

Nested Data Sets

(Small, student-collected dataset within large, professionally collected dataset)

Procedure:

- 1) Students collect and interpret a local data set.
- 2) (optional) Students from multiple schools combine similar datasets to aggregate a larger sample or span a larger area.
- 3) Students interpret larger professionally collected dataset(s) which encompass and expand beyond the circumstances of their self-collected dataset.

Theory of Action:

While collecting and interpreting the local dataset, students gain experience-based understanding of the potential limitations of the data and potential causal processes or influencers in the system under study. They carry these understandings forward into their interpretation of the larger dataset, and thus are more appropriately cautious in their treatment of the data and more insightful in their interpretation of its meaning.

Example:



- 1) On a local field trip to the Hudson River, students collect physical and chemical data about the river, including temperature and salinity.

- 2) Students combine their data with that collected by other school groups on the same day, which allows them to detect and interpret spatial patterns, such as upstream/downstream gradients.

- 3) Students access professionally collected data from the HRECOS sensor network (<http://www.hrecos.org>), which allows them to detect and interpret changes over time, including tidal cycles and rainfall-related trends.

HUDSON RIVER ESTUARY

