Assignment 1: Target Strength Evolution
Due: Oct. 8, 2018

Target strength (TS) is critical parameter when calculating fish density using echo integration and has a history in attempts to identify fish species. How has the availability and use of different technologies (i.e. single beam, split beam, acoustic camera, multiple frequencies, broadband) and analytics changed approaches to classifying acoustic targets? In the final paragraph of your report, forecast important research areas that should be pursued in this area.

Note:
Assignment should not exceed 3 pages in length. Please include reference list at the end of the document. Please don't fill up pages with summaries of reference papers. I am looking for a critical review of target strength research, contribution milestones, and where you think research in this area is headed.

Rubric:
Judgement (4); Changes in research (12); Future Research Areas (4)

Evaluation

This was a critical thinking/writing exercise and a range of answers were possible and acceptable. You were asked to address two questions:

1) How has the availability and use of multiple frequencies changed our approach to TS and the process of discriminating, classifying, and identifying acoustic targets

2) Identify important target strength research areas.

Marking:

Judgement (4 points): Were the statements and arguments well-reasoned and consistent with the referenced TS research?

Changes in research (12 points): I was looking for an evaluation of the impact of multifrequencies on the thinking and measurement of TS, and then, how this development is translated to the classification of acoustic targets.

Research Areas (4 points). This could encompass a range of possibilities, based on promising research from the turn of the century to date. Additional research into biological and behavioral sources of TS variability, platform development for multifrequency measurements, integrated sampling with other instruments are all examples.