

ICES CM 2016/I:527

Seasonal forecast of the timing of the Maine lobster fishery

Katherine E. Mills and Andrew J. Pershing

The Maine lobster fishery is one of the most valuable in the United States, worth over \$616M in 2015. There are currently no legal restrictions on when lobstermen can fish. However, catch patterns exhibit a strong annual cycle that is closely linked to ocean temperature, which cues inshore migration, activity levels, and molting of lobsters—all of which make them more available to the fishery. When the annual cycle is disrupted, it can impact the supply and price of lobsters, as was observed during a marine heat wave in 2012. Based on this experience, we developed a seasonal forecast of the timing of the summer uptick in the Maine lobster fishery. Using temperatures at 50m from buoys in the Gulf of Maine, we can reliably forecast in April when lobster landings will begin to increase rapidly for the summer. The 2-3 month lead time enables lobstermen, dealers, and processors to appropriately plan for the season and align their capacities with the expected timing of landings. Now that an operational system is in place at a statewide scale, we are working closely with the Maine lobster industry to develop improvements that will enable the industry to adapt to rapid changes underway in the Gulf of Maine. Based on industry input, the forecast is being refined to smaller spatial scales to be relevant to specific regions of Maine, and we are honing messaging and communication of forecast information.

Keywords: forecasting, seasonal, lobsters, climate adaptation

Contact author: Katherine E. Mills; Gulf of Maine Research Institute, 350 Commercial St., Portland, ME 04101 USA; kmills@gmri.org; 207-228-1657