

BACKGROUND

The Commercial Fisheries Research Foundation, in partnership with the University of Rhode Island Graduate School of Oceanography and local fishermen (F/V Amelia Anne, F/V Ashley Ann II, and F/V Erica Knight), is conducting pre-construction fisheries monitoring surveys of the South Fork Wind Farm. The ventless trap survey aims to provide baseline data on lobster and crab abundance, distribution, habitat use, and movement data within the South Fork Wind development area and two reference control areas to the east and west of Cox Ledge (Figure 1) following a Before-After-Control-Impact (BACI) design. The BACI survey is designed to collect data before and after the wind farm is constructed in both the area which will be impacted by development and the two control areas. Once data is collected after South Fork Wind is constructed, this design allows for analysis to differentiate impacts attributable to the wind farm development versus interannual variability in the three survey areas. This survey also builds upon the Southern New England Cooperative Ventless Trap Survey (SNECVTS) which surveyed similar areas in 2014, 2015, and 2018.

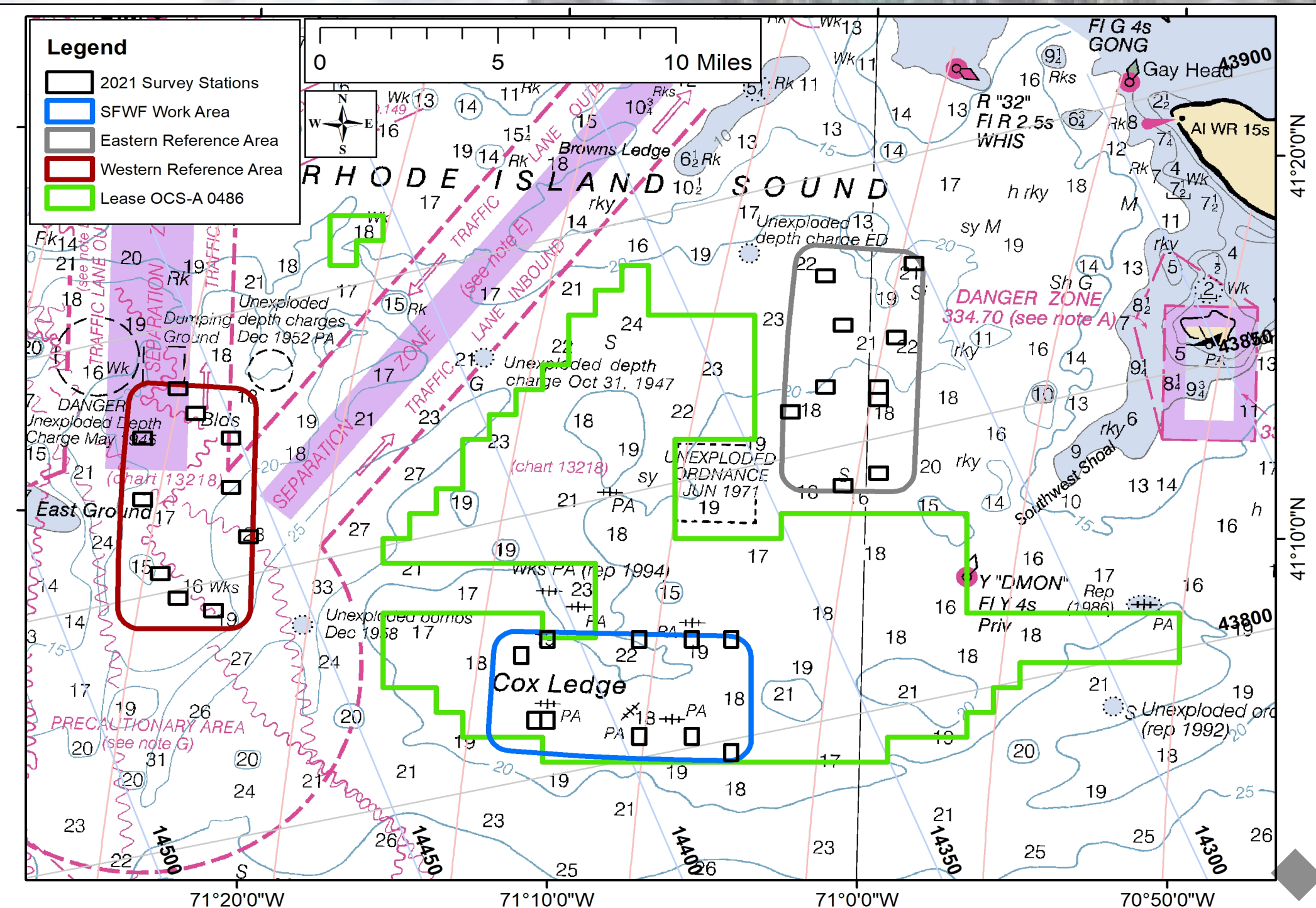


Figure 1. South Fork Ventless Trap Survey study areas and 2021 sampling stations.

SURVEY METHODS

Ventless Trap Survey

Ten stations per survey area were randomly selected for sampling, which was conducted twice per month from May – November 2021 with target soak times of five days. One trawl of ten traps (six ventless and four standard vented) was sampled at each station, with abundance and detailed biological data collected on lobsters, Jonah crab, and all bycatch species caught. Data parameters collected for each individual lobster and Jonah crab include:

- Sex
- Size
- Shell hardness
- Egg status
- Cull status
- Mortality
- Shell disease severity (lobster only)
- V-notch status (lobster only)

Lobster Tagging

Lobsters were tagged with Floy T-Bar tags to provide broad scale movement data in and around the three survey areas. Recapture data was collected as part of the regular survey sampling trips and by commercial fishermen who caught and reported tagged lobsters.

Habitat Survey

The habitat type of each sampling station in the two reference areas was evaluated using a HD video camera sled system. Bottom water temperatures were also continuously monitored at all sampling stations using Onset HOBO TidBit Temperature Loggers.

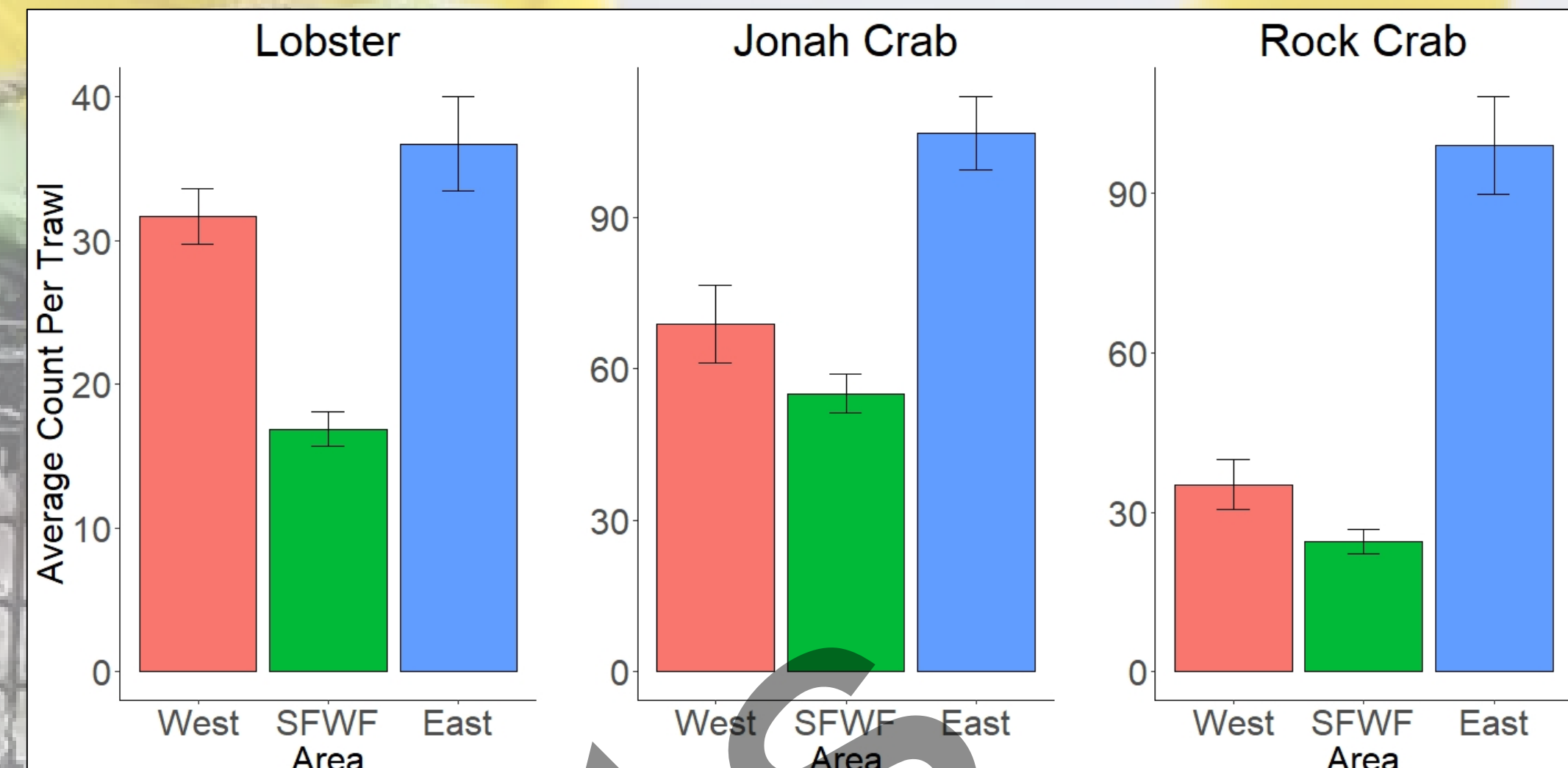


Figure 2. 2021 lobster, Jonah crab, and rock crab average count per trawl (± standard error) by survey area.

2021 RESULTS

Overall, the eastern control area had the highest abundance of lobster, Jonah crab and rock crab, while the South Fork area had the lowest abundance of all three species (Figure 2). The catch composition in the survey changed throughout the seven month sampling period with peak rock crab abundance in May and June, followed by the highest lobster abundance from July–September, and finally Jonah crab peak abundance in October and November. Lobster, Jonah crab, and rock crab were the most abundant species in the survey catch, followed by black sea bass, cunner, red hake, ocean pout, and conger eel. A total of 1,376 lobsters were tagged with t-bar tags in 2021, with 113 recaptures from the ventless trap survey sampling trips and 41 recaptures reported from commercial fishermen. Comparing only the South Fork area to 2014–2018 SNECVTS data in the same area, 2021 had relatively high lobster abundance, low Jonah crab abundance, and average rock crab abundance (Figure 3).

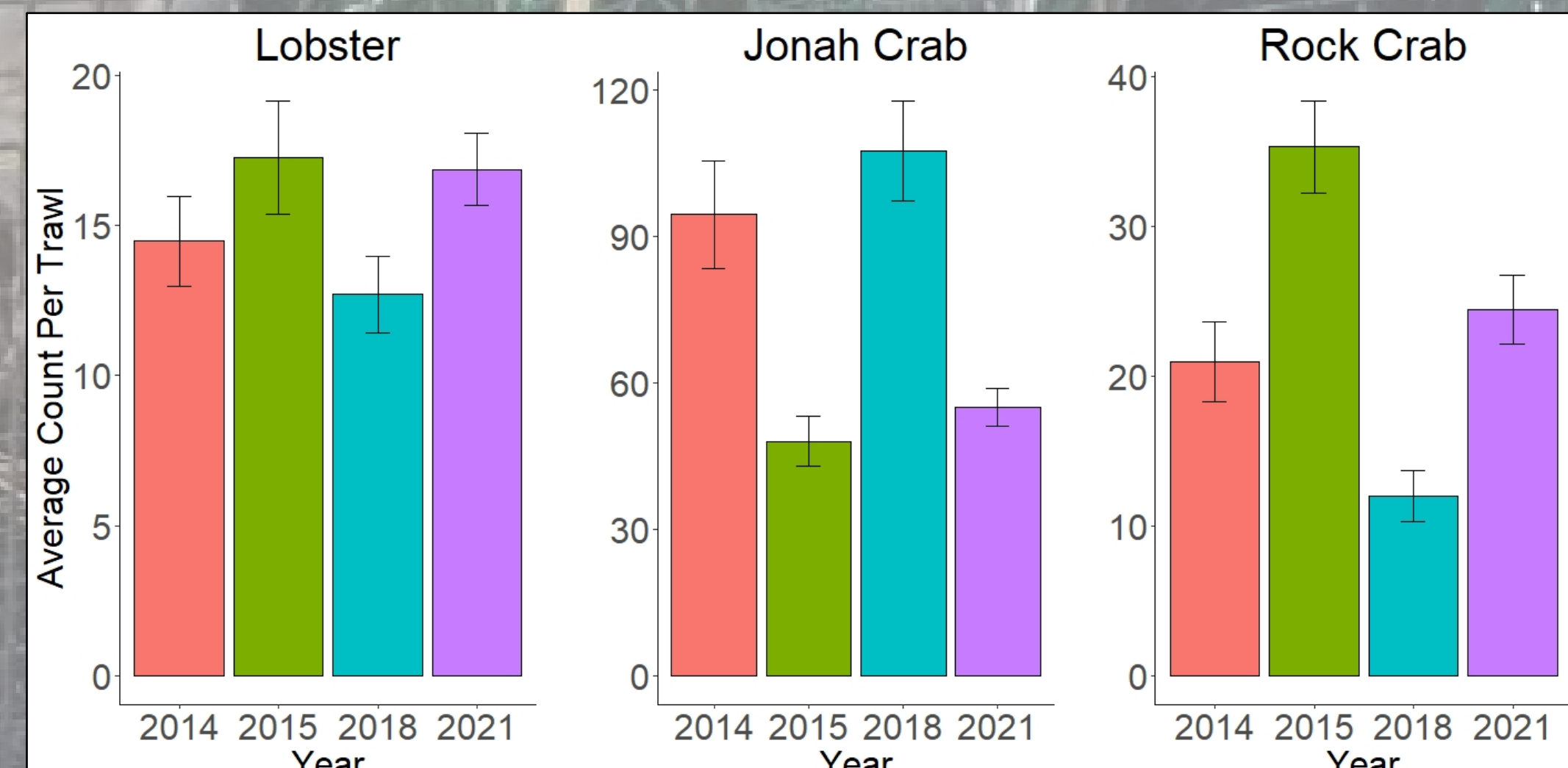


Figure 3. 2021 SFWF lobster, Jonah crab, and rock crab average count per trawl (± standard error) compared to SFWF area SNECVTS data.

NEXT STEPS

The South Fork Wind Farm Ventless Trap Survey will continue in 2022 following the same sampling protocols as 2021. New stations will be randomly selected in each of the three survey areas for the next year of sampling. Participating survey vessels and crews will be setting gear for the 2022 sampling season in May, and the lobster tagging and habitat survey components will also be continued. Commercial fishermen are encouraged to report tagged lobsters they catch by calling in the tag number and date and location the tagged lobster was caught.

ACKNOWLEDGEMENTS

The Commercial Fisheries Research Foundation and University of Rhode Island Graduate School of Oceanography would like to acknowledge the sea samplers and fishing vessel captains and crews from the F/V Amelia Anne, F/V Ashley Ann II, and F/V Erica Knight, for participating and engaging in the South Fork Wind Farm Ventless Trap Survey, as well as the F/V Ashley Ann, F/V Cailyn Grace, F/V Megan and Kelsey, F/V Persistence, and F/V Three Sons who participated in the Southern New England Cooperative Ventless Trap Survey. We would also like to thank South Fork Wind for their support and commitment to the survey through the first year of data collection.