



Biology: Phylogenetic analysis

Paper citation: Palermo MP, Elwess NL (2014). Characterization and Phylogenetic Analysis of the Cytochrome B Gene (*cytb*) in *Salvelinus fontinalis*, *Salmo trutta* and *Salvelinus fontinalis* X *Salmo trutta* within the Lake Champlain Basin. J Emerging Investigators 18: 1-9

Paper questions

In reading through the assigned papers, please answer the following questions:

1. What is phylogenetic analysis?
2. For what reasons do the authors propose that routine genetic screening of trout populations is important?
3. Why is the cytochrome b (*cytb*) gene an attractive genetic marker for DNA analysis?
4. Describe the authors' experimental approach.
5. What was a secondary hypothesis of the experiment?
6. The authors find that there are codon usage differences between the genetic samples collected by the others and those in public genetic databases. What are codons? Why is it interesting that the authors found differences in codon usage?
7. What relationship do the authors find between distance and genetic diversity, based on their samples collect in Vermont vs. those collected in New York?
8. Propose two follow-up experiments that could be performed given the data presented in this paper.