

# UWT Daily Planet

UWT Environmental Science Program

Wednesday, September 24, 2008

## What's Inside:

Teaching in England.....	2
Service Learning Coordinator at Your Service! .....	2
Learning in England .....	3
Join In! .....	3
Professor Swims With Leeches in the Name of Science.....	4
Wapato Lake Headache.....	5
UWT Nerds Sports Report .....	5
Crossword Puzzle .....	6
About our Organization.....	6

## Students Seek to Catch Cheaters in Biology

Article by Bridget Mason

Gasp, Are there cheaters in Biology class at UWT? Fortunately, I am not talking academic honesty here.

Catching cheaters is a laboratory project in introductory Biology. The goal is to catch cheaters in the salmon industry who mislabel their product. As part of a 4-week exercise, students analyze salmon samples purchased from their grocer of choice. Students use DNA sequencing and phylogenetic analysis to identify farmed Atlantic salmon mislabeled as wild Pacific salmon.



Students analyzing extracted DNA samples from store-bought salmon

A recent addition to the Catching Cheaters laboratory exercise is attempting to quantify the amount of pigment in salmon samples. Theoretically, the wild salmon should have higher amounts of pink pigment or **carotenoids** *Anthaxanthin* and *canthaxanthin*, which they obtain naturally from their diet of krill and algae. Aquaculturist feed farmed salmon artificially colored pellets in an attempt to resemble wild salmon. Without this artificial coloring, the salmon fillet would be an unappetizing gray color.

Farmed Atlantic salmon are an interesting biological topic that may have global environmental impacts. They are of great

concern to human health due to the higher concentrations of PCBs and heavy metals.<sup>1</sup> Escaped Atlantic salmon also pose a threat to native salmon populations due to the potential of spreading diseases or increased competition for food and habitat.<sup>2</sup>

Whether or not local distributors are passing off Atlantic salmon as wild salmon remains to be seen. Erica Cline and Lia Wetzstein presented the Catching Cheaters project at the Northwest Biology Instructors Organization Conference (<http://nwbio.net>) that was held last spring. Bonnie Becker also had a separate presentation on GIS at the Biology conference.

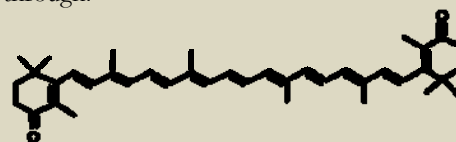
### Further reading on farmed salmon:

<sup>1</sup> Nash, Colin E. 2003. Interactions of Atlantic salmon in the Pacific Northwest: VI. A synopsis of the risk and uncertainty. Fisheries Research. 62(3): 339-347.

<sup>2</sup> Bisson, Peter A. 2006. Assessment of the risk of invasion of national forest streams in the Pacific Northwest by farmed Atlantic salmon. Gen. Tech. Rep. PNW-GTR-697. Portland, OR: USDA, Forest Service, Pacific Northwest Research Station. 28 p.

### Carotenoid [kuh-rot-n-oid]

Member of a group of fat-soluble red and yellow pigments that are chemically similar to carotene. Carotenoids naturally occur in plants and, after being ingested by animals, are stored in their fat cells. Carotenoids are responsible for the beautiful coloring of leaves in the fall. In fall, chlorophyll production slows so the green color fades allowing the oranges and yellows to shine through.



Canthaxanthin molecule









