Mapping Environmental Variables to Model Essential Fish Habitat

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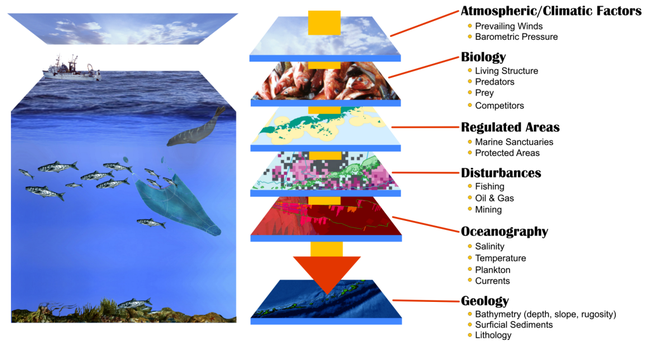
1

"those waters & substrate necessary to fish for spawning, breeding, feeding or growth to maturity"

ALASKA
70% U.S. shelf
28% EEZ
47K mi shoreline

Scope of the federal mandate is enormous – must define EFH for all life stages of all managed species. An efficient and objective method is needed.

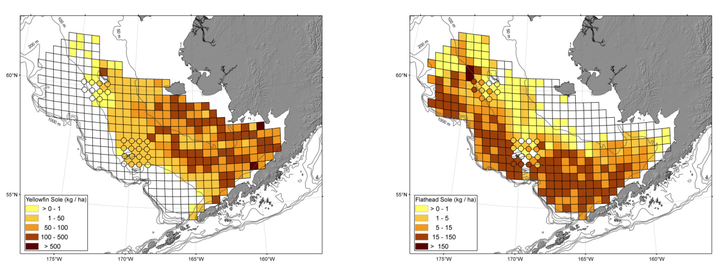
2



$$Y = a_1 X_1 + a_2 X_2 + a_3 X_3 + \ldots$$

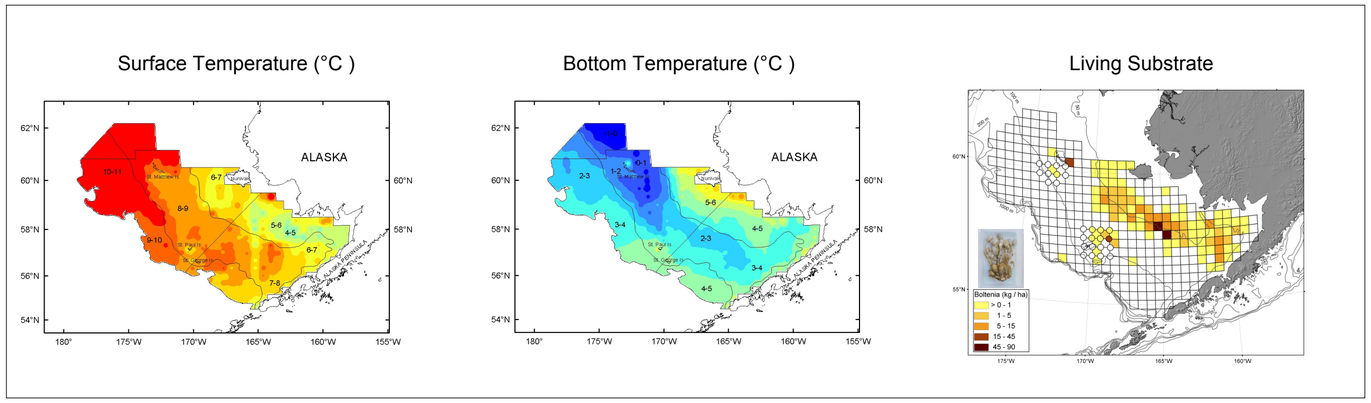
EFH model approach – spatially link fish abundance with physical and biological variables. Habitat quality is thus judged "through the fish's eyes".

3



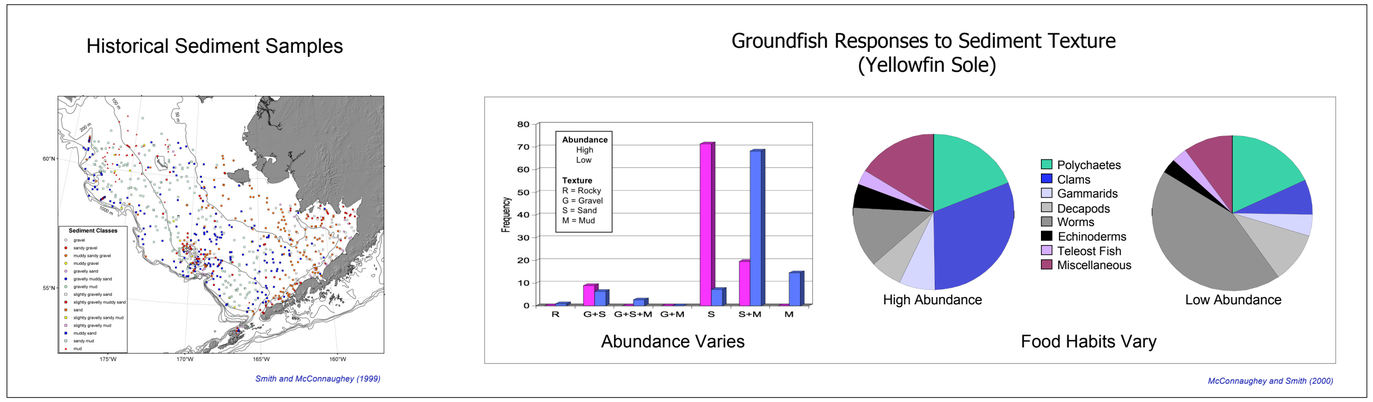
Annual bottom trawl surveys provide excellent time series of biological data (1982-2006).

4



Some environmental data are available to explain fish abundance, however additional habitat variables are needed to adequately characterize EFH.

5



Bottom-feeding fish associate with particular sediment (and benthic prey) types. However, traditional sampling methods are extremely inefficient for large areas.

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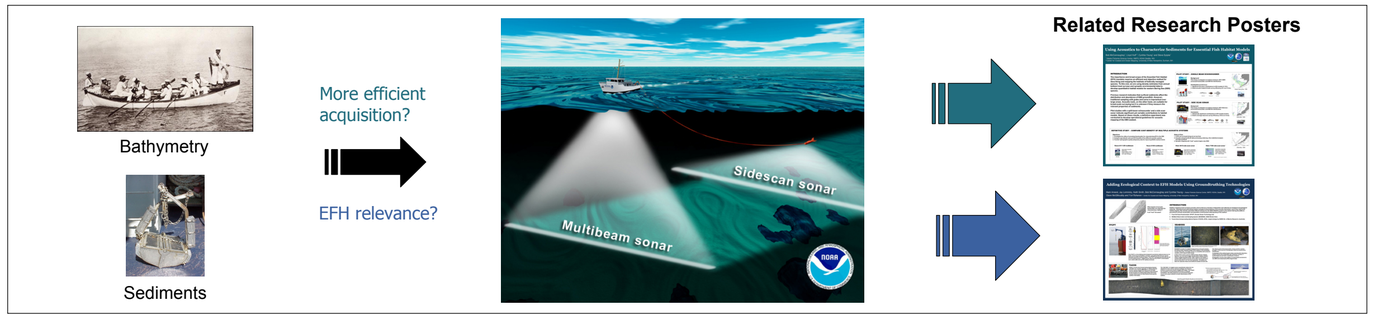

Efficient characterization of the seabed is required. Acoustic methods are promising, but unproven for EFH. Backscatter interpretation requires effective groundtruthing.

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