**JPSS Proving Ground Periodic Reporting**

**Project Team:** *Northeast Fisheries Science Center*

**Reporting Period:** *06/18-09/18*

**Team Lead:** *Kimberly Hyde*

**Team Members:** *Colleen Mouw, Ryan Morse*

**Project Title**: Optimization of phytoplankton functional type algorithms for VIIRS ocean color data in the Northeast U.S. Continental Shelf Ecosystem

Executive Summary

*Please provide a brief description of your project* in this section

**Project Summary:** This project aims to optimize remote sensing phytoplankton functional type/size class (PFT/PSC) algorithms for the Northeast U.S. Continental Shelf for applications in fisheries management and ecosystem modeling. We will be collecting *in situ* optical and pigment data on six Ecosystem Monitoring cruises operated by the Northeast Fisheries Science Center. All available *in situ* data will then be used to validate the ocean color data (e.g. RRS and IOP products) from VIIRS and other sensors and evaluate several abundance and absorption based PFT/PSC algorithms.

**Summary of Accomplishments this quarter:** We participated in our first cruise (22-31 August, 2018) collecting absorption, backscattering, and pigment samples and started post-processing the data. In addition, we started compiling optical and pigment data in the region from other sources and have a up-to-date satellite datasets from several ocean color sensors.

##### Overall Status: Green

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *Green 1*(Controlled) | *Yellow 2*(Caution) | *Red 3*(Critical) | Deviation Summary4 |
| **Budget** |  |  |  |  |
| **Schedule** |  |  |  |  |
| **Scope** |  |  |  |  |

*1 Project is within budget, scope and on schedule.*

*2 Project has deviated slightly from the plan but should recover*

*3**Project has fallen significantly behind schedule, is forecast to be significantly over budget, and/or has taken on tasks that are out of scope.*

*4Details of deviations provided in subsequent section of report*

**Table 1. Three year project milestones**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Scheduled Milestones / Deliverables | | | | | |
| **Milestone** | **Approved Schedule** | **Start Date** | **Forecasted**  **Completion**  **Date** | **Actual Completion**  **Date** | **% Complete** | **Status\*** |
| Yr 1, Task 1: Field Sampling 1 |  | 8/22/18 | 8/31/18 | 8/31/18 | 100% | On Time |
| Yr 1, Task 2: Field Sampling 2 |  | 10/31/18 | 11/14/18 |  | 0% | On Time |
| Yr 1, Task 3: Field Data Analysis 1 |  | 9/4/18 |  |  |  | On Time |
| Yr 1, Task 4: Field Data Analysis 2 |  | 9/4/18 |  |  | 0% | On Time |
| Yr 1, Task 4: Data Compilation |  | 9/4/18 | May 2020 |  | 50% | On Time |
| Yr 1, Task 5: Satellite data processing |  | 6/1/18 | Continuous throughout the project |  | 90% | On Time |
| Yr 2, Task 1: Field Sampling 3 |  | May 2019 | Jun 2019 |  | 0% |  |
| Yr 2, Task 2: Field Sampling 4 |  | Aug 2019 | Aug 2019 |  | 0% |  |
| Yr 2, Task 3: Field Sampling 5 |  | Nov 2019 | Nov 2019 |  | 0% |  |
| Yr 2, Task 4: Field Sampling 6 |  | Feb 2020 | Feb 2020 |  | 0% |  |
| Yr 2, Task 5: Field Data Analysis 3 |  | Jun 2019 |  |  | 0% |  |
| Yr 2, Task 6: Field Data Analysis 4 |  | Sep 2019 |  |  | 0% |  |
| Yr 2, Task 7: Field Data Analysis 5 |  | Dec 2019 |  |  | 0% |  |
| Yr 2, Task 8: Field Data Analysis 6 |  | Mar 2020 |  |  | 0% |  |
| Yr 3, Task 1: Data validation |  | 2019 | 2021 |  | 0% |  |
| Yr 3, Task 2: Algorithm analysis |  | 2020 | 2021 |  | 0% |  |
| Yr 3, Task 3: Time series analysis |  | 2020 | 2021 |  | 0% |  |
| Yr 3, Task 4: Modeling efforts |  | 2020 | 2021 |  | 0% |  |
| Yr 3, Task 5: Publication Writing |  | 2021 | 2021 |  | 0% |  |

**Note:** **Bold** milestones are key external project deliverables

Status Definition: Green (will meet schedule), Yellow (milestone will be delayed), Red (milestone cannot be met on current path)

|  |
| --- |
| Accomplishments & Plans |

**Detailed Accomplishments during this Reporting Period (***Provide details of the progress of each milestones in this quarter)*

Year 1, Task 1: Field Sampling 1- We participated in the summer EcoMon cruise (22-31 August 2018) and collected [please list the types of data collected and the approximate number of discrete samples. Feel free to include a picture or two.]

Year 1, Task 3: Field Data Analysis 1 – [Please describe the preliminary analysis of the flow through data and maybe include a graph or two. No need to go into too much detail or include the issue with the backscattering.]

Year 1, Task 4: Data Compilation – We have acquired all available optical and pigment related data from NASA’s SeaBASS data respository (as of xxxxx) and have requested data from NOAA data sources as well. We are also accessing historical phytoplankton imaging, nutrient and CTD data from previous Ecosystem Monitoring cruises in the region.

Year 1, Task 5: Satellite data processing – We have an up-to-date dataset of SeaWiFS, MODIS-Aqua, VIIRS Level 2 files including all RRS, IOP and PFT/PSC data products available through SeaDAS. We are currently downloading and processing the RRS and IOP data from the merged OC-CCI dataset and comparing the merged dataset with the data from the individual sensors.

Note: Please include graphics and tables in this section

**Additional Information**

1. User engagement: None at this time
2. Conference/workshop participation: None at this time
3. Project concerns: None at this time
4. Project publicity: None at this time

**Plans for the next Reporting Period:**

During the next quarter, we will participate in our second field sampling cruise and continue processing and analysing the data from the first cruise. We will refine routines to compare the satellite data with the *in situ* measurements and start to data mine the phytoplankton imagery dataset.

|  |
| --- |
| Project Deviation Details |

##### Issues1:

* None

##### Change Status2:

* None

##### Risk Status3:

* **Risk:** N/A
* **Mitigation:** The following activities are being initiated: N/A

*1 Issues requiring resolution by Project Manager.*

*2 Changes raised for consideration that change the approved project baselines. Would require approval by the Project Manager*

***3*** *Report on any change in priority or status of major project risks, and any risks discovered since earlier risk assessments along with proposed risk response****.***