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Approved for public release; distribution is unlimited.

**13. SUPPLEMENTARY NOTES**

**14. ABSTRACT**  
This study consists of a year-long experiment in the Canada Basin of the Arctic Ocean during 2016–2017, preceded by a short pilot study during July–August 2015. The goal of the study is to understand the effects of changing Arctic conditions on low-frequency, deep-water acoustic propagation and on the low-frequency ambient noise field. WHOI will design and fabricate the moorings for the CANAPE and pilot study. Funds are budgeted for purchasing materials and supplies necessary to build the moorings and to participate in planning, deployment, and recovery cruises for the moorings. This is a collaborative effort between WHOI and Scripps, each submitting independent proposals with separate budgets.

**15. SUBJECT TERMS**

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# Mooring Support for the Canada Basin Acoustic Propagation Experiment (CANAPE)

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## LONG-TERM GOALS

The goals of the CANAPE project include (1) understanding the impacts of changing sea ice and oceanographic conditions on acoustic propagation and fluctuations; (2) characterizing the depth dependence and temporal variability of the ambient noise field; and (3) measuring the spatial and temporal variability in the upper ocean throughout the annual cycle by combining acoustic and other data with ocean models. Acoustic transmissions are being used to both study acoustic propagation and scattering and help characterize the large-scale oceanographic structure in the Beaufort Gyre. To achieve these goals, the CANAPE project includes a year-long 2016–2017 CANAPE experiment.

The one-year deployment in a fixed geometry provides measurements at least partially in open water during summer, in the marginal ice zone (MIZ) as it transitions across the array during the spring and autumn, and under complete ice cover during winter.

## OBJECTIVES

Woods Hole Oceanographic Institution (WHOI, P.I. John Kemp) and Scripps Institution of Oceanography (SIO, P.I. Peter Worcester) propose to conduct the Canada Basin Acoustic Propagation Experiment (CANAPE). This study consists of a year-long experiment in the Canada Basin of the Arctic Ocean during 2016–2017, preceded by a short pilot study during July–August 2015. The goal of the study is to understand the effects of changing Arctic conditions on low-frequency, deep-water acoustic propagation and on the low-frequency ambient noise field.

This is a collaborative effort between WHOI and Scripps, each submitting independent proposals with separate budgets. WHOI was responsible for the design and fabrication of the moorings, cruise logistics and directing the deployment and recovery operations at sea.

## APPROACH

For the July–August 2015 Pilot Study, WHOI/SIO deployed (1) Distributed Line Array (DVLA) for 18 days near 74°N, 155°W in water approximately 3,800 m deep in the Canada Basin. This work was conducted off the Research Vessel Sikuliaq.

For the 2016–2017 CANAPE Experiment, WHOI/SIO deployed (1) Distributed Line Array and (6) Acoustic Transceiver moorings near 74°N, 145°W in the Canada Basin during August-September 2016. This work was conducted off the USCGC Healy.

## **WORK COMPLETED**

All moorings and equipment deployed on the Pilot Study and the yearlong CANAPE experiment were all successfully recovered.

## **RESULTS**

Nothing to report

## **IMPACT/APPLICATIONS**

Nothing to Report

## **TRANSITIONS**

Nothing to report

## **RELATED PROJECTS**

Nothing to Report