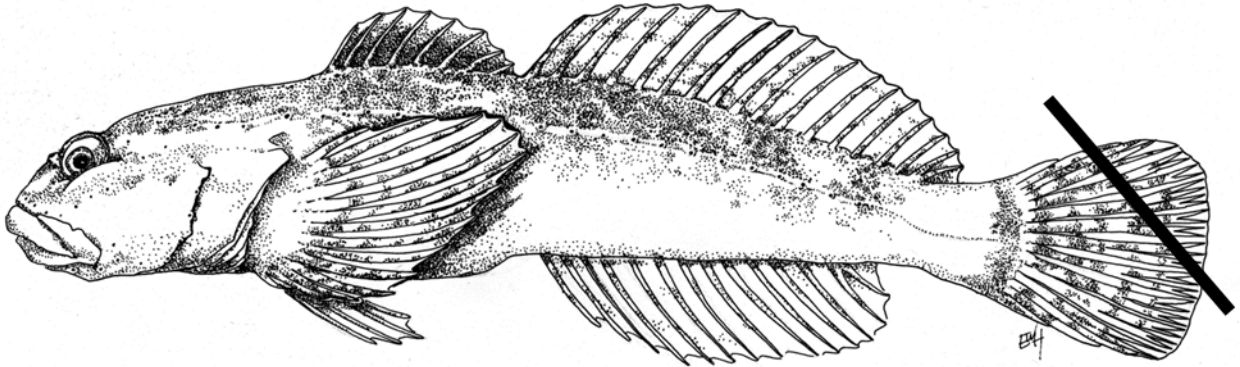


## Tissue sampling protocol for sculpins



My colleagues and I are using DNA barcoding to identify and locate potential conservation units—subspecies, ESUs, DPSs, stocks, or species new to science—of sculpin from throughout western North America. Your help is sought to obtain:

- Tissues from up to 5 individuals (or even 1–2) of all sculpin species (see page 2) from individual sites in any river basin in western North America—the Columbia, Colorado, Fraser, Yukon, or coastal river basins, and the Great Basin.
- Samples from 1–2 sites per 6<sup>th</sup>-code (HUC-12) subwatershed, which is equivalent to a second-order or larger named stream on a USGS 1:24000 topo map. Ultimately, I'd like to have tissues from 5–10 6<sup>th</sup>-code watersheds in each major river basin i.e., a 4<sup>th</sup>-code (HUC-8) subbasin ([http://water.usgs.gov/GIS/wbd\\_huc8.pdf](http://water.usgs.gov/GIS/wbd_huc8.pdf)), but will gladly take more sites.

### Data

To ensure that your contributions can be used, samples must be handled and stored properly. Three elements are key: labeling, sterility (prevent cross-contamination of samples; don't store them touching one another), and storage (don't store wet or in the sun). I'd like:


- Fin clips, stored and labeled individually in separate:
  - parts of a sheet of chromatography paper (preferred; see page 2)
  - coin envelopes
  - vials in 90%+ ethyl alcohol
- GPS location: either UTM or latitude-longitude
- Date
- Your name & contact information
- If you need collection materials, I will mail chromatography forms to you.
- Please mail tissue samples to me by 31 October 2019)

For more information, or to send samples, contact me:

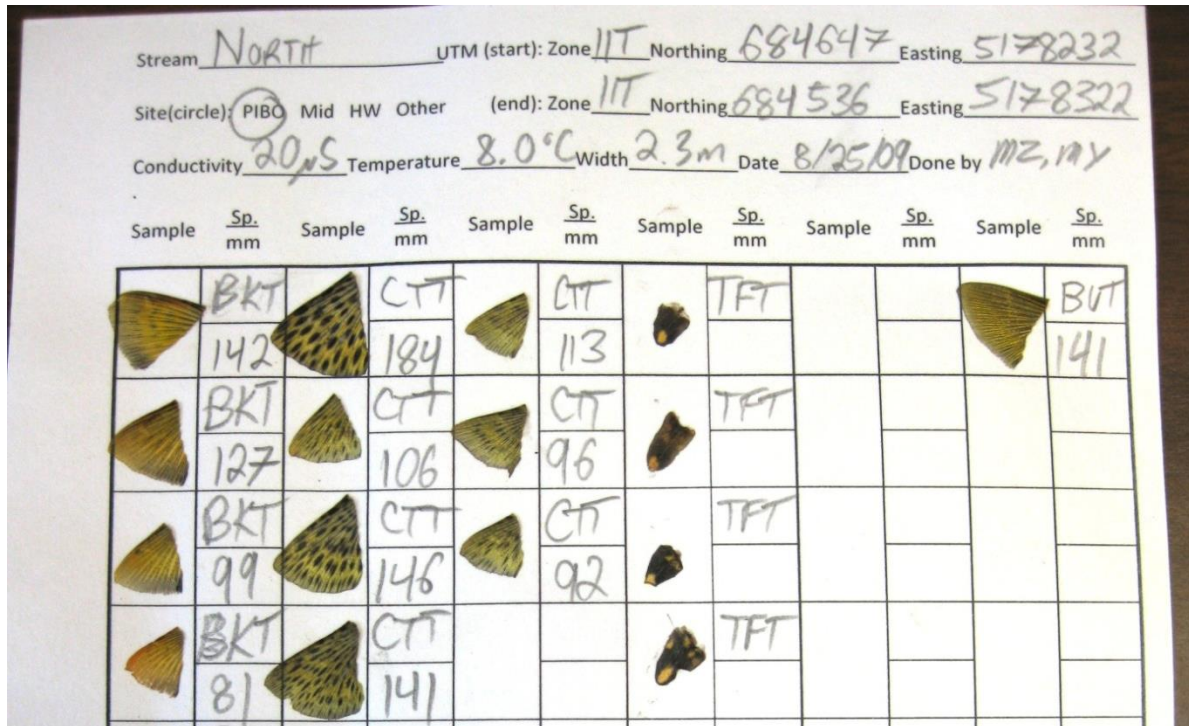
Michael Young ([michael.k.young@usda.gov](mailto:michael.k.young@usda.gov); 406-542-3254), U.S. Forest Service, Rocky Mountain Research Station, 800 E. Beckwith Avenue, Missoula, Montana 59801

**Thanks!**

Figure 1. Fin clips and data on chromatography paper. Many of these fin clips are larger than

needed. An ideal size looks like this: .

Sandwich each tissue sheet between two pieces of plain copy paper (after the tissues dry a bit, ideally overnight) for protection and mailing. Keep the tissue sheets dry, cool, and out of the sun, and they will remain useable for DNA extraction for years.



### Sculpin species of interest

Inland/Mottled Group		Coastal/Prickly Group	
<i>Cottus bairdii</i>	Mottled sculpin	<i>Cottus aleuticus</i>	Coastrange sculpin
<i>Cottus beldingii</i>	Paiute sculpin	<i>Cottus asper</i>	Prickly sculpin
<i>Cottus bendirei</i>	Bendire's sculpin	<i>Cottus gulosus</i>	Riffle sculpin
<i>Cottus cognatus</i>	Slimy sculpin	<i>Cottus klamathensis</i>	Marbled sculpin
<i>Cottus confusus</i>	Shorthead sculpin	<i>Cottus marginatus</i>	Margined sculpin
<i>Cottus extensus</i>	Bear Lake sculpin	<i>Cottus perplexus</i>	Reticulate sculpin
<i>Cottus greenei</i>	Shoshone sculpin	<i>Cottus pitensis</i>	Pit sculpin
<i>Cottus hubbsi</i>	Columbia sculpin	<i>Cottus princeps</i>	Klamath Lake sculpin
<i>Cottus leiopomus</i>	Wood River sculpin	<i>Cottus tenuis</i>	Slender sculpin
<i>Cottus rhotheus</i>	Torrent sculpin		
<i>Cottus schitsuumsh</i>	Cedar sculpin		