Applications of electronic technologies to science, management, enforcement

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Alaska Fisheries Science Center

npr

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Episode 932: Deep Learning With The Elephants

August 9, 2019 · 5:24 PM ET

25-Minute Listen

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NOAA FISHERIES

- Vessel locations
- Catch / bycatch information

- Environmental information (prediction)

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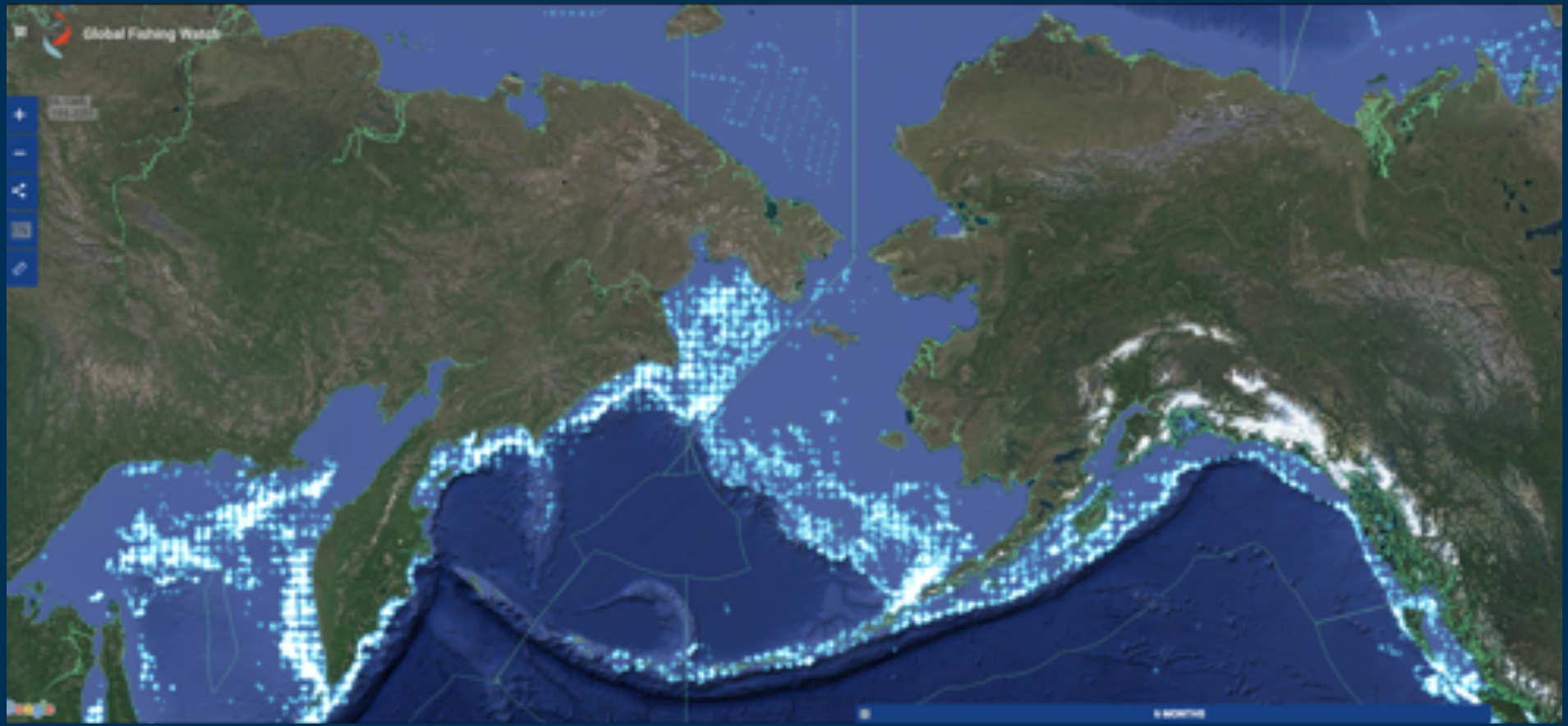

Machine learning > Deep learning > Convolutional Neural networks
Google Cloud > Google BigQuery

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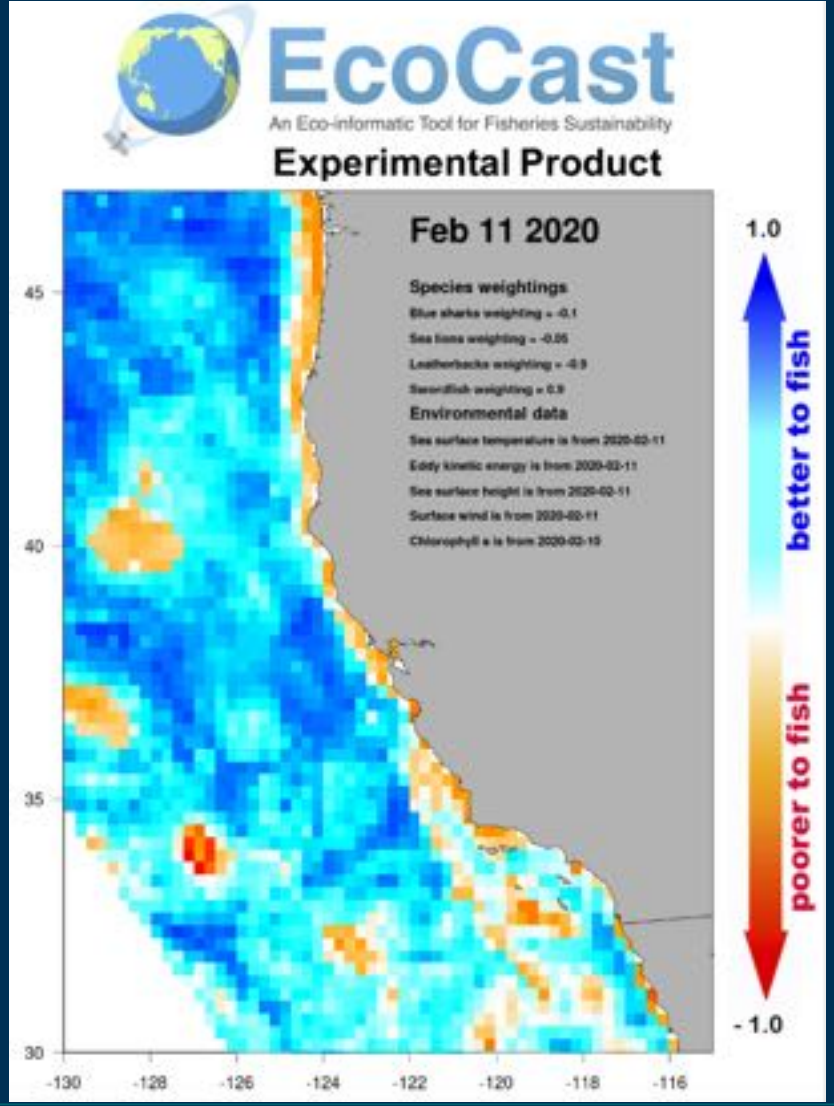
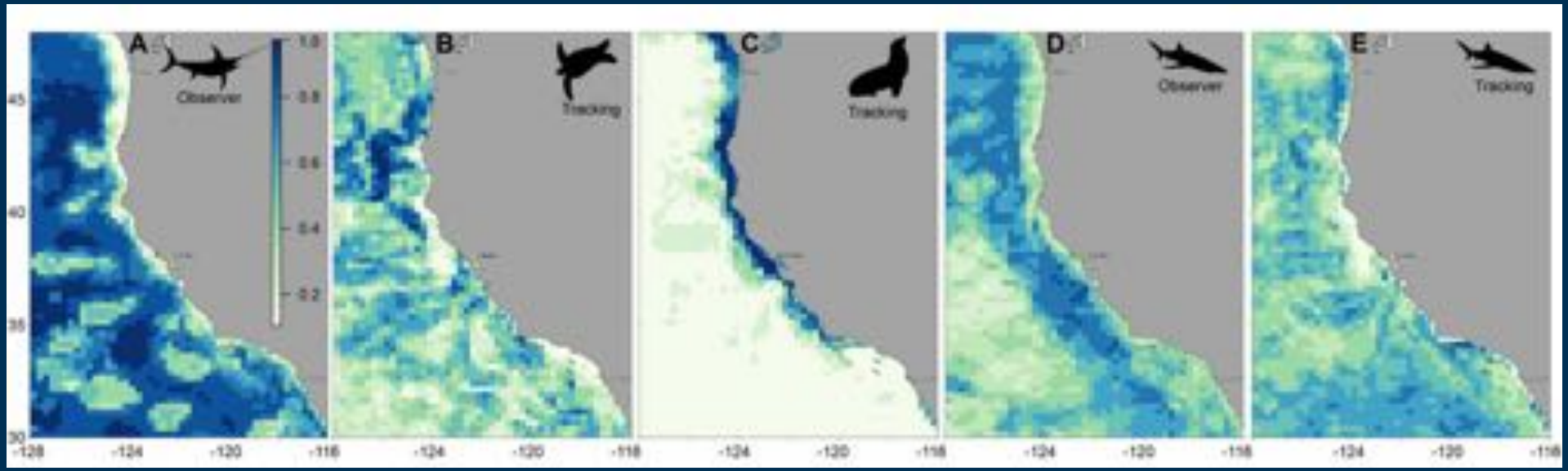


Southwest Fisheries Science Center

Hazen et al., 2018

Welch et al., 2019



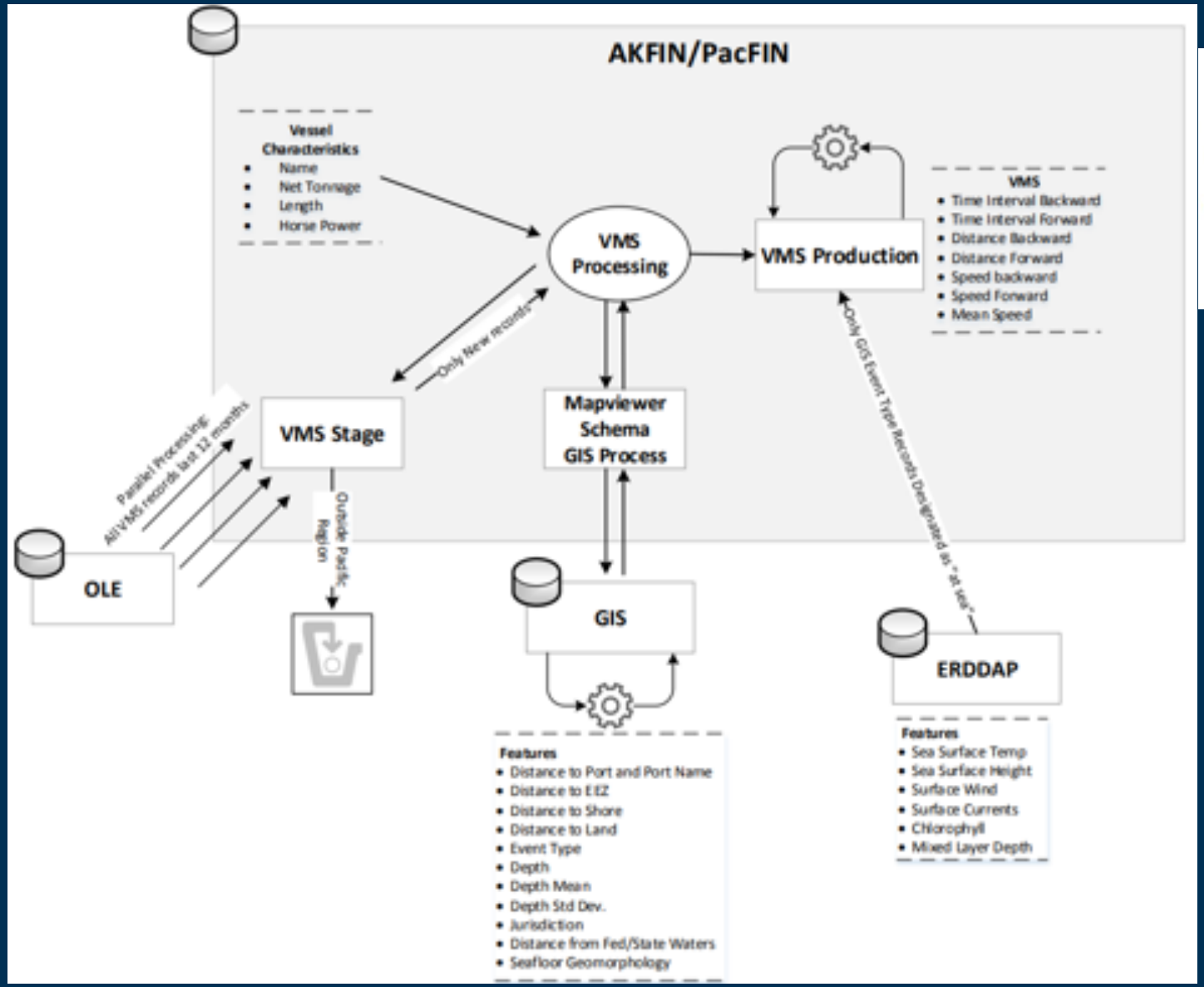
Habitat suitability predictions for individual species for 1 August 2012 that inform the EcoCast tool, from low (white) to high (blue).

Depth, temperature, chlorophyll, wind, lunar phase, currents, …

How do we make these types of applications More accessible for NOAA fisheries nationwide?

Rob Ames
Brett Holycross
Camille Kohler
Bob Nigh

Bob Ryznar



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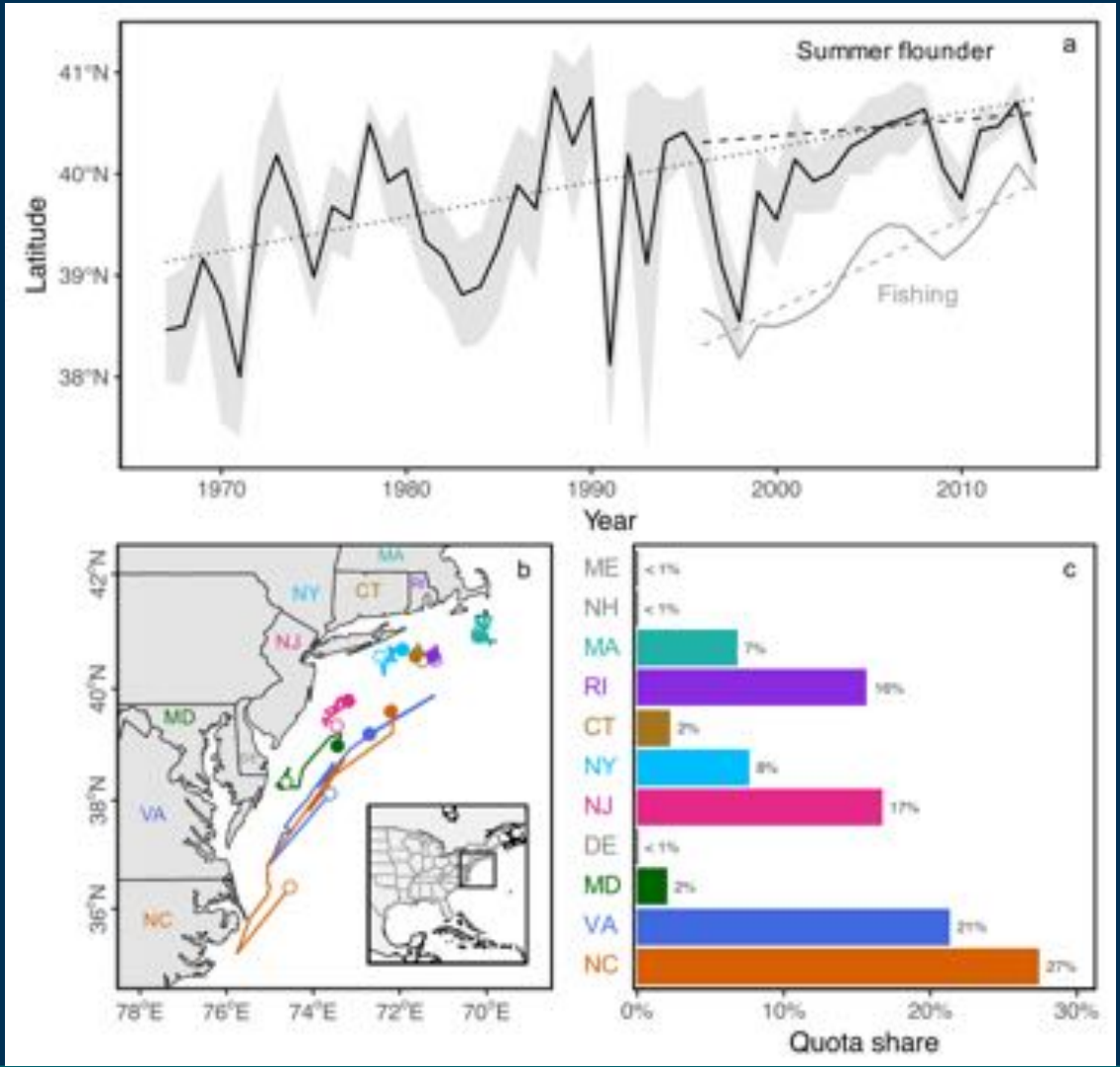
Funding:
NOAA FIS Program

Questions?



Dubik et al., 2019

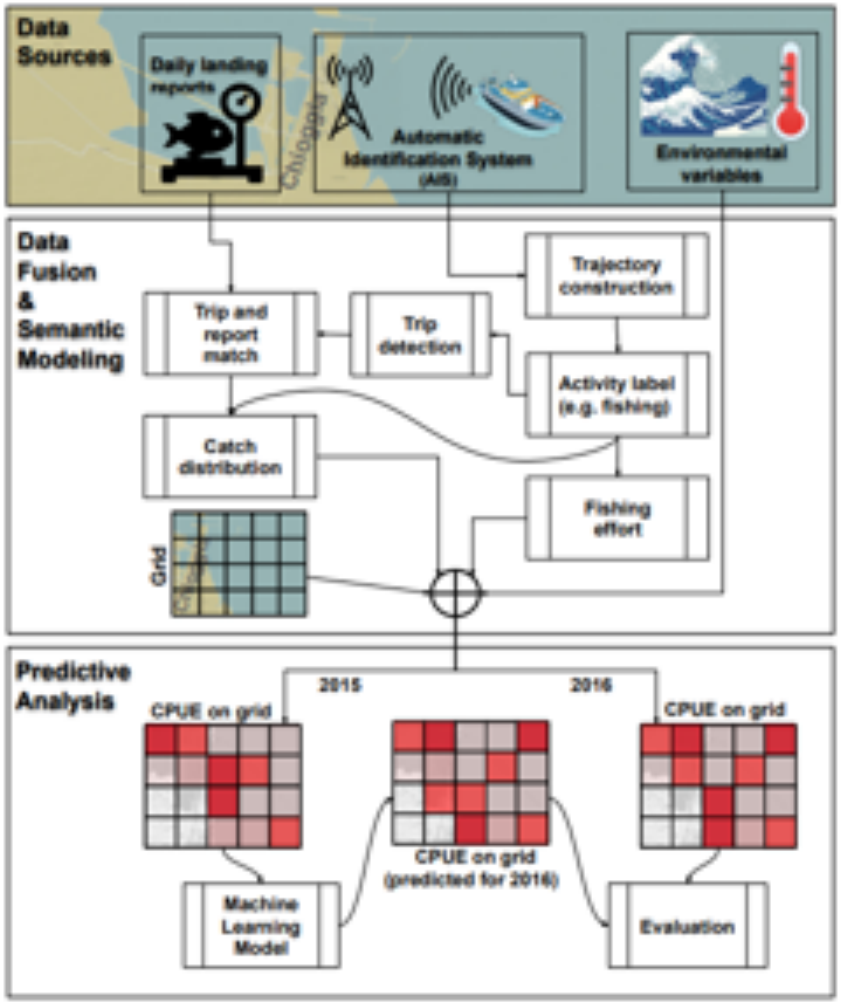


Fig. 1. An overview of all the steps of the framework for predicting fishing catches.

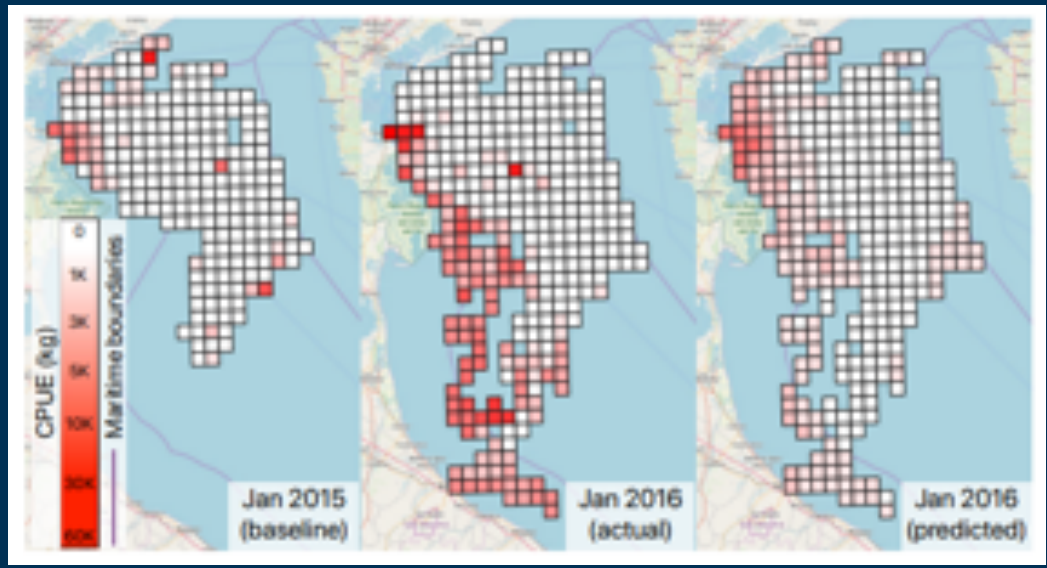


Fig. 3. CPUE over grid cells for January. Actual values for 2015 are the baseline for Jan. 2016 (left). Actual values for Jan. 2016 (middle) are used in the evaluation of values predicted by our model for Jan. 2016 (right).

Predicting Fishing Effort and Catch Using Semantic Trajectories and Machine Learning *