From The Field...

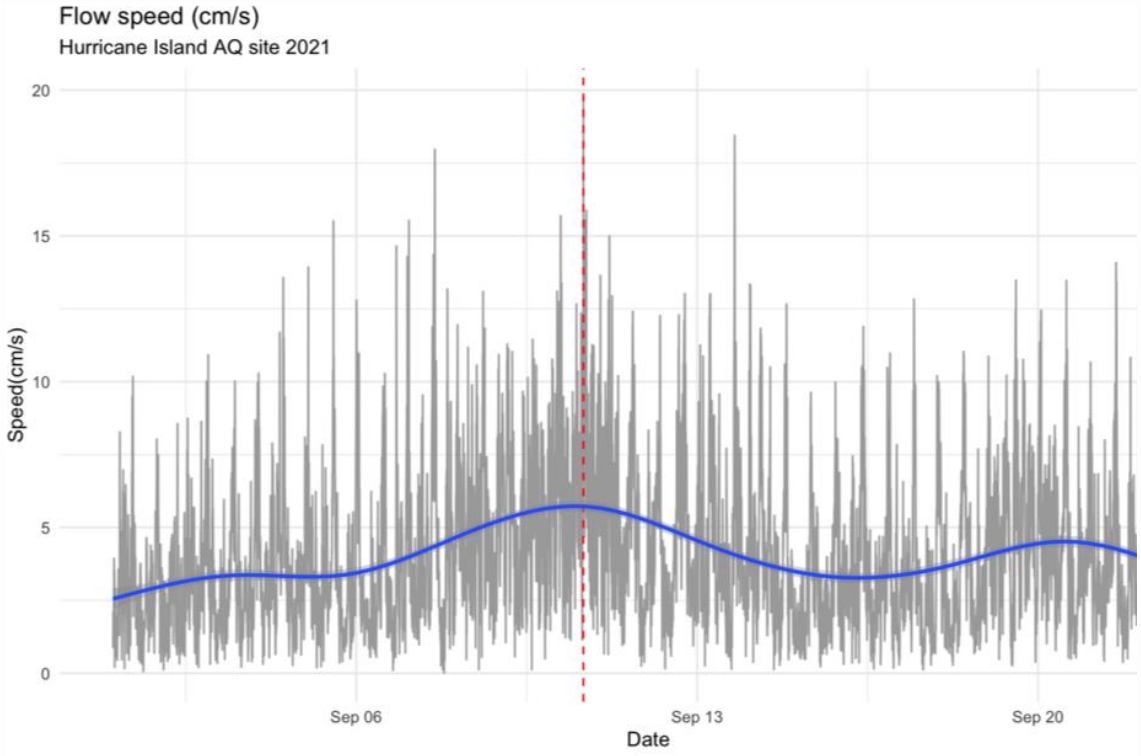
Tilt Current Meters Deployed on Hurricane Island Experimental Aquaculture Site in Maine

Lucy Williams, a Research Assistant, and the research team has deployed a new data collection device on the Hurricane Island aquaculture site. Lowell Instruments' Tilt Current Meter (TCM) is being used to collect water flow speed and direction data during a scallop spawning event on their experimental aquaculture farm.

Scallops broadcast spawn, meaning they send gametes (eggs and sperm) into the water for fertilization. There are many studies on what induces large-scale spawning events for scallops and these results can vary from location to location and year to

year. Hurricane Island has been collecting data from their farm for three years regarding approximately when spawning occurs and possible environmental factors that induce spawning such as temperature and moon phase. Specifically, downwelling's coinciding with temperature increases have been shown correspond to spawning events for scallops (J. C. Bonardelli et a, 1996), but this hypothesis had not been tested on site. The TCM was deployed on the customized anchor at the end of August until the end of October, a collection time chosen due to historical data about spawning events on the farm.

The following graph shows the TCM Data collected on Hurricane Island Aquaculture Site. The gray lines refer to exact data collected using a TCM meter. The blue solid line is a viewing aid to show trends in data, calculated with a generalized additive model. Red dotted line refers to the maximum speed calculated during sampling, 19.76 cm/s, which occurred at 2021-09-10 15:55:00 EDT.



For additional information and analysis please see the [Hurricane Island Blog].

Tech Tips...

Replacing your Batteries

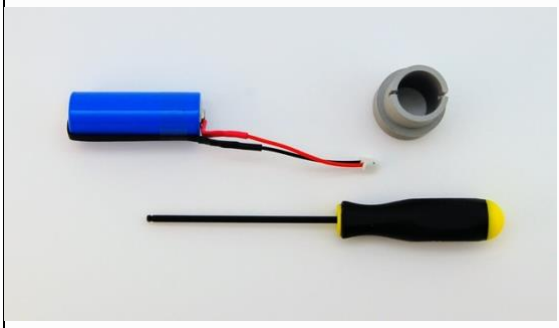
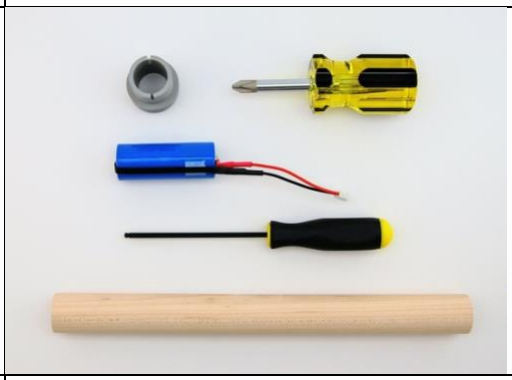
Deployment season is here! How do I tell if the batteries should be replaced?

The battery voltage for Lithium batteries is nearly constant right up until the end of life. The logger considers a voltage of less than 3.4 V "dead" but it is hard to catch the voltage below ~3.6V.

It is best if you estimated battery life based on time of use in the field. The table below offers estimates for our most common configurations.

Configuration	**Temperature (minute)**	**Burst Interval (minute)**	**Burst Rate (Hz)**	**Burst Duration (seconds)**	**Typical Battery Life**
Typical	1	1	8	20	12 to 14 months
Swells	2	2	8	45	10 to 12 months
Energetic / Turbulence	1	1	16	30	5 to 6 months
Continuous Recording	1 second	1 second	16	1	3 months
Burst Recording	5	5	16	60	12 months

If this is your first time replacing the batteries, we strongly recommend purchasing a Battery Replacement Tool Kit which includes tools and a battery. If you already have a Tool Kit, then additional spare batteries can be purchased using part number BAT-1.

BRTK1 **Battery Replacement Tool Kit for TCM-1, TCM-3 & MAT-1**	**BRTK2** **Battery Replacement Tool Kit for TCM-4**
	
Includes • 1 x Special Tool • 1 x "A" Size Lithium Battery • 1 x 3/32" Hex Driver	**Includes** • 1 x 3/32" Hex Driver • 1 x #2 Phillips Screwdriver • 1 x 3/4" x 8" Pusher Dowel

• 1 x Battery Installation Instructions	• 1 x "A" Size Lithium Battery • 1 x Battery Installation Instructions

Help us plan...

Do you have an upcoming project? Do you need to budget for next year?

Check out our new Request for Quote form!

Our meters are built to order with a typical lead time of 2 to 6 weeks depending upon the quantity ordered. We continue to work with our suppliers to make sure we can meet your demands.

Please plan ahead and be sure to fill out your estimated deployment date. We will provide a formal quote for your purchasing department.

Thank you for your continued support!

Our People...

We are happy to welcome Scott Ellis to Lowell Instruments as our Sales & Marketing Coordinator who started the end of 2021. He has over 20 years of data logging experience as a Senior Sales Application Specialist and a Product Marketing Manager at Onset Computer Corp.

"I am excited to be a part of this team and to re-unite with Nick from our time at Onset. There are so many great applications and amazing locations where our Tilt Current Meters are deployed, I am looking forward to learning and talking with our customers!"

Feel free to reach out and say hi to Scott!

Get Social...

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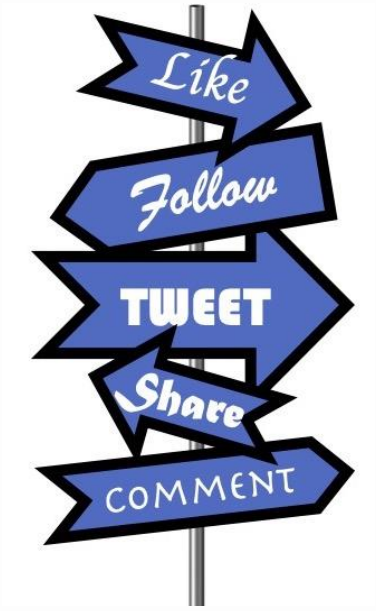

We want to hear from you! Do you have photos or videos of our meters in action? Send them to info@lowellinstruments.com.

Follow us on Twitter at @Lowell_Inst, Facebook and YouTube and let us know what you think about our products.

Photo Credit: Adam Catasus of Florida Gulf Coast University.

We created this newsletter so that you can stay informed about the latest updates from Lowell Instruments. We plan to send out quarterly updates. If you wish to opt out you may unsubscribe at any time. Thank you for reading!

Thanks,
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