

# HS Values Group: Chum Worksheet

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1. The current fish bearing network is defined by a gradient cutoff of 5%. Is this appropriate for Chum in the OWC study area?

a. If not, please suggest a more appropriate value:

b. Suggest other cutoffs appropriate to define the Chum fish bearing network?

2. Are the default HS curves provided in the Chum HS Curve Reference Sheet appropriate for the 4 selected outer coastal rivers?

Channel Gradient Yes \_\_\_ No \_\_\_ Your confidence in this answer: High \_\_\_ Medium \_\_\_ Low \_\_\_

Floodplain Width/ Channel Width Yes \_\_\_ No \_\_\_ Your confidence: High \_\_\_ Medium \_\_\_ Low \_\_\_

Mean Annual Flow (CMS) Yes \_\_\_ No \_\_\_ Your confidence: High \_\_\_ Medium \_\_\_ Low \_\_\_

**Please indicate revisions you recommend on the Chum HS Curve Reference Sheet below.**

3. What additional intrinsic parameters would significantly improve the Chum IP model?

**Lists of intrinsic variables are provided. Circle key variables and suggest information sources to build HS curves, if possible.**

**4. How would you define the range of scores in the high, medium and low IP bins for Chum? Maximum suitability =1 and Lowest suitability = 0**

**High=**

**Medium=**

**Low=**

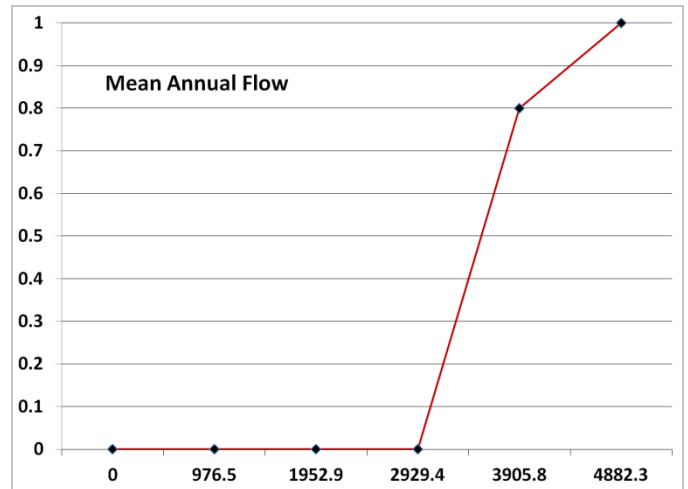
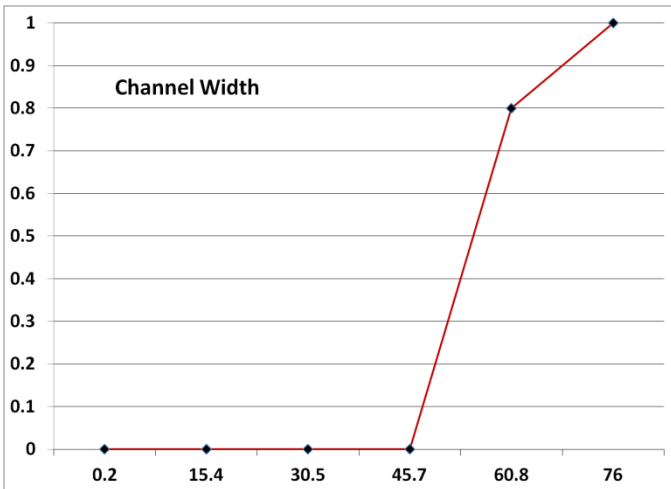
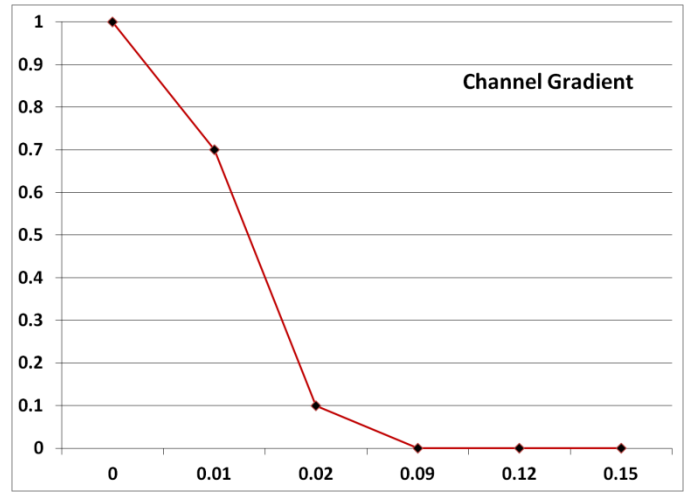
**5. Are separate sub-regional models within the OWC Study area needed for Chum?**

**The current model uses hydrologic properties that are divided into regression regions according to Kresch, 1998 (see wall maps)**

**Your confidence in this answer: High\_\_\_ Medium \_\_\_Low \_\_\_**

# Chum HS Curve Reference Sheet

<b>Channel Gradient</b>						
Suitability	1	0.7	0.1	0	0	0
Gradient	0	0.01	0.02	0.09	0.12	0.15
Weighting Scheme	1					
<b>Channel Width (Meters)</b>						
Suitability	0	0	0	0	0.8	1
Width	0.2	15.4	30.5	45.7	60.8	76
Weighting Scheme	1					
<b>Mean Annual Flow (CMS)</b>						
Suitability	0	0	0	0	0.8	1
Flow	0	976.5	1952.9	2929.4	3905.8	4882.3
Weighting Scheme	1					



## Lists of Intrinsic Variables

**Table 2 from 2008 PNAMP.** Examples of some hydrogeomorphic and climatic variables related to habitat quality that can be obtained from a modeled stream network and digital elevation models (DEM) (Sheer et al., in prep.).

Variable	Source
Channel gradient <sup>1,2</sup>	From DEM <sup>3,4</sup>
Mean annual flow <sup>1,2</sup>	Regression of gauge data to drainage area (DEM) and mean annual precipitation <sup>3</sup>
Channel constraint <sup>1,2</sup>	Valley-width index (ratio of valley to channel width, with channel width based on regional regression to mean annual flow) correlated with field inventoried constraint categories. Valley width estimated from DEM <sup>3,6</sup>
Mean Summer (August) Low Air Temperature <sup>1</sup>	Parameter-elevation Regressions on Independent Slopes Model (PRISM) <sup>1</sup>
Valley-width transitions (e.g., from confined to unconfined channels) <sup>5</sup>	From DEM <sup>5</sup>
Tributary confluences <sup>5</sup>	From DEM <sup>5</sup>

<sup>1</sup> Agrawal et al. (2005) ; <sup>2</sup> Burnett et al. (2003, 2007); <sup>3</sup> Clarke et al. (2008) <sup>4</sup> Davies et al. (2007) <sup>5</sup> Benda et al. (2004, 2007); <sup>6</sup> Hall et al. (2007).

**Table B9 from 2008 PNAMP. Intrinsic variables suggested by workshop participants. (In addition to table 2 above.)**

- Temperature (Agrawal et al., 2005; Cooney and Holzer, 2007)
- Erosion, sediment deposition potential (Benda et al., 2007; Cooney and Holzer, 2007)
- Downstream variation in valley confinement (Benda et al., 2007)
- Downstream variations in channel gradient (e.g., upstream of a fan or earthflow, Benda et al., 2007)
- Tributary confluences (Benda et al., 2007)
- Basin soils, geology (Cooney and Holzer, 2007)
- Patch size, abundance, separation distance between high IP zones (Benda et al., 2007)
- Climatic attributes, such as mean annual snow fall, or 100-year, 24-hour storm intensity
- Hydrologic attributes, such as 100-year peak discharge, mean annual low flow, skew of the flow duration curve
- Proportion of watershed in wetlands
- Elevation
- Downstream variation in confinement
- Tributary confluences
- Patches of habitat surrounding stream reach
- Distance from the ocean
- Measuring connectivity of high quality patches