**FY20 ITAE Field Asset Overview**

*Pop-up buoy*

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| --- | --- | --- | --- |
| **Principal Investigator** | P.Stabeno | **Requesting Organization** | NOAA’s Pacific Marine Environmental Lab  Seattle, WA |
| **Mission Name** | Pop-up buoy Chukchi | **No. of Assets** | 7 |
| **Duration** | July 2020 – July 2021 | **Data Mission Days** | Up to 2 years |
| **Launch Location** | Chukchi | **Recovery Location** | Not applicable, no recovery |
| **OPAREA** | Chukchi | | |

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

Seven (n=7) Pop-up floats outfitted with pressure sensors, cameras, GPS, tilt accelerometers, PAR sensors and temperature sensors and fluorometers will be built and calibrated at PMEL before loading aboard the *NOAAS Fairweather* in early July 2020. The will deployed in the Chukchi near existing long term moorings (location TBD, deployment date TBD).

The seven Chukchi 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 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

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** | | 7 |  | 7 |
| **FLOAT** |  |  |  |  |
| Camera | u-CAM III 116degree lens | 7 |  | 7 |
| PAR | Skye TAG-PARQ | 7 |  | 7 |
| Fluorometer | Cyclops 7F | 7 |  | 7 |
| Temperature | 50kOhm NTC Thermistor | 7 |  | 7 |
| Pressure | Keller PA4LD 10 bar | 7 |  | 7 |
| GPS | Alphamicro AMC-PA6H | 7 |  | 7 |
| Iridium | RockBlock 9603 | 7 |  | 7 |
| **FRAME** |  |  |  |  |
| Burn Wire | DBV-Tech Burn Wire Release Block | 7 |  | 7 |

Acknowledgements

Personnel:

Steven Anderson

Shaun Bell

Eugene Burger

Sarah Donohoe

Dan Langis

Scott Stalin

John Shanley

Dirk Tagawa

Tom Walton

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Map

* TBD