Mission Report – 3/23/2023 – Lightfish Demonstration

Newport, OR

The University of Washington, in collaboration with Oregon State University and NOAA, invited Seasats to give a demonstration of the Lightfish autonomous surface vehicle in Newport, Oregon. The primary goal of the demonstration was to assess the vehicle's ability to operate in the rough seas typical of the Pacific Northwest. This assessment would help determine whether it could be well-suited for water sampling (for eDNA analysis and HAB monitoring) as well as other long-term ocean monitoring missions.

The forecast for Friday, March 24th included 14-ft waves and breakers in the channel, so the tentative mission plan was shifted to consist of a single-day out-and-back mission on the 23rd. Conditions for the day were steady breeze in the 15-20 knot range with gusts up to 25+ knots and seas around 5-10 feet in height.

The mission went according to plan and without any notable issues. Figure 1 below shows the vehicle position track, and following pages provide additional details and pictures from the mission.
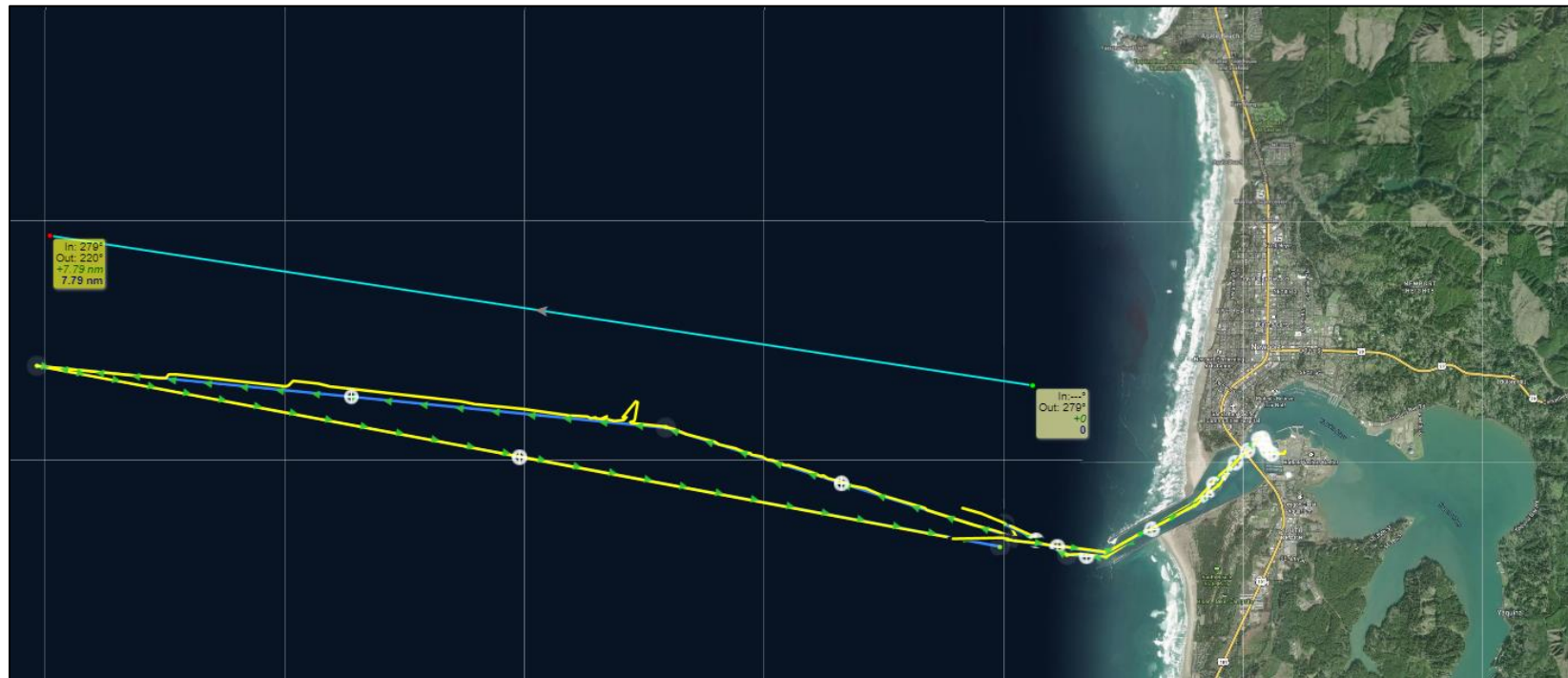

Figure 1: Mission track

Vehicle Data

Table 1: Stats for mission legs

Mission leg	Distance n-miles	Avg speed knots	Duration	Start time UTC	Stop time UTC	Station keep minutes
Transit out	3.29	2.90 *	1:28	14:34:30	16:02:48	20
Offshore transit	17.95	3.49 *	5:08	16:11:50	21:20:03	0
Transit in	3.43	3.81 *	1:12	21:20:47	22:33:10	18

*Excludes loitering time

Table 2: Full mission stats

Parameter	Value
Launch time	3/23/2023 7:34 AM
Recovery time	3/23/2023 3:33 PM
Trip distance	~ 24.67 nautical miles
Trip time	7 hours 59 minutes
Average speed	3.08 knots**

**Includes loitering time

Mission Pictures

Figure 2: Morning meeting, vehicle discussion, donuts, and great weather :)

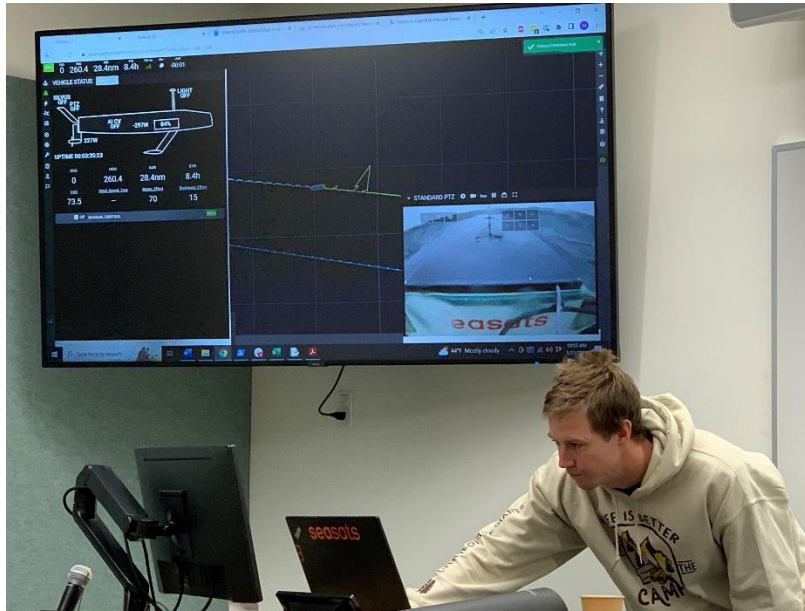Figure 3: Vehicle launch from the public boat ramp

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Figure 4: Remote monitoring and general discussion in the Hatfield Marine Science Center

Figure 5: Photo op from the Elakha during the vehicle's return transit

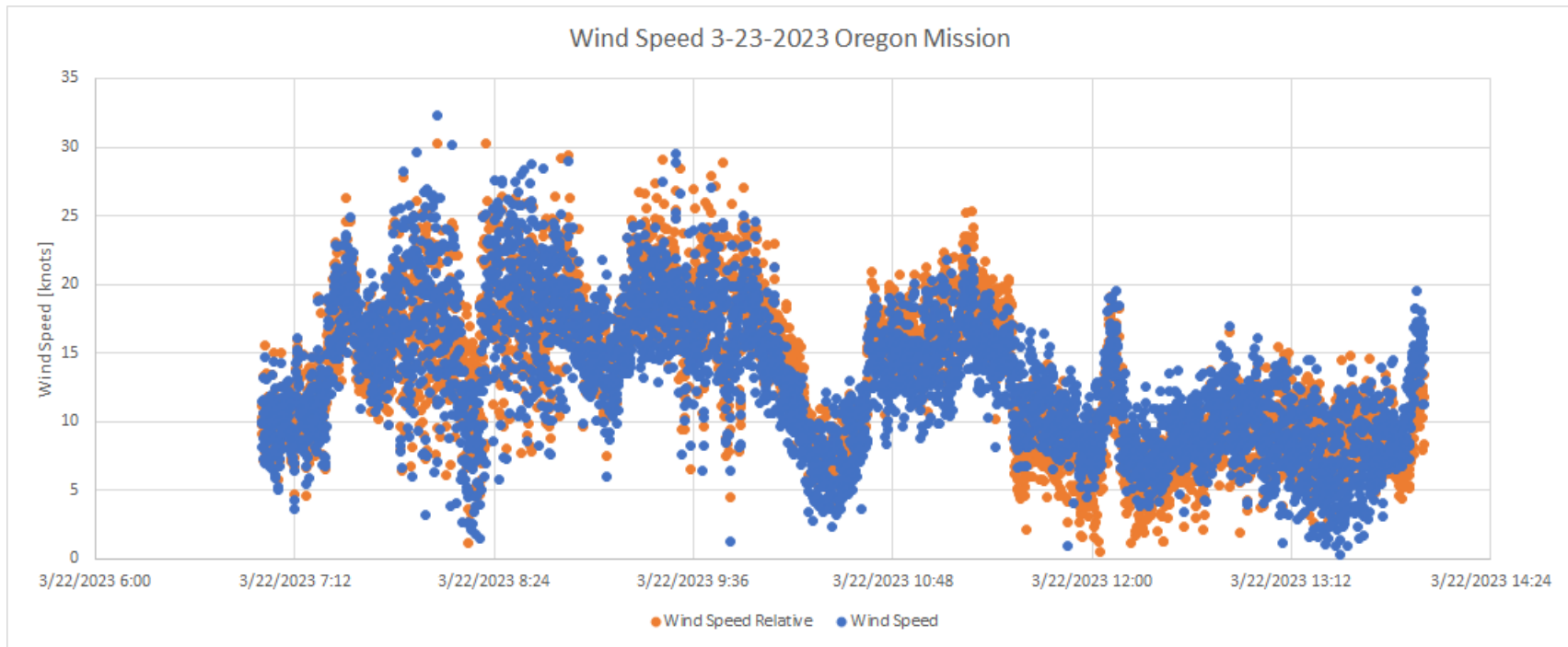Figure 6: Payloads and vehicle Q&A in the Marine Science Center lobby on the 24th

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Figure 7: Wind speeds recorded from the Lightfish during the mission

Follow up

For questions about the demonstration, the project goals, or Seasats vehicles please reach out to the appropriate POC below:

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