**FY20 ITAE Field Asset Overview**

*Pop-up buoy*

|  |  |  |  |
| --- | --- | --- | --- |
| **Principal Investigator** | P.Stabeno | **Requesting Organization** | NOAA’s Pacific Marine Environmental Lab  Seattle, WA |
| **Mission Name** | Pop-up buoy NPRB Proposal | **No. of Assets** | 15 |
| **Duration** | July 2020 – July 2021 | **Data Mission Days** | Up to 2 years |
| **Launch Location** | Bering | **Recovery Location** | Not applicable, no recovery |
| **OPAREA** | Bering | | |

Background

Pop-up floats were first developed as a prototype in 2015, and 5 floats were deployed each in 2017 and in 2018, and 4 were deployed in 2019 in the Bering and Chukchi. The benefit of adding the Pop-up floats to the suite of instruments at the long-term monitoring sites include capturing profiles under the sea ice at times when surface moorings are absent. Deploying Pop-up floats near long-term sites provides continuity while expanding the mooring dataset’s temporal resolution; they are able to collect a full bottom-to-surface profile and send preliminary looks at bottom temperatures during the winter months in early spring for use in seasonal modeling and early predictions. Pop-up floats can be configured to collect fluorescence and water color photographs directly under seasonal sea ice.

Mission Overview

Fifteen (n=15) NPRB Pop-up floats outfitted with pressure sensors, GPS, tilt accelerometers and temperature sensors will be built and calibrated at PMEL.

Vessels for deployment TBD.

They will deployed in the Bering (location TBD, deployment date TBD).

The 15 NPRB Pop-up floats will be released to collect profiles from early to late April 2021 (exact dates TBD).

Data will be expected back in May-June of 2021, potentially extending through the summer and fall of 2021 as a surface drifter.

\*NEW\*Technology Development Highlights

* Plastic-Reduced frame
* Anti-fouling Camera Lens
* Circuit Board modification, battery saving
* Code-adjusted battery saving sampling scheme
* Easy to Deploy cardboard box containment

Objectives

Continue development and testing through;

* Chukchi Mooring bottom temperature comparisons
* Automating data processing: stitching/translation and quick looks display
* Satellite data / surface drifter comparisons

Sensor Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **LOCATION & TYPE** | **INSTRUMENT** | **Field Test or Mission: Chukchi** | **Field Test or Mission: Name here** | **Total Units Required** |
| **Total Assets** | | 15 |  | 15 |
| **FLOAT** |  |  |  |  |
| Camera | u-CAM III 116degree lens | 0 |  | 0 |
| PAR | Skye TAG-PARQ | 0 |  | 0 |
| Fluorometer | Cyclops 7F | 0 |  | 0 |
| Temperature | 50kOhm NTC Thermistor | 15 |  | 15 |
| Pressure | Keller PA4LD 10 bar | 15 |  | 15 |
| GPS | Alphamicro AMC-PA6H | 15 |  | 15 |
| Iridium | RockBlock 9603 | 15 |  | 15 |
| **FRAME** |  |  |  |  |
| Burn Wire | DBV-Tech Burn Wire Release Block | 15 |  | 15 |

Acknowledgements

Personnel:

Steven Anderson

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Scott Stalin

John Shanley

Dirk Tagawa

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Willa Zhu

Map

* TBD