due to increased stream shading through growth of the riparian canopy, as predicted by Seixas et al. (2018). The Seixas temperature model predicts Current and future (2040) temperatures which we use to calculate a temperature difference which is applied to Chehalis Thermalscape modeled temperatures (Winkowski, 2019) to calculate future temperatures.	°C
tm_chg_lat	Change in temperature by late century (2080) due to increased stream shading through growth of the riparian canopy, as predicted by Seixas et al. 2018. The Seixas temperature model predicts Current and future (2080) temperatures which we use to calculate a temperature difference which is applied to Chehalis Thermalscape modeled temperatures (Winkowski, 2019) to calculate future temperatures.	°C
can_ang	Canopy opening angle	degrees
hist_ang	Canopy opening angle using modeled historical tree heights	degrees
pass_tot	Cumulative passage percentage from the mouth of the river to this reach (Washington Department of Fish and Wildlife, https://geodataservices.wdfw.wa.gov/hp/fishpassage/index.html)	%
culv_list	List of obstructions downstream of this reach contributing to the pass_tot (Washington Department of Fish and Wildlife, https://geodataservices.wdfw.wa.gov/hp/fishpassage/index.html)	
lc	Dominant landcover in a 30 m buffer around this reach (NOAA C-CAP, https://coast.noaa.gov/digitalcoast/data/home.html)	
sed_curren	Modeled fine sediment percentage based on current conditions	%
sed_hist	Modeled fine sediment percentage based on historical conditions	%
ef_surv_cu	Modeled egg to fry survival for this reach under current conditions	%
ef_surv_hi	Modeled egg to fry survival for this reach under historical conditions	%
Shape_Leng	Length of reach	m

References

Seixas GB, Beechie TJ, Fogel C, Kiffney PM. Historical and future stream temperature change predicted by a Lidar-based assessment of riparian condition and channel width. JAWRA Journal of the American Water Resources Association. 2018 Aug;54(4):974-91.

Winkowski, J.J. & Zimmerman, M.S. 2019. Thermally suitable habitat for juvenile salmonids and resident trout under current and climate change scenarios in the Chehalis River, WA. Washington Department of Fish and Wildlife.