

NEPAN - A US Northeast Passive Acoustic Sensing Network for Monitoring, Reducing Threats and the Conservation of Marine Animals.

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Abstract

NEPAN - The United States Northeast Passive Acoustic Sensing Network is composed of numerous passive acoustic recorders that provide archived and near real time data on acoustically active marine mammals and fish species. It currently stretches from the northern Gulf of Maine into the New York Bight within the northwest Atlantic Ocean. The recorders include moored units that are entirely subsurface and archive audio, units with real-time reporting capabilities via surface buoys, and autonomous vehicles or 'gliders'. Data derived from NEPAN will provide long-term year-round information on the presence and spatial distribution of vocal mysticetes and odontocetes, as well as fish. These data will be used to address critical conservation and management needs as well as to reduce threats from anthropogenic activities. Currently, NEPAN will operate from 2014 until late 2017. This listening network is an example of how collaborative scientific efforts and financial investment across many federal agencies can produce a novel far-reaching solution to current scientific information gaps. In this manuscript, we lay out our vision for the future and provide details on the technologies and applications currently used in NEPAN. Furthermore, we present a road map that includes expanding the range of NEPAN throughout the Western North Atlantic Ocean, detecting more species and addressing an even more diverse range of management and conservation applications. However, the reality remains that the continued operation and/or

expansion of this type of 'listening network' will only be possible in the long term with clear and direct support from the National Oceanic and Atmospheric Administration (NOAA).