



## Regional Operations Centre, Canadian Coast Guard Western



### Science Cruise Report: PAC 2023-035

**Report last updated:** 2023-06-22 13:04:34

<https://www.waterproperties.ca/requests/cruiseplanview.php?cruiseid=2023-035>

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<b>Department/Group:</b>	Fisheries and Oceans Canada, ESD
<b>Other Participating Groups:</b>	OSD
<b>Science Cruise Number:</b>	PAC 2023-035
<b>Alternative Cruise Number:</b>	
<b>Ship's Patrol Number:</b>	23-03
<b>Name of Vessel/Platform:</b>	Vector
<b>Dates:</b>	<b>From:</b> Wednesday 17-May-2023 <b>To:</b> Thursday 08-Jun-2023
<b>Chief Scientist:</b>	Tammy Norgard, 250-756-7005, <a href="mailto:tammy.norgard@dfp-mpo.gc.ca">tammy.norgard@dfp-mpo.gc.ca</a>
<b>Master:</b>	
<b>Fishing Master:</b>	
<b>Appropriateness of Vessel:</b>	Not Rated

### Time Allocations

**Originally Allocated Days** **23.00**

Accounting below is given in days and should match the originally allocated days above.

<b>Weather</b>	+ 0.00
<b>SAR</b>	+ 0.00
<b>CCG Refueling</b>	+ 0.00
<b>CCG Ship Repair &amp; Maintenance</b>	+ 0.00
<b>CCG Crew Changes</b>	+ 0.00
<b>CCG Other</b>	+ 0.00
<b>Science Operations</b>	+ 21.00
<b>Science Equipment Loading/Unloading</b>	+ 2.00
<b>Science Other</b>	+ 0.00
<b>Days Gained</b>	+ 0.00
<b>Days Grand Total</b>	<b>= 23.00</b>

Time Allocation Comments:

### Cruise Events

#### Areas of Operations

Hecate Strait

**Scientific Personnel**

Name	Notes (Affiliation, Watches, Duties, etc)
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Emily Rubidge	
Sarah Dudas	
Shannon Schmunk	
Carrie Robb	
Andrea Hilborn	
Sarah Davies	
Michelle Bigg	
Kayleigh Gillespie	
Amy Liu	
Cole Fields	
Sharon Jeffery	
Cynthia Bluteau	
Michelle Paleczny	
Tammy Norgard	Not on board

**Event Log**

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May 17	Loaded at PBS, Nanaimo. Left PBS around 19:00 en route to Wright Sound. Stayed on outer coast until Aristizabal Island to save time.
May 18	Continued transit from previous day. Complete FAM with CCG second office Sebastian. Science crew prepped field gear and organized lab. Seas rolly at times so worked a split shift.
May 19	First Intertidal day; Vector arrived at first site (Gil Rock) at 3-4am from long transit from PBS (~33 hours total). Intertidal team left Vector in two boats (Red Ape and Palmira) at 0500 to sample Gil Rock site. Red Ape crew (Michelle, Kaylee, Cynthia, Cole, and Shannon) did drones surveys and intertidal while the Palmira (Amy, Sharon, Emily) did BRUVs, and seine at eelgrass meadow at bay just north of intertidal site. Main site was rocky, but around the point was a nice eelgrass bed. Two fish seines, caught Dolly Varden. 3 Bruv were deployed and we all returned to Vector by 13:20. Rest of day washing gear, filtering water samples, downloading and backing up data, and prepping for next day.
May 20	Intertidal Day 2 ndash; departed Vector at 0500 on two boats, Palmira and Red Ape. Arrived at site (NW Farrant Island) at 5:20. Red Ape crew (Michelle, Shannon, Kayleigh, Cole and Cynthia) left first and were unpacking when Palmira (Emily, Sharon, Amy) arrived. NW Farrant site not suitable for seining so we went around the Bay to a nice eelgrass site. We decided to BRUV first and then seine as tide was still going out and we wanted a better substrate to seine (mud and cobble beach). We set three BRUVs, at least 300m apart. BRUV site one was on the edge of eelgrass, 2, was near a wall and 3 was near a wall around a corner from a bedrock point. We anchored both boats. Did two seine sets, lots of nice fish. Picked up BRUVs and returned back to boat (Red Ape crew finished at same time) and both on board Vector by 12:45 and did fire/abandon ship drill at 1pm.

May 21	Intertidal Day 3 ;departed Vector at 5:45 on Palmira (Emily, Sharon and Amy) and Red Ape (Michelle, Kayleigh, Cole , Cynthia, Shannon). Arrived at third intertidal site,; Minnis Bay at 6:10. Completed intertidal survey, drone survey, eDNA, debris survey, seine, and 3 BRUVs. Michelle and Cole left on Red Ape at 11:30 from beach pick up CCG deckhand (Simon) to service a wildlife cam, take a generator and service a weather station/satellite camera in Grenville channel near Zalinski wreck. The rest of the science crew were at beach until 12:45ish and we met the Vector at the mouth on Minnis Bay and then traveled to Grenville to meet Michelle, Cole and Simon. They returned to the boat by 17:45.
May 22	Intertidal Day 4 ndash; departed Vector at 6:30 on Palmira and Red Ape. Heading to Kishkosh Inlet site (810637). Kishkosh is very shallow, so we BRUVed at Mouth of Kishkosh Inlet (MMI) and then went in and seined across from the intertidal site to avoid disrupting the intertidal team. Once seine finished we helped intertidal team with the quadrats. We had to leave with Cole and Cynthia at 2 to get back to ship to test CTD rosette at 15:00. Had issues with arming the CTD, troubleshooted for a few hours, eventually Cynthia figured out it was baud rate at which the CTD communicates with the Rosette. We couldn't communicate with the CTD with the ECO so connected directly to the CTD. Luckily she knew how to troubleshoot it. We also found out that the seabird software works best with the IMRP toughbook. If you see gibberish, it could be a comm port problem (connected to wrong port) so just go to menu and choose another port. Rest of Science crew returned to Vector by 15:30pm. For the afternoon, we filtered water, downloaded data and prepped for the next day.
May 23	Intertidal Day 5 ndash; departed Vector at 7:15. Went to MKlkl inlet but it was too steep to do a beach survey (and we BRUV's'd it yesterday) so we went to backup site 8654029, called the site W Hawkesberry; Isl. Creek. Completed an intertidal survey, drones, marine debris, BRUVs, water sampling and beach seine. We picked up BRUVs and got back Vector at 14:00, intertidal team finished the debris survey and got back at 15:00. We tested two programs and test casts and all worked well after some initial issues.
May 24	Water sampling from VectorDay 2 ndash; Red Ape left at 07:30 (Michelle, Sharon, and Kayleigh) to pick up wildlife cams and help CCG with crew change in Hartley Bay. The rest of science crew remained on board the Vector to complete RosetteCTD sampling. Collected seawater samples from 6 sites in Verney passage and Wright Sound and one in Ursula Channel (N14, N13, 18Ver, 9Ver, 5Ver, 12Urs). We started at 8:30 and finished last eDNA water collection at 16:00 and were still cleaning/filtering samples in lab until 19:00pm. Also did nutrient cast and zooplankton bongo net (UC43 nut, UC43-bongo) after dinner. Transited at night to head of Gardiner Canal.
May 25	Water sampling from Vector ndash; Day: ;started at 7:00,first cast at 7:15. Completed 7 eDNA water collection sites and two nutrient profile casts up Gardiner Canal. Sampled water for eDNA analyses at

	20Gar, 3Gar, 6Gar, 13Gar, 4Gar, and 16Dev. Set 3 BRUVs and 3 water samples at 19Gar from Palmira. Sharon, Shannon and Michelle went out in morning to set BRUVs and do Niskin line sampling, and came back for lunch. After lunch, Michelle, Shannon and Kayleigh tested the microplastics sampler from the Palmira. Anchored in Gardiner Canal overnight.
May 26	Water sampling from Vector ndash; Day 3: . Launched Palmira (Michelle, Sharon and Kayleigh) to do Niskin line and BRUVs at Danube Bay (2019 site) and 2Urs. Vector doing rosette water sampling and nutrients at 11Ver, 14 Ver, and then sites down Ursula Channel. Completed 2 eDNA casts and one nutrient profile before lunch. Palmira came back to boat to deliver eDNA water samples and get their packed lunch before heading off again to pick up wildlife cameras at Kishkosh (saw bears!) and backup site 8654029. We did last cast, N12 (repeat from last year, but we did bottom and 90m cast) after dinner. Finishing work at 20:00pm. Picked up Palmira and crew at 20:30 from getting wildlife cams and transited to Prince Rupert.
May 27	Transited to Prince Rupert overnight. Deployed both boats for nearshore sampling and equipment testing. The Palmira crew (Amy, Shannon and Emily) deployed 3 BRUVs and collected water at 6 sites using the niskin lines, from Flora Bank. The Red Ape crew (Michelle, Cole and Cynthia) tested a ADCP (current meter). The ADCP worked well and Michelle felt it would be a very useful tool for the IMRP program to detect snapshot currents around oils spills in real time. Two science crew stayed aboard the Vector to fix the seine net and complete data downloads. Both boats returned to Vector at 12:30 and the crew organized and cleaned gear for the next science crew. The Vector tied up to Seal Cove for the rest of the day.
May 28	End of Leg 1 Science crew change ndash; Emily, Michelle, Cole, Cynthia and Sharon left Vector at 06:30 to take the shuttle to Terrace. Amy, Shannon and Kayleigh stayed on board. The next science crew flew into Prince Rupert arriving around 15:30.; Kayleigh and Shannon tested the Ascension microplastics sampler. The Vector anchored at the Kinahan Islands.
May 29	Dive skiff left the ship at 0730 to do microplastics sampling at Philips point, returned for fire drill at 1230 and then went to Prince Rupert Harbour to sample in the afternoon and returned to the ship at approximately 1930.; The ship sampled 6 eDNA stations in Gull Rocks South RCA and over sponge reefs in southern Chatham Sound (SpongeReef8, 18Gul_RCA, 19Gul_RCA, 20Gul_RCA, 22Gul_RCA, 23Gul_RCA) and returned to anchor at the Kinahan Islands.
May 30	Dive skiff (Palmira) left the ship at 0700 (Sarah, Sarah, Kayleigh) and did microplastics sampling at the end of Tuck Inlet and Osborn Cove, charging the Ascension at the Seal Cove CCG station. The ship transited to northern Chatham Sound and sampled 3 eDNA stations over sponge reefs and within the Hodgson RCA (SpongeReef11, SpongeReef15, 9Hod_RCA) and then launched the Red Ape (Shannon, Kathryn, Carrie) to sample 2 shallower sites in the Hodgson Reefs RCA (6Hod_RCA, 7Hod_RCA) while two personnel (Amy, Cindy) remained on the Vector to finish water filtration.; Conditions did not allow for small boat sampling for one site (10Hod_RCA) so the Red Ape returned to the Vector. The Vector anchored by Tugwell Island. Dive skiff returned around 1900.

May 31st	Dive skiff (Palmira) left the ship at 0700 (Sarah, Sarah, Kayleigh) and did microplastics sampling in Metlakatla Passage and Prince Rupert Harbour. The ship sampled 6 eDNA stations over the sponge reef in northern Chatham Sound and the Gull Rocks North RCA (SpongeReef1, SpongeReef2, SpongeReef6, 16Gul_RCA, 17Gul_RCA, 21Gul_RCA) and then launched the Red Ape (Shannon, Kathryn, Carrie) to complete small boat sampling of the final station (10Hod_RCA) while two personnel (Amy, Cindy) remained on the Vector to finish water filtration.; Dive skiff returned to the ship at 1700 to Kinahan Islands and began transit to Devlin Bay in Caamano Sound.
June 1st	Both Dive skiffs left the boat around 0530.; One skiff went to Goodacre point to scout the target site and a backup site and deployed some bruvns at Goodacre and some wildlife cameras at beach nearby (that wasn't a selected site or backup).; The other skiff checked out the Gillespie channel site (too steep) and the backup site where one wildlife camera was set up.; They then continued on to Oswald Bay where two additional sites were scouted and wildlife cameras set up.; The first skiff returned to the Vector near Goodacre pt where the skiff was loaded on the ship and the second skiff was unable to unload due to unsafe conditions and returned to Devlin Bay where they eventually unloaded when the Vector returned.;
June 2nd	Left at 0500 and surveyed backup site that we called Thumb Cove, did eDNA, intertidal biodiversity survey, bruvns and beach seining.; Returned to the ship in Devlin Bay around lunch and 2 eDNA sites sampled in 2022 were repeat sampled in Caamano sound in the afternoon (S05, S09). Attempted to anchor in Oswald Bay but it was too swelly so returned to Devlin Bay.
June 3rd	Left at 0500 and surveyed backup site north of Goodacre Point, did eDNA, intertidal biodiversity survey, bruvns and beach seining.; Went back to Oswald Bay to retrieve wildlife cameras since we won't be able to survey the sites due to weather.; Vector headed to Borrowman Bay to anchor.
June 4th	Left at 0500 and attempted to go to Kettle Inlet but it was too swelly so headed to Meiss Passage. Did eDNA, intertidal biodiversity survey, bruvns and beach seining and returned to Vector anchored in Borrowman Bay.
June 5th	Left at 0500 and surveyed Kettle Inlet, did eDNA, intertidal biodiversity survey, bruvns and beach seining, moved to anchorage in Parkers Passage.
June 6 <sup>th</sup>	Left at 0615 and surveyed North Rennison Island, did eDNA, intertidal biodiversity survey, bruvns and beach seining, moved to anchorage at Baker Pt.; Also retrieved wildlife camera in Meiss Passage.
June 7th	Left at 0700 and surveyed Baker Pt, did eDNA, intertidal biodiversity survey, bruvns and beach seining, moved to anchorage at Baker Pt.; Also retrieved wildlife camera on North Rennison.; Returned to ship at 1330 and began transit to Port Hardy.
June 8th	Arrived in PH around 0600, after many, many offload plans we got a dock space b/c a safety boat for Van Isle 360 didn't show up. Finished offload by approximately 1030-1100am.

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## Scientific Equipment Report

We tested a new 'underway microplastics sampler using the Vector's seawater system and it worked well.; We also tested the Ascension in-situ microplastics sampler from the dive skiffs and it was also a success.

## Radioisotope Report

[Not Entered]

## Scientific Successes and Concerns

The science crew was able to complete all of the scheduled work.

## Platform Successes and Concerns

During the survey there were several newer CCG crew. This lack of experience meant that science needed to modify operations to account for this as new CCG crew members were trained and became familiar with Science deck operations.

Now that there is a bookable dock in Port Hardy we would like clarification regarding who is responsible for booking the dock space for the offload day.

## Safety Concerns

[Not Entered]

## Hazardous Occurrences

One Science crew member injured their wrist when working with the underway microplastics sampler and they pulled off some tubing and bashed it against the sink.; One Science crew member injured their hand when they opened a cupboard and batteries fell off a top shelf.

## Other Comments

[Not Entered]


## Images


[No Alternative Image Provided]

**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
 2023-035_Outline.docx	file	252K	Tuesday 11 Apr 2023 12:00

	<a href="#">2023-035logbook.pdf</a>	file	962K	Friday 16 Jun 2023 14:04
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