Regional Operations Centre, Canadian Coast Guard Western

Science Cruise Report: PAC 2024-002

Report last updated: 2024-02-13 09:16:38
https://www.waterproperties.ca/requests/cruiseplanview.php?cruiseid=2024-002

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Department/Group:	Fisheries and Oceans Canada, OSD
Other Participating Groups:	UBC, UVic, MUN
Science Cruise Number:	PAC 2024-002
Alternative Cruise Number:	
Ship's Patrol Number:	23-12
Name of Vessel/Platform:	J.P. Tully
Dates:	**From:** Tuesday 23-Jan-2024 **To:** Friday 09-Feb-2024
Chief Scientist:	**Marie Robert**, 236-464-2074, marie.robert@dfo-mpo.gc.ca
Master:	Victor Gronmyr
Fishing Master:	
Appropriateness of Vessel:	Excellent

Time Allocations

Originally Allocated Days 17.00
Accounting below is given in days and should match the originally allocated days above.

Weather	+ 2.00	
SAR	+ 0.00	
CCG Refueling	+ 0.00	
CCG Ship Repair & Maintenance	+ 0.00	A few hours for grey water pump
CCG Crew Changes	+ 0.75	Chief Officer did not show up until morning after crew change.
CCG Other	+ 0.25	None of the quartermasters were trained on LARS operations; quite some time used for training.
Science Operations	+ 13.50	
Science Equipment Loading/Unloading	+ 0.50	
Science Other	+ 0.00	
Days Gained	+ 0.00	
Days Grand Total	= 17.00	

Time Allocation Comments:

Cruise Events

Areas of Operations

Juan de Fuca, Strait of Georgia, Johnstone Strait, West Coast Vancouver Island, Northwest Coast Vancouver Island, Northeast Pacific

Scientific Personnel

Name	Notes (Affiliation, Watches, Duties, etc)
Michael Arychuk	DMS/DMSP, watch
Mark Belton	Watch leader, Oxy
Natasha Buckiewicz	Watch, plankton
Kailee Clarke	Watch, DOC, TOC, CDOM
Moira Galbraith	Watch leader, bongos
Chloe Immonen	Watch, CTD, TSG
Jody Klymak	Watch, MVP
Marie Robert	Chief scientist, data, sampling
Morgan Griffith	Trace Metal, watch
Lauryn Talbot	Watch, MVP
Cindy Wright	Watch, DOC, TOC, CDOM

Event Log

Tuesday 23 January: Load the IOS gear in the cube van in the morning. Start loading the ship after the RMK crane departs, around 1530. Keep setting up
Wednesday 24 January: Bongo winch and MVP get loaded. Arrival of Chief officer in the morning. Safety meeting at 0830, science meeting at 1030. Fire a
dock around 1530. Test cast, station Haro59.
Thursday 25 January: JF2, P1 to P3, start P4.
Friday 26 January: Complete P4, P5, P6, P7, P8, skip station P9 to stay ahead of the weather, do P10. Deploy UCSD drifters at P8 and P10.
Saturday 27 January: Skip P11, do P12, start heading towards Station P. Deploy a drifter at P12.
Sunday 28 January: Weather sail to Station P.
Monday 29 January: Arrive at Station P around dinner time, start work after dinner.
Tuesday 30 January: Complete Papa, deploy drifter. Start towing MPV heading NW for ldquo;hide-outrdquo; location.
Wednesday 31 January: Deep cast to fix spooling issues on CTD winch. Start towing MVP towards P25.
Thursday 1 February: Keep towing MVP towards P25.
Friday 2 February: P25, P24, P23, P22. Deploy a drifter at each of these stations.
Saturday 3 February: P21, P20, P19. Deploy a drifter at each of these stations.
Sunday 4 February: P18, P17, P16. Deploy a drifter at each of these stations.
Monday 5 February: P15, P14, P13. Deploy a drifter at each of these stations. Tow MVP towards Scott3.
Tuesday 6 February: End of MVP sampling at Scott3. Do Scott3, Scott2, CPE1, LBA1, QCS3, QCS1.
Wednesday 7 February: Start of SoG work: stations 16, 14, 12, 9, 6, CPF2, 3, 2, 24, CPF1, 27, GEO1, 39.
Thursday 8 February: End of SoG work: stations 40, 42, 46, 58, GI-01, SC04. Arrive at IOS, start offloading.
Friday 9 February: End of offloading. Ship cleared by noon.

Scientific Equipment Report

PROBLEMS [SCIENTIFIC GEAR AND OPERATIONS]:
A new TSG was used on this cruise. The TSG software was not updated with the correct baud rate so we had no lab temperature and conductivity readi
Once we received the new code with the appropriate baud rate we could log Temp and Cond, but the TSG flow reading became negative. After 19 hours
roughly 48 hours of TSG data went missing. Finally, the old software code got modified using the new baud rate and most issues were resolved, thanks
days of the cruise the fluorescence flow meter on the TSG stopped functioning and the data extraction software does not seem to be working as it shou

It would still be preferable if the TSG software was not running on the same computer as the ADCP. This is a repeat request from May and August.

The Python script on the science server used to record TSG and weather data shuts itself down after recording 10 lines of data.

When the sea cable broke (see Problems ndash; ship equipment section) it seems to have affected the CTD and/or the deck unit. The spare CTD had to
cruise.

As we were sailing back from the Hide out location th e MVP cable backwound and created a birdcage. This likely happened because we were in very ro
maintained adequately during pay in. The cable appeared broken, so we reterminated, with Chloe Immonen from IOS providing the; electrical retermin
Jody Klymak

SUCCESSES [SCIENTIFIC]:
See above for the TSG data missing and the weather data recording script malfunctioning. Those two scripts (TSG and weather data) were written by so
the Tully regularly. Chloe and Mark did a great job solving the issues with the codes so that we could collect some data during the cruise. Without them
quality TSG data. The weather data is being recorded somewhere at all time but it's better to have access to it.

The retermination of the CTD conducting wire was done very calmly and without any issues despite being Chloe's first retermination at sea. Great work

pCO2 Michael Arychuk: After nearly a three-year absence the recording of pCO2 resumed on this cruise. Essentially the program was debugged, repaire
to be captured with an external ldquo;puckrdquo; versus going through the ship's network. Graphing and com port assignment issues were also addres
software performed very well on this cruise and previous problems of capturing the GPS, or COM port conflicts, were non-existent. The only issue that
that of the mass flow controllers (MFC) losing their ability to control the flow of gas through the LiCor which affected the continuity of the readings. The
themselves but rather some sort of electrical blip that causes a fault within the flow sensor. The MFC don't seem to be able to recover from the ldquo;b
functional and lose their ability to regulate the flow. If one unplugs the sensors and then plugs them back in, they seem to re-set and the MFCs are func
event. Unfortunately, the MFCs get their power from an output on a board under the control unit so it is very difficult to check those connections witho
The best that could be done during the cruise was ensure the plug that supplies the power to the main board was snug and secure. This was done and
any case it is suspected that the vibration from the ship is causing connections to come loose and it is something that probably should be looked at clos
the lab

Radioisotope Report

No radioisotopes were used on this cruise.

Scientific Successes and Concerns

See the Appendix in the PDF version of this report.

Platform Successes and Concerns

PROBLEMS [SHIP'S EQUIPMENT/OPERATIONS/PLATFORM SUITABILITY]:

The loading at the beginning of the cruise took a long time. Even though the previous crew loaded one aft-deck winch and the containers before crew cl
dock until 15h30 on January 24th. Part of the problem was that the bosun only showed up by dinner time, although it must be said that the boatswain's
leading deckhand Hannah Hollyoak did a fantastic job of acting for the bosun. Another issue was that the chief officer did not show up until the next m

The 10-ton wire of the ship's crane is not certified. The crew managed to put the bongo winch on Pad I by using the 5-ton wire in its maximal configurati
but this is a potentially dangerous method of loading a winch.

At the moment there are no winch (ship or shore) certified to lift a "man basket" in order to secure blocks and service the heave compensator at the to
the chief officer is working on finding a solution for this issue we thought that it was still worth mentioning here as this could have a huge impact on ou
be ideal to have the means of accessing the top of the A-frame while at sea as we've had issues in the past with that system in the middle of a cruise. Th
consideration.

When we left for the cruise, none of the quartermasters were fully trained on how to operate the LARS to deploy and recover the rosette, which is by fa on our cruise. If we have no rosette, we might as well turn around and go home. Quite a few hours were spent training the new crew members on LARS stations, the order of operations had to be modified so that rosette casts would not happen during specific watches, sometimes entailing a less-than-id we realise that retaining experienced crew members can be somewhat difficult, it is hard to comprehend why totally inexperienced individuals are put i is absolutely crucial to all our operations, especially for a winter cruise which can pose significantly higher risks due to weather and sea conditions.

As we were deploying the rosette for the deep cast at Station P the conductive cable snapped. We were lucky that the rosette had just been secured in t wire broke.

As the rosette was coming up from 4315 dbar during the deep cast at Station P, the main Hawboldt winch had some spooling issues and the wire endec the drum. It was noticed too late on the upcast to deal with the issue right away so we completed the cast. We then had to do another almost 4-hr cast wire properly on the drum.

We had a crew member in science cabin B. All other ship's crew berths were occupied. The coming Line P cruises will have more science staff and we wi has been decided that a nurse will now sail on all cruises going further than 200 nm. Although it is not a science issue to determine where the nurse wil out that, not only there won't always be a science cabin available for crew members, but also an IT tech seems more important to have on board than a already at least two certified MEDICs on board.

SUCCESSES [SHIP]:

The trace metal winch seems to be fixed! We performed six casts with it and there were absolutely no spooling issues whatsoever. Many thanks to ever worked on this project.

Both the ONC (science) and the Starlink (ship) Internet systems worked very well during the whole cruise.

Despite having to use different software than he was used to, Captain Gronmyr did an awesome job reading the weather forecast files we were receivir so we could make the most of our sea-time while staying out of the worst weather.

Many thanks for the extra speed when needed.All officers of the bridge did a great job of holding station without constant use of the bow thrusters. Tha

Safety Concerns

Inexperience people operating the LARS.

Hazardous Occurrences

None in the science group.

Other Comments

Many thanks to everyone at IOS who packed and prepared all the gear and helped loading, as well as everyone who did the forklifting.
As usual, many many thanks to everyone on board for all your help: the whole galley crew for all the special meals and smiles and special attention; tl help; the engineers with answers to all our questions; and the officers for keeping station hours on end. With special thanks to the deck crew who car hold to the lab for us every day.
Special thanks to Captain Gronmyr for spending so much time analysing the weather forecasts so we could make the best use of our ship time, as we otherwise we'd still be at the ldquo;hide-out stationrdquo; trying to get back home. And I guess ... thanks for coming out of retirement so we could sa And last but not least, many thanks to Shane for the cables and power supply, the help with the scripts and mis-behaving laptop, and the daily offer f Marie Robert.

I would like to thank the captain and crew of the J.P Tully for making this cruise possible. A big thank you to the cooking staff for the exceptional food thanks go to Chief Scientist Marie Robert for the planning and preparation of Line P and for inviting me to be apart of it. I would like to thank my watc the guidance and help provided during the cruise. And thank you to all members of the scientific team for their hard work and for making this trip a r Natasha Buckiewicz.

Thank you to the wonderful captain and crew of the John P. Tully, for the assistance they provide us with, and their patience and friendliness as I filte Susan and Gage for always maintaining their enthusiasm. Special thanks to Cindy Wright for the at-sea carbon collection advice, and for filtering long sleep schedule on track. And of course, thank you to Marie, for all of the help getting here and for providing a great learning experience and working Kailee Clarke.

Thank you to the officers and crew for a great expedition, and to the IOS crew for their expert assistance and advice, particularly Chloe Immonen for t so quickly. Thanks to the rest of the science party for keeping us company while doing the MVP watches. As always, thanks to Marie Robert for all her efforts.
Jody Klymak

Images

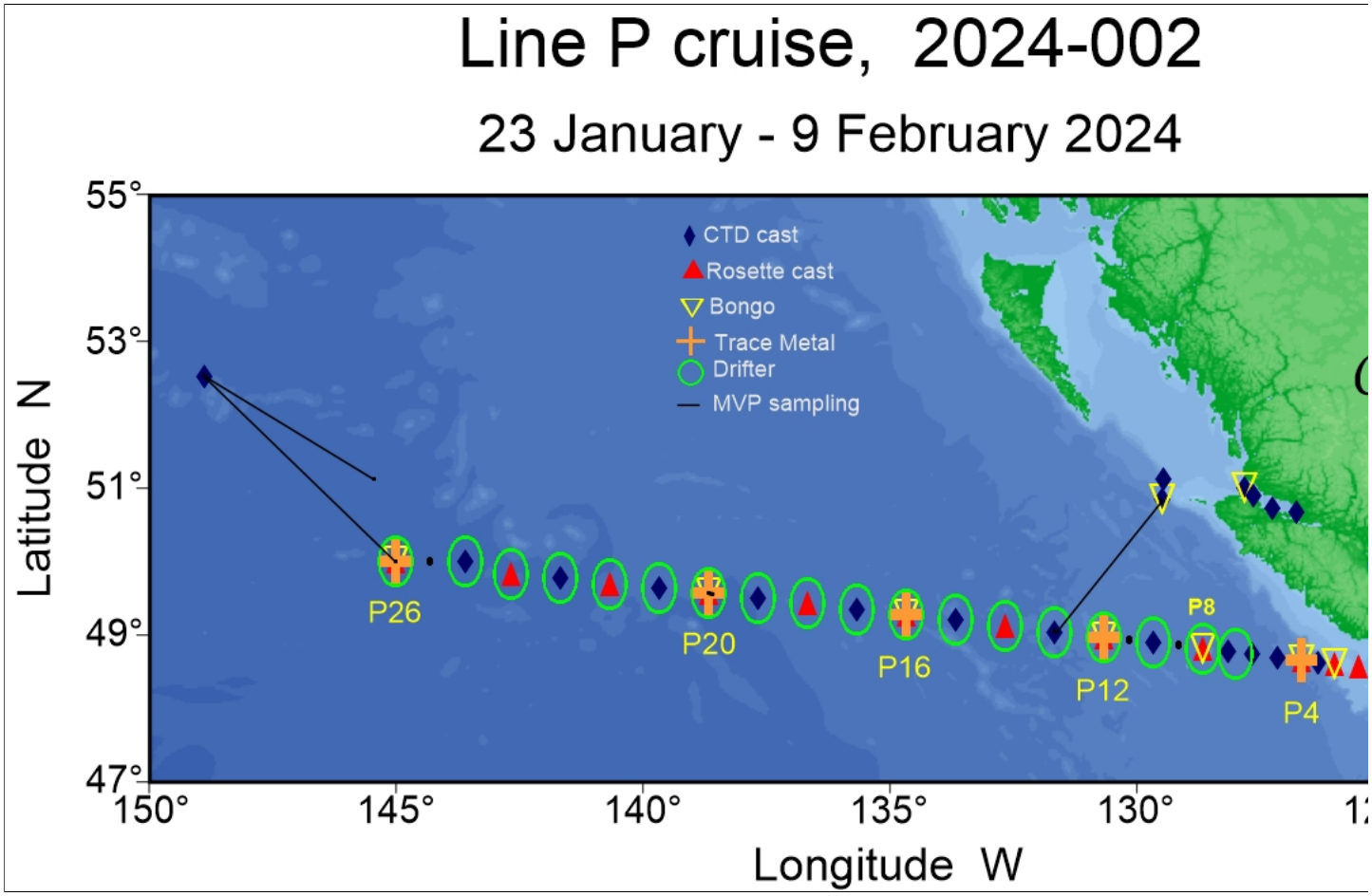

Image notes:

Other Supporting Documents:
Note that some of these files may not load correctly in your browser when clicked, but you can right-click on them and save them to your local machine to view.

Filename	Type	Size	Modified
2024-002_deckplan.docx	file	31K	Thursday 07 Dec 2023 14:45
2024-002plan1.jpg	file	112K	Thursday 07 Dec 2023 14:45
2024-002plan3.jpg	file	465K	Thursday 07 Dec 2023 14:45
2024-002plan4.jpg	file	384K	Thursday 07 Dec 2023 14:45
2024-002report1.jpg	file	343K	Tuesday 13 Feb 2024 08:20

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