

WeeklyReport

Engineering Weekly Report 8/21/2025 - 8/28/2025

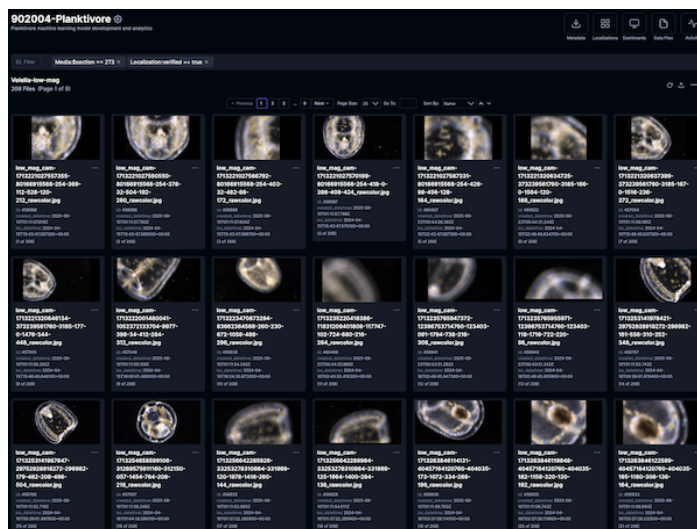
<https://docs.mbari.org/internal/projects/Engineering/Weeklies/2025/>

Executive Council Notes

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Individual Activities

- Michael Anderson
- Kevin Barnard
- Francois Cazenave
 - 901221 - Midwater Time Series
 - Open the i2map camera housing
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Prepared and installed new fence for buoy
 - Worked on buoy charge system
 - 902106 - Niobicon-Based AUV Docking Development
 - Designing new power-transfer device
 - Helped prepare AUVs for deployment
- Danelle Cline
 - 901103 - Biodiversity and Biooptics of Zooplankton
 - Finish data mining the Planktivore 2025-2025 low-magnification dataset using a REDIS Vector Database service with a Vision Transformer (ViTs) model. Starting with only 10 examples of Velella, we found ~200 in a collection of millions. We will be using this same approach to mine for rare (long-tail) taxa in the Planktivore high-magnification dataset.



- 901221 - Midwater Time Series
 - Running cluster load pipeline to add more training data
 - Prototyping new tracking pipeline
- 901502 - Ocean Soundscape
 - Configured [Triton inference server](#) deployment of Google multispecies whale model for evaluation as part of a near real-time processing pipeline. Pretty straightforward.
 - Finished modifications for resampling as needed for downstream processing [MARS PR2](#)

- Submitted help ticket for clock sync support on new recording computer
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting to discuss 2026 phase 2 proposal feedback.
- 902111 - Carbon Flux Ecology
 - Fixed zero-based issue in image crop. The lab is evaluating the performance of the latest model. Supporting new user questions and account setup.
 - Reviewed Ocean Science Meeting conference abstract
 - Reviewed L.Chrobak [Stratify PR](#). Thanks to Laura for the contribution!
- 902306 - SINKER
 - Adding REDIS time series support to ADCP data query
 - Development server is up and running sinkerdev.shore.mbari.org
- Overhead
 - Reviewing [KITOPS](#) packaging for ML/AI ops
- Duane Edgington
 - 901502 - Ocean Soundscape
 - Completed python programs and bash scripts to process one month of [Pacific Sounds MARS](#) raw files (4320 10 min files) through the [Google multispecies whale model](#).
 - Ran model with 518,400 5 sec sound chunks; collected output scores in json format files, one per 5 sec file.
 - Completed programs to process json files to expanded csv files, and to epoch time, Orca scores only csv files for John Ryan's verification workflow.
 - Completed program to alternatively output UTC time, Orca scores csv files in case leap-second-drift in epoch time interferes with verification workflow.
 - Team meeting 8/27
 - Detailed evaluation of orca score results planned to start next week.
 - Worked on 2026 phase 1 feedback response.
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting 8/26
 - Work on 2026 phase 1 feedback response planned for this week.
 - Zoom meeting with Tim on next steps as post-intern collaborator.
 - 902111 - Carbon Flux Ecology
 - Tator user account work.
 - Out of Office
 - Doctor appts.
- Jon Erickson
- Kevin Gomes
 - 200105 - Core Navigation - MDUC
 - Working with GreenSea to make sure everything is still working after upgrade of OS and control software
 - 300070 - DMO Support - Ventana
 - Wrote and installed a python script that replaces the old ActiveState perl script that was syncing changes to the CTDcoeff.ini file on the CTD GUI machine with a database on the ships. This breaks all dependency from ActiveState perl (at least on the ship side of things).
 - Support for GreenSeas upgrade (lcm loggers, NAS, etc.)
 - Out of Office
 - 8/29: Out of the office
 - 92-9/4: Working from home
- Andy Hamilton
- Kent Headley
 - 3000xx - DMO Support - MARS O&M

- working on cloning test node SSD
 - reviewing codebase
- 901007 - Benthic Biology & Ecology
 - found some chamber controller hardware
- 902405 - Precision Control Technologies
 - testing mkdocs and related plugins for generating HTML and PDF documentation
 - the winning combination seems to be mkdocs + mkdocs-exporter-plugin. Together, they do a nice job of rendering multipage HTML and generating a monolithic PDF output. With a couple of other plugins, mkdocs and exporter also support mermaid2 graphs embedded in markdown, as well as macros (for dynamically inserting special fields) and templates (for configuring section cover pages).
 - did not have luck using plugins that rely on weasyprint for PDF rendering on macOS.
 - refactoring repo and TRN software guide
 - pulling together content from Rock and Henthorn
 - If both PDF and HTML documentation are a requirement, maintaining the source in single format is efficient; it's a toss up as to whether markdown is ultimately a net positive over HTML/CSS as a native source format. Perhaps so for straightforward markdown (basic images and text). It can quickly get fiddly when extending markdown to have greater control over formatting, e.g. tables, columns, PDF page breaks, etc., or using special content e.g. (mermaid) graphs, equations, etc.

Many PDF rendering solutions require embedding non-standard content in markup, which can break compatibility with markdown tools, or including HTML in the markdown, which seems to defeat the purpose.

Markdown translation tools all seem to have tradeoffs in configurability.

OTOH, HTML to PDF rendering tools (pandoc, weasyprint, etc.) are also often unsatisfying - complex and sometimes lacking support for various types of content and (CSS) styling.

When both HTML and PDF documents are needed, it pays to keep formatting as simple as possible, design HTML with translation to PDF in mind, and limit markdown use to smaller projects.
- Overhead
 - hiring : scheduling interviews, planning
 - working with Daniel in IS on windows 11 update for OASIS build machine
 - misc admin
- Out of Office
 - 8/25 14:30+ medical
 - 8/28 10:00-12:00 medical, Remote otherwise
- Rich Henthorn
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Good deployment of Trigger Trap last Thursday
 - Successful test of trigger from SES on MARS to Trigger Trap
 - Reviewing event detection algorithms and scripts
 - 902401 - Geo-Sense
 - RAID drive enumeration issue
 - Clock drift issue
 - Out of Office
 - Sept 2 - 4: WFH with phone, email, network access
- Akshay Hinduja
- Brett Hobson
- Irene Hu
 - 901217 - Chemical Sensors

- Wrapped up PTC experiments, recommend using battery power
- 901805 - Coastal Biogeochemical Sensing Program
 - OSM abstract
 - Alkalinity board received, working on code integration with updated mpHOx code
- 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Various whack-a-mole troubleshooting for two board stacks
- 902305 - Event Detection Using the Sedimentation Event Sensor
 - Trigger Trap deployed at MARS after a last minute push with modem arriving in the nick of time
- Out of Office
 - Sept 1 - 5: vacation
- Scott Jensen
 - 706008 - READI-Net
 - Instruments are built now the process of check out
 - Work with contractor to tidy up code
 - Confirming flow calibration
 - Dress rehearsal deployment on dock
 - Permission granted
 - Preparing instrument
 - 808015 - Monitoring McCloud
 - Trip to perform repair of failed pump at TNC
 - 901205 - ESP SURF Center
 - Support continued diagnostic work of bulkhead valve
 - Out of Office
 - 9/(8-12) Vacation
- Brent Jones
 - 901112 - Monterey Bay Time Series
 - New PIC32 SIPPER boards are here. Getting started
 - 901502 - Ocean Soundscape
 - Recovered failed wire walker. Diagnosed with leaking seacon bulkhead. Replaced, rebuilt, redeployed
- Chad Keczy
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
 - Out of Office
 - 07/23
 - 07/28-08/01 (MST)
 - 08/25-29 (PDT)
 - 9/15-30 (UTC+2)
- Denis Klimov
- Eric Martin
- Thom Maughan
- Mike McCann
 - 901009 - CANON
 - Loaded stoqs_all_dorado_t using [dods2](#) with no failures – legacy [dods](#) would have failed
 - 901101 - Seafloor Mapping
 - Submitted [PR](#) in attempt to fix reported problem building MB-System on Ubuntu 22
 - Reading up on glTF file format and getting ready for presentation at Web3D 2025
 - 901910 - Plankton Taxonomic Groups from AUVs

- Continuing to work on modernizing the STOQS dev environment on the revamp2025 branch
- Overhead
 - Sent out announcement asking for help testing new dods2/search2 services on elvis2
- Out of Office
 - 18-29 August – Remote work
 - 1-5 September – Vacation
 - 8-13 September – Web3D & Digital Heritage Conference
 - 15-18 September – Vacation
- Paul McGill
 - Out of Office
 - I've been busy sleeping in because I'm retired!
- Enoch Nicholson
 - 706008 - READI-Net
 - Designed and fabricated puck bucket rail system with spring clip mounting
 - Conducted flow sensor calibration testing
 - Silver FIDO assembly
 - 901205 - ESP SURF Center
 - ONR ESP Middleware project kickoff meeting
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Independent payload system development
 - Proposal response
 - Overhead
 - Submitted Ocean Science Meeting conference abstract
 - Dive paperwork
 - Out of Office
 - Thursday/Friday diving at Big Sur monitoring sites with Reef Check
- Tom O'Reilly
- Mike Risi
 - 200105 - Core Navigation - MDUC
 - System update for Rachel Carson navproc-rcsn.
 - Miscellaneous changes to support Doc Ricketts integration.
 - 300062 - DMO Support - Doc Ricketts
 - Implemented several changes to SMD/MBARI protocol in conjunction with visiting SMD engineer.
 - Fixed bug with ROS pan and tilt position updates.
 - Worked on light boom configuration with pilots.
 - 701147 - MARS
 - MARS meeting with University of Washington in preparation for MARS delivery.
 - Worked with Kent a little bit on MARS node controller engineering stack.
 - 901101 - Seafloor Mapping
 - GOB and LASS controller firmware changes for October nearly complete
 - Working with Chad on UI changes for LASS GOB stack.
 - Out of Office
 - Offsite on Tuesday and Friday
 - March 3 - March 6, 2025 - vacation
 - June 2 - June 6, 2025 - vacation
 - June 16, 2025 - vacation
 - July 2, 2025 - vacation
 - July 29 - August 1st - vacation
- Paul Roberts

- 901221 - Midwater Time Series
 - 4k upgrade chassis fixtures
 - Fiber port testing
- 901809 - Deep Sea Bioinspiration
 - SOI 2026 cruise documentation and preparations
- 901904 - Deep-Sea Coral-Sponge Community Observatory
 - SWIR controller hardware/software support
- 902004 - Planktivore
 - Hardware procurement
- 902111 - Carbon Flux Ecology
 - Mini-sidekick controller design
- Brent Roman
 - 708184 - ESP Monitoring PNW
 - Added debugging output to try to understand occasional camera autoexposure errors
 - No failures since debugging output added (figures 😊)
 - 901205 - ESP SURF Center
 - Unorganized gripper object hierarchy to ease implementation of asymmetric ExternalValve error recovery
 - To better cope with overly stiff valves discharging supercaps
 - Found and fixed firmware bug in gripper/valve actuator driver
 - 901913 - Wet Wifi
 - Lunch with GreenSeas engineers who have had good luck with OceanComms modems
 - 902304 - Piscivore Cam
 - Delaying start of backseat heartbeat seems to be required so that LRAUV shuts it down properly.
 - Out of Office
 - Visiting family in Anacortes, WA for funeral Sept 3 - 9th
- Carlos Rueda
 - Out of Office
 - August 26: vacation (family business)
- Karen Salamy
 - Out of Office
 - On-campus 3 days/week (**T, W, TH**). New OFFICE - G106.
- Brian Schlining
 - 902002 - FathomNet
 - Kevin Barnard and Brian completed major software updates to [FathomNet Database](#) and rolled them out. The API docs are [here](#). The summary of major changes includes:
 - [Vue 2 to Vue 3 migration](#). (User testing notes are [here](#))
 - [Micronaut to Quarkus migration](#)
 - Add database migrations via [Flyway](#).
 - Out of Office
 - Aug 18, 2025 - Aug 21, 2025 - Vacation
 - Sep 3, 2025 - Sep 17, 2025 - Out of Office
- Alana Sherman
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Steve and I took a battery inventory and convinced ourselves that we budgeted the right amount for next year
 - 902208 - Mini ROV Operations
 - Writing up phase 1 feedback
 - 902401 - Geo-Sense

- Writing up phase one feedback
 - Vetting plan for wired sheave through DMO
 - Helped get the system back up and running in the lab
 - Trying to get a realistic budget and ship schedule given phase 1 feedback and cancellation of the Packard cruise
- 902505 - 2025 Arctic Expedition
 - Provided some onshore information while the team was troubleshooting a ground fault.
- Overhead
 - Moving offices, I definitely did not scope the labor on this project accurately.
- Out of Office
 - Out of office Friday and Monday
- George Stern
 - 902204 - Scalable Robotics
 - Schematic capture place and route for a power conditioning board
- Justin Tucker
 - Overhead
 - Working through a simscape setup for the Ricketts LARS
 - Out of Office
 - Out 8/29 and 9/3
- Johann Voigtlander
 - Out of Office
 - Dec 16th - Jan 10th - Vacation
 - May 30th - June 5th