



KAIMEI / KM-ROV Cruise Report

KM25-07

Prediction of Variability in Marine Biodiversity and

Understanding the Dynamics of Pollutants (2/2)

< Sagami Bay, Suruga Bay, Higashi-Aogashima Knoll, Myojin Knoll >



August 6th, 2025 – August 18th, 2025

Japan Agency for Marine-Earth Science and Technology

(JAMSTEC)

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Finally, my heartfelt thanks go to all the onboard scientists for working together to find the best ways for each study and to adjust the schedule despite the limited time. Thank you. This was truly the best cruise of my research life.



1 Cruise Information

1.1 Cruise ID :

KM25-07

1.2 Name of vessel :

R/V KAIMEI / KAIMEI-ROV

1.3 Title of the cruise :

Understanding the actual condition of marine pollutants and their impact on marine ecosystems

1.4 Chief scientist :

Yasuo Furushima [JAMSTEC]

1.5 Representative of the science party :

Yasuo Furushima [JAMSTEC]

1.6 Research titles :

Prediction of Variability in Marine Biodiversity and Understanding the Dynamics of Pollutants (2/2)

1.7 Cruise period:

August 6th, 2025 - August 18th, 2025

1.8 Ports of call:

Yokosuka (JAMSTEC) – Yokosuka (JAMSTEC)

1.9 Research area:

Sagami Bay, Higashiaogashima Knoll, Myojin Knoll, Suruga Bay

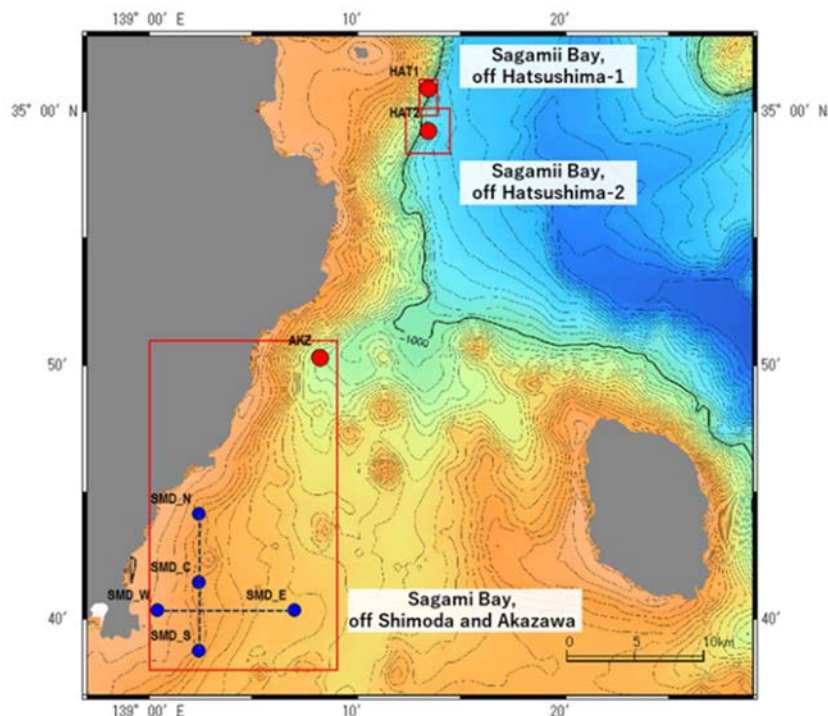


Fig.1-1 Survey sites in Sagami Bay

Table 1-1. Survey stations in Sagami Bay

Sagami Bay		Lat.		Long.		Dep.	Survey items	Remarks
Stn. Name	Stn. No.	D.	M.	D.	M.	(m)		
Hatsuhima-1	HAT1	35	0.9300	139	13.3900	860	KM-ROV	
Hatsuhima-2	HAT2	34	59.2598	139	13.3776	1070	KM-ROV	
Shimoda_N	SMD_N	34	44.2020	139	2.3340	200	XCTD	Underway survey with shipboard acoustic instruments in operation
Shimoda_C	SMD_C	34	41.5000	139	2.3333	250	XCTD	
Shimoda_S	SMD_S	34	38.8000	139	2.3333	190	XCTD	
Shimoda_E	SMD_E	34	40.4160	139	6.9180	430	XCTD	
Shimoda_W	SMD_W	34	40.4160	139	0.3720	70	XCTD	

Note: No survey was conducted at off Akazawa (AKZ).

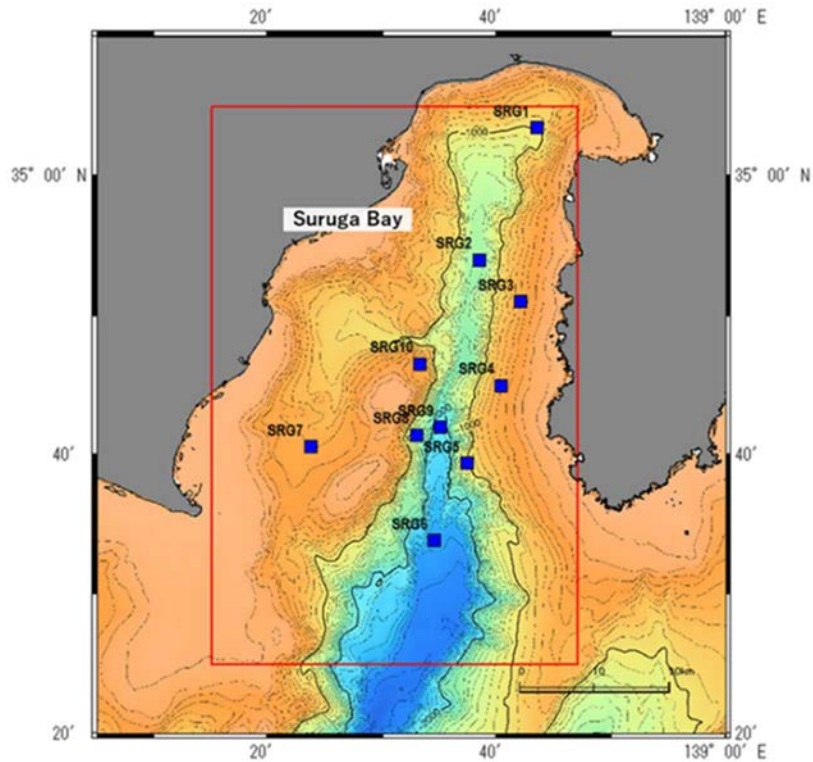


Fig.1-2 Survey sites in Suruga Bay

Table 1-2. Survey stations in Suruga Bay

Suruga Bay		Lat.		Long.		Dep.	Survey items	Remarks
Stn. Name	Stn. No.	D.	M.	D.	M.	(m)		
Innermost Bay	SRG1	35	3.4270	138	43.5060	1010	CTD, Filter Pump, net	
Inner Bay	SRG2	34	53.9190	138	38.4680	1590	CTD, Filter Pump, net	
Off Toi	SRG3	34	51.0170	138	42.0720	510	CTD, Filter Pump, net	
Off Toi (South)	SRG4	34	44.9200	138	40.3940	520	CTD, Filter Pump, net	
Bay Mouth 1	SRG5	34	39.4192	138	37.4100	1020	CTD, Filter Pump, net	
Bay Mouth 2	SRG6	34	33.8590	138	34.5120	2560	CTD, Filter Pump, net	
Senoumi	SRG7	34	40.5670	138	23.7810	500	CTD, Filter Pump, net	
Central Bay 1	SRG8	34	41.4190	138	33.0090	1510	CTD, Filter Pump, net	
Central Bay 2	SRG9	34	41.9790	138	35.0370	2060	CTD, Filter Pump, net	
Central Bay 3	SRG10	34	46.4960	138	33.2740	530	CTD, Filter Pump, net	

Note: In Suruga Bay, surveys were conducted only at the innermost bay station (SRG1).

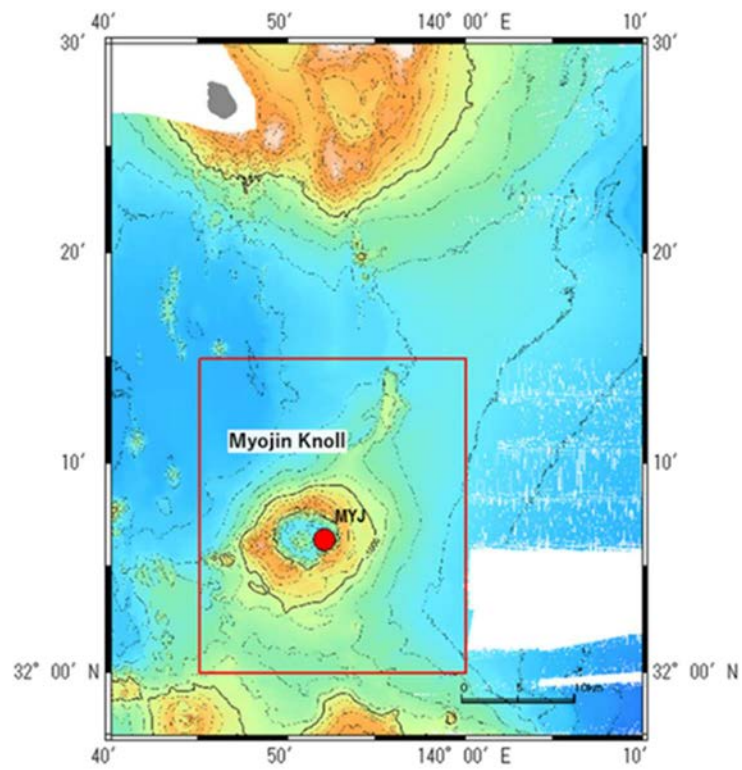


Fig.1-3 Survey sites on the Myojin Knoll

Table 1-3. Survey stations on the Myojin Knoll

Myojin Knoll		Lat.		Long.		Dep.	Survey items	Remarks
Stn. Name	Stn. No.	D.	M.	D.	M.	(m)		
Myojin	MYJ	32	6.3440	139	52.0500	1360	KM-ROV	

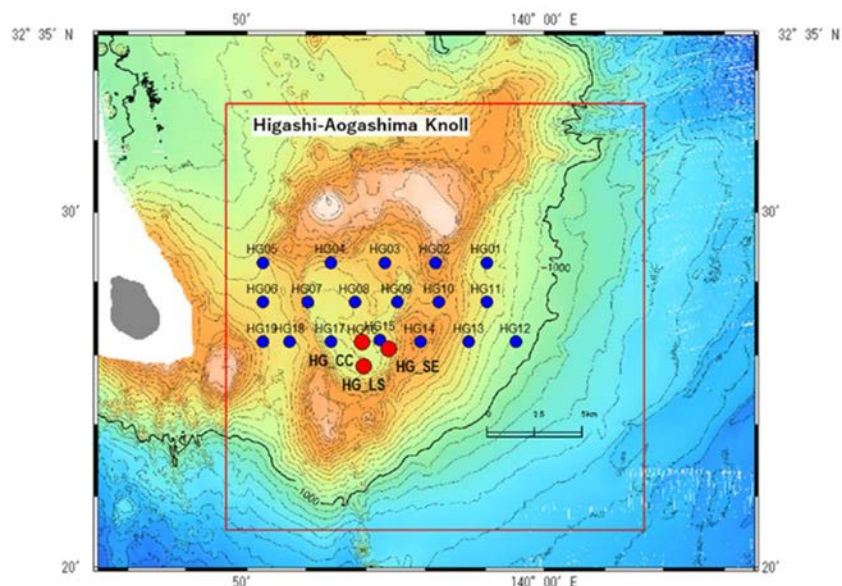


Fig.1-4 Survey sites on the Higashi-Aogashima Knoll

Table 1-4. Survey stations on the Higashi-Aogashima Knoll

Higashi Aogashima Knoll		Lat.		Long.		Dep.	Survey items	Remarks
Stn. Name	Stn. No.	D.	M.	D.	M.	(m)		
HG_LS	HG_LS	32	25.7000	139	53.9000	800	Lander, KM-ROV, CTD, VMP-X, Filter Pump, Net	
HG_SE-site	HG_SE	32	26.1822	139	54.7248	780	KM-ROV, CTD, Net	
HG_CC-site	HG_CC	32	26.3739	139	53.8538	750	KM-ROV, CTD, Net	
HG001	HG01	32	28.6000	139	58.0000	800	XCTD	North Line
HG002	HG02	32	28.6000	139	56.3000	450		
HG003	HG03	32	28.6000	139	54.6000	650		
HG004	HG04	32	28.6000	139	52.8000	700		
HG005	HG05	32	28.6000	139	50.5000	750		
HG006	HG06	32	27.5000	139	50.5000	750		Center Line
HG007	HG07	32	27.5000	139	52.0000	750		
HG008	HG08	32	27.5000	139	53.6000	700		
HG009	HG09	32	27.5000	139	55.0000	750		
HG010	HG10	32	27.5000	139	56.4000	450		
HG011	HG11	32	27.5000	139	58.0000	800		South Line
HG012	HG12	32	26.4000	139	59.0000	900		
HG013	HG13	32	26.4000	139	57.4000	800		
HG014	HG14	32	26.4000	139	55.8000	400		
HG015	HG15	32	26.4300	139	54.4300	780		
HG016	HG16	32	26.3600	139	53.8600	750		
HG017	HG17	32	26.4000	139	52.8000	780		
HG018	HG18	32	26.4000	139	51.4000	700		
HG019	HG19	32	26.4000	139	50.5000	600		

1.10 Cruise track (Research Map)

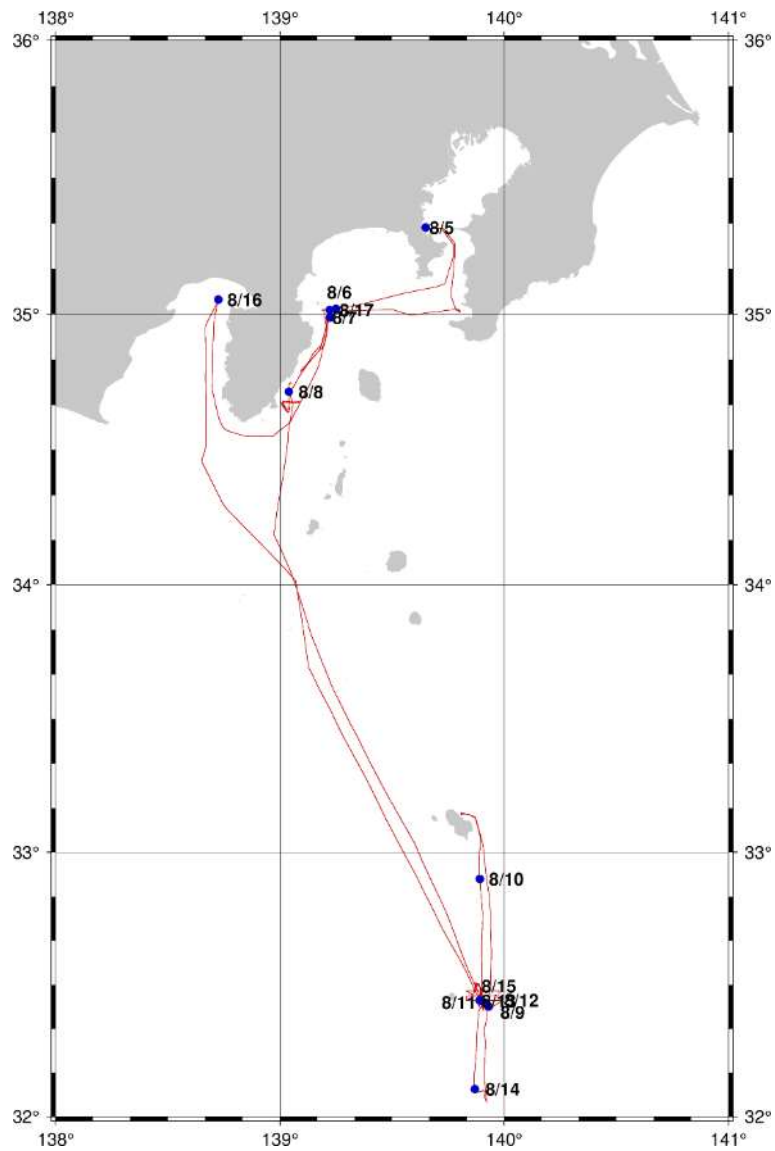


Fig.1-5 Track charts of the R/V KAIMEI research cruise KM25-07

1.11 Cruise log

Table 1-5. Cruise log of KM25-07

JST		事象	SOJ	UTC		Lat.	Lon.	Event
8/6	08:30	横須賀港 JAMSTEC 専用 1 号 棧橋	20250805,233000	8/5	23:30	35-19.1200N	139-38.9900E	Departure from Yokosuka (JAMSTEC)
8/6	11:42	表層海水分析 開始	20250806,024200	8/6	02:42	35-01.8579N	139-19.5310E	Sea surface Thermosalinograph system start
8/6	12:04	調査海域 (相模湾初島 沖) 着	20250806,030400	8/6	03:04	35-01.1009N	139-14.5216E	Arrived at Station (Hatsu-shima off)
8/6	12:04	XBT 投入	20250806,030400	8/6	03:04	35-01.1009N	139-14.5216E	XBT Observation
8/6	13:17	潜航開始 #326	20250806,041700	8/6	04:17	35-00.9308N	139-13.4039E	KM-ROV #326 start
8/6	13:44	TMS/V 離脱	20250806,044400	8/6	04:44	35-00.9289N	139-13.3988E	
8/6	13:48	ビークル着 底 深度 917m	20250806,044800	8/6	04:48	35-00.9289N	139-13.3988E	KM-ROV landed on the sea bottom (Depth: 917 m)
8/6	15:53	ビークル離 底 深度 851m	20250806,065300	8/6	06:53	35-00.9522N	139-13.3204E	KM-ROV left the sea bottom (Depth: 851 m)
8/6	16:02	TMS/V 結合	20250806,070200	8/6	07:02	35-00.9521N	139-13.3205E	
8/6	16:30	水切り	20250806,073000	8/6	07:30	35-00.9498N	139-13.3123E	
8/6	16:34	揚収完了	20250806,073400	8/6	07:34	35-00.9485N	139-13.3072E	KM-ROV #326 finish
8/7	08:11	潜航開始 #327	20250806,231100	8/6	23:11	34-59.2574N	139-13.3750E	KM-ROV #327 start
8/7	08:40	TMS/V 離脱	20250806,234000	8/6	23:40	34-59.2579N	139-13.3756E	
8/7	08:45	ビークル着 底 深度 1085m	20250806,234500	8/6	23:45	34-59.2572N	139-13.3750E	KM-ROV landed on the sea bottom (Depth: 1,085 m)
8/7	16:09	ビークル離 底 深度 1191m	20250807,070900	8/7	07:09	34-59.4891N	139-13.4942E	KM-ROV left the sea bottom (Depth: 1,191 m)
8/7	16:14	TMS/V 結合	20250807,071400	8/7	07:14	34-59.4887N	139-13.4945E	
8/7	16:46	水切り	20250807,074600	8/7	07:46	34-59.4736N	139-13.4442E	
8/7	16:52	揚収完了	20250807,075200	8/7	07:52	34-59.4716N	139-13.4386E	KM-ROV #327 finish
8/8	06:14	XBT 投入	20250807,211400	8/7	21:14	34-44.3456N	139-03.8593E	XBT Observation
8/8	06:38	水中録音機 への音響発振 調査 開始	20250807,213800	8/7	21:38	34-42.8698N	139-02.3893E	Accousitc recording survey start
8/8	11:38	XCTD 投入	20250808,023800	8/8	02:38	34-44.4653N	139-02.3261E	XCTD Observation
8/8	12:18	XCTD 投入	20250808,031800	8/8	03:18	34-41.5224N	139-02.3334E	XCTD Observation
8/8	12:59	XCTD 投入	20250808,035900	8/8	03:59	34-38.5293N	139-02.3379E	XCTD Observation
8/8	13:43	XCTD 投入	20250808,044300	8/8	04:43	34-40.4775N	139-00.7642E	XCTD Observation
8/8	14:48	XCTD 投入	20250808,054800	8/8	05:48	34-40.5297N	139-05.1299E	XCTD Observation
8/8	16:00	水中録音機 への音響発振 調査 終了	20250808,070000	8/8	07:00	34-42.8823N	139-02.3203E	Accousitc recording survey finish
8/8	16:00	調査海域 (東青ヶ島海 丘) 向け発航	20250808,070000	8/8	07:00	34-42.8823N	139-02.3203E	Departured for Station
8/9	03:35	調査海域 (東青ヶ島海 丘) 着	20250808,183500	8/8	18:35	32-26.2119N	139-53.9275E	Arrived at Station (Higashi Aogashima knoll)
8/9	06:43	XBT 投入	20250808,214300	8/8	21:43	32-25.9558N	139-53.9016E	XBT Observation
8/9	08:10	潜航開始 #328	20250808,231000	8/8	23:10	32-25.9182N	139-53.8226E	KM-ROV #328 start
8/9	08:33	TMS/V 離脱	20250808,233300	8/8	23:33	32-25.9183N	139-53.9052E	
8/9	08:38	ビークル着 底 深度 807m	20250808,233800	8/8	23:38	32-25.9178N	139-53.9049E	KM-ROV landed on the sea bottom (Depth: 807 m)
8/9	09:28	ビークル離 底 深度 809 m	20250809,002800	8/9	00:28	32-25.8659N	139-53.9037E	KM-ROV left the sea bottom (Depth: 809 m)
8/9	09:35	TMS/V 結合	20250809,003500	8/9	00:35	32-25.8659N	139-53.9053E	
8/9	10:01	水切り	20250809,010100	8/9	01:01	32-25.8080N	139-54.1076E	
8/9	10:10	水中録音機 揚収	20250809,011000	8/9	01:10	32-25.7965N	139-54.1870E	recorder (KM24-03) recovery

8/9	10:11	揚収完了	20250809,011100	8/9	01:11	32-25.7960N	139-54.1890E	KM-ROV #328 finish
8/9	11:24	CTD 観測開始 (#1)	20250809,022400	8/9	02:24	32-25.2417N	139-55.2750E	CTD cast #01 start
8/9	12:11	CTD 観測終了 (#1)	20250809,031100	8/9	03:11	32-24.9398N	139-55.9992E	CTD cast #01 finish
8/9	12:50	東青ヶ島海丘発、八丈島向け発航	20250809,035000	8/9	03:50	32-25.5906N	139-55.4225E	Departured for Station
8/9	16:20	八丈島沖着	20250809,072000	8/9	07:20	33-08.6702N	139-49.0671E	Arrived at Hachijio-jima off
8/9	16:50	乗組員 2 名 (二電士、付添三航士)、作業艇を使用して上陸。病院にて受診	20250809,075000	8/9	07:50	33-08.5824N	139-48.5361E	
8/9	18:42	乗組員 1 名 (二電士)、入院の為下船とする。	20250809,094200	8/9	09:42	33-08.6353N	139-48.8081E	
8/10	10:19	乗組員 1 名 (付添三航士)、作業艇を使用して帰投	20250810,011900	8/10	01:19	33-08.6052N	139-48.4269E	
8/10	10:30	八丈島発、東青ヶ島海丘向け発航	20250810,013000	8/10	01:30	33-08.7486N	139-48.3813E	Departured for Station
8/10	14:15	東青ヶ島海丘着	20250810,051500	8/10	05:15	32-26.8244N	139-53.2922E	Arrived at Station (Higashi Aogashima knoll)
8/10	14:53	CTD 観測開始 (#2)	20250810,055300	8/10	05:53	32-26.3217N	139-53.6202E	CTD cast #02 start
8/10	15:47	CTD 観測終了 (#2)	20250810,064700	8/10	06:47	32-25.6497N	139-53.5959E	CTD cast #02 finish
8/10	16:50	ランダー投入	20250810,075000	8/10	07:50	32-25.8019N	139-53.9553E	Lander deployment
8/10	17:08	ランダー着底 ()	20250810,080800	8/10	08:08	32-25.7662N	139-53.9396E	Lander fixed position (32:25.76N, 139:53.84E)
8/10	17:31	小型プランクトンネットによる採集開始	20250810,083100	8/10	08:31	32-25.7025N	139-53.9800E	Small plankton net start
8/10	19:50	小型プランクトンネットによる採集終了	20250810,105000	8/10	10:50	32-24.5236N	139-54.2886E	Small plankton net finish
8/11	08:15	XCTD 投入	20250810,231500	8/10	23:15	32-25.7747N	139-53.9358E	XCTD Observation
8/11	09:15	投下式乱流計観測 開始	20250811,001500	8/11	00:15	32-25.6976N	139-53.9243E	VMP-X Observation start
8/11	10:16	投下式乱流計 回収	20250811,011600	8/11	01:16	32-25.7362N	139-55.1496E	VMP-X Observation finish (Recovery)
8/11	10:50	XCTD 投入	20250811,015000	8/11	01:50	32-26.0934N	139-54.7803E	XCTD Observation
8/11	11:35	現場濾過器観測 (10、50、100m)、シャドウグラフカメラ (120m) 開始	20250811,023500	8/11	02:35	32-26.4348N	139-54.4655E	Large volume pump (10m, 50m, 100m) and Shadow graph camera (120m) start
8/11	13:11	現場濾過器観測 終了	20250811,041100	8/11	04:11	32-24.7945N	139-55.1580E	Large volume pump and Shadow graph camera finish
8/11	14:01	MBES 海底地形調査 開始	20250811,050100	8/11	05:01	32-26.0901N	139-58.9913E	MBES survey start
8/11	14:10	XCTD 測線 (19 点) 開始	20250811,051000	8/11	05:10	32-26.3848N	139-59.0187E	XCTD Observations start (19 points)
8/11	19:05	XCTD 測線 (19 点) 終了	20250811,100500	8/11	10:05	32-28.6033N	139-50.5268E	XCTD Observations finish
8/11	19:12	MBES 海底地形調査 終了	20250811,101200	8/11	10:12	32-28.5508N	139-49.9220E	MBES survey finish
8/11	19:40	小型プランクトンネット	20250811,104000	8/11	10:40	32-27.8161N	139-51.3020E	Small plankton net start

		による採集 開始						
8/11	20:21	小型プラン クtonネット による採集 終了	20250811,112100	8/11	11:21	32-27.7032N	139-51.5649E	Small plankton net finish
8/12	08:06	潜航開始 #329	20250811,230600	8/11	23:06	32-26.2018N	139-54.6717E	KM-ROV #329 start
8/12	08:28	TMS/V 離脱	20250811,232800	8/11	23:28	32-26.1841N	139-54.6588E	
8/12	08:33	ピークル着 底 深度 773m	20250811,233300	8/11	23:33	32-26.1842N	139-54.6581E	KM-ROV landed on the sea bottom (Depth: 773 m)
8/12	09:13	ピークル離 底 深度 762 m	20250812,001300	8/12	00:13	32-26.1950N	139-54.6941E	KM-ROV left the sea bottom (Depth: 762 m)
8/12	09:19	TMS/V 結合	20250812,001900	8/12	00:19	32-26.1948N	139-54.6941E	
8/12	09:43	簡易型定点 観測カメラに 浸水が発生し た為、巻取り を一旦停止 し、投棄し た。	20250812,004300	8/12	00:43	32-26.1822N	139-54.7117E	
8/12	09:53	水切り	20250812,005300	8/12	00:53	32-26.1645N	139-54.7493E	
8/12	09:58	揚収完了	20250812,005800	8/12	00:58	32-26.1052N	139-54.7230E	KM-ROV #329 finish
8/12	12:15	XCTD 投入	20250812,031500	8/12	03:15	32-26.4584N	139-53.3870E	XCTD Observation
8/12	12:56	現場濾過器 観測 (30、 200、 400m)、シャ ドウグラフカ メラ (420m) 開始	20250812,035600	8/12	03:56	32-26.3269N	139-53.5652E	Large volume pump (30m, 200m, 400m) and Shadow graph camera (420m) start
8/12	16:32	現場濾過器 観測シャドウ グラフカメラ 終了	20250812,073200	8/12	07:32	32-25.3137N	139-53.3751E	Large volume pump and Shadow graph camera finish
8/12	17:58	小型プラン クtonネット による採集 開始	20250812,085800	8/12	08:58	32-30.0724N	139-52.6705E	Small plankton net start
8/12	19:58	小型プラン クtonネット による採集 終了	20250812,105800	8/12	10:58	32-28.5009N	139-52.1901E	Small plankton net finish
8/13	08:10	潜航開始 #330	20250812,231000	8/12	23:10	32-26.3218N	139-53.8548E	KM-ROV #330 start
8/13	08:32	TMS/V 離脱	20250812,233200	8/12	23:32	32-26.3116N	139-53.8761E	
8/13	08:36	ピークル着 底 深度 773m	20250812,233600	8/12	23:36	32-26.3114N	139-53.8760E	KM-ROV landed on the sea bottom (Depth: 773 m)
8/13	14:46	ピークル離 底 深度 808m	20250813,054600	8/13	05:46	32-25.7727N	139-53.8352E	KM-ROV left the sea bottom (Depth: 808 m)
8/13	14:50	TMS/V 結合	20250813,055000	8/13	05:50	32-25.7727N	139-53.8353E	
8/13	15:13	水切り	20250813,061300	8/13	06:13	32-25.7712N	139-53.8395E	
8/13	15:19	揚収完了	20250813,061900	8/13	06:19	32-25.7714N	139-53.8398E	KM-ROV #330 finish
8/13	17:30	調査海域 (明神海丘) 向け発航	20250813,083000	8/13	08:30	32-23.7637N	139-53.1761E	Departured for Station
8/13	18:30	調査海域 (明神海丘) 着	20250813,093000	8/13	09:30	32-10.0692N	139-52.0453E	Arrived at Station (Myojin knoll)
8/13	18:59	8 の字航走 開始	20250813,095900	8/13	09:59	32-06.1824N	139-52.0801E	Calibration for Three component magneto meter start
8/13	19:31	8 の字航走 終了	20250813,103100	8/13	10:31	32-05.8741N	139-52.4469E	Calibration for Three component magneto meter finish
8/14	06:48	XBT 投入	20250813,214800	8/13	21:48	32-06.5565N	139-51.9135E	XBT Observation
8/14	08:13	潜航開始 #331	20250813,231300	8/13	23:13	32-06.4073N	139-52.1022E	KM-ROV #331 start
8/14	08:46	TMS/V 離脱	20250813,234600	8/13	23:46	32-06.3184N	139-52.1417E	
8/14	08:50	ピークル着 底 深度 1304m	20250813,235000	8/13	23:50	32-06.3180N	139-52.1416E	KM-ROV landed on the sea bottom (Depth: 773 m)

8/14	14:03	ピークル離底 深度 1336 m	20250814,050300	8/14	05:03	32-06.3411N	139-52.0765E	KM-ROV left the sea bottom (Depth: 808 m)
8/14	14:07	TMS/V 結合	20250814,050700	8/14	05:07	32-06.3411N	139-52.0766E	
8/14	14:43	水切り	20250814,054300	8/14	05:43	32-05.9288N	139-52.4212E	
8/14	14:47	揚収完了	20250814,054700	8/14	05:47	32-05.8353N	139-52.4840E	KM-ROV #331 finish
8/14	15:09	ニューストンネット観測開始	20250814,060900	8/14	06:09	32-05.5635N	139-52.9898E	Neuston Net start
8/14	15:59	ニューストンネット観測終了	20250814,065900	8/14	06:59	32-05.9459N	139-54.4488E	Neuston Net finish
8/14	16:30	小型プランクトンネットによる採集開始	20250814,073000	8/14	07:30	32-05.9663N	139-54.5515E	Small plankton net start
8/14	19:43	小型プランクトンネットによる採集終了	20250814,104300	8/14	10:43	32-03.2695N	139-55.1660E	Small plankton net finish
8/14	19:45	調査海域（東青ヶ島海丘）向け発航	20250814,104500	8/14	10:45	32-03.2283N	139-55.1680E	Departured for Station
8/14	22:00	調査海域（東青ヶ島海丘）着	20250814,130000	8/14	13:00	32-25.0989N	139-54.3403E	Arrived at Station (Higashi Aogashima knoll)
8/15	09:13	ランダー揚収	20250815,001300	8/15	00:13	32-24.9638N	139-54.1222E	Lander recovery
8/15	11:08	潜航開始 #332	20250815,020800	8/15	02:08	32-26.4312N	139-53.7978E	KM-ROV #332 start
8/15	11:35	TMS/V 離脱	20250815,023500	8/15	02:35	32-26.3362N	139-53.8906E	
8/15	11:41	ピークル着底 深度 765m	20250815,024100	8/15	02:41	32-26.3362N	139-53.8905E	KM-ROV landed on the sea bottom (Depth: 773 m)
8/15	12:16	ピークル離底 深度 754 m	20250815,031600	8/15	03:16	32-26.3729N	139-53.8454E	KM-ROV left the sea bottom (Depth: 808 m)
8/15	12:22	TMS/V 結合	20250815,032200	8/15	03:22	32-26.3730N	139-53.8450E	
8/15	12:44	水切り	20250815,034400	8/15	03:44	32-26.1703N	139-53.9831E	
8/15	12:50	揚収完了	20250815,035000	8/15	03:50	32-26.1342N	139-54.0059E	KM-ROV #332 finish
8/15	14:34	CTD 観測 (#3) 開始	20250815,053400	8/15	05:34	32-26.5252N	139-53.7649E	CTD cast #03 start
8/15	16:00	CTD 観測 (#3) 終了	20250815,070000	8/15	07:00	32-26.1879N	139-54.0226E	CTD cast #03 finish
8/15	16:15	小型プランクトンネットによる採集開始	20250815,071500	8/15	07:15	32-26.1533N	139-54.0414E	Small plankton net start
8/15	16:44	小型プランクトンネットによる採集終了	20250815,074400	8/15	07:44	32-25.9172N	139-54.0590E	Small plankton net finish
8/15	17:00	調査海域（駿河湾）向け発航	20250815,080000	8/15	08:00	32-25.9513N	139-54.0131E	Departured for Station
8/16	07:00	調査海域（駿河湾）着	20250815,220000	8/15	22:00	35-03.0578N	138-43.5178E	Arrived at Station (Suruga-wan)
8/16	08:30	CTD 観測 (#4) 開始	20250815,233000	8/15	23:30	35-03.2341N	138-43.5325E	CTD cast #04 start
8/16	10:34	CTD 観測 (#4) 終了	20250816,013400	8/16	01:34	35-03.2340N	138-43.5325E	CTD cast #04 finish
8/16	11:02	現場濾過器観測（15、70、500m）開始	20250816,020200	8/16	02:02	35-03.2341N	138-43.5323E	Large volume pump (15m, 70m, 500m) start
8/16	11:44	小型プランクトンネットによる採集開始	20250816,024400	8/16	02:44	35-03.2344N	138-43.5316E	Small plankton net start
8/16	14:13	小型プランクトンネットによる採集終了	20250816,051300	8/16	05:13	35-03.2345N	138-43.5321E	Small plankton net finish
8/16	14:53	現場濾過器観測 終了	20250816,055300	8/16	05:53	35-03.2345N	138-43.5321E	Large volume pum finish
8/16	15:12	ニューストンネット観測開始	20250816,061200	8/16	06:12	35-03.0904N	138-43.4037E	Neuston Net start

8/16	16:08	ニューストンネット観測終了	20250816,070800	8/16	07:08	35-01.2587N	138-43.0227E	Neuston Net finish
8/16	16:25	調査海域（相模湾）向け発航	20250816,072500	8/16	07:25	35-00.8326N	138-42.9981E	Departured for Station
8/16	21:45	調査海域（相模湾）着	20250816,124500	8/16	12:45	35-01.0048N	139-11.5418E	Arrived at Station (Hatsu-shima off)
8/17	05:50	XBT 投入	20250816,205000	8/16	20:50	35-00.7523N	139-13.6155E	XBT Observation
8/17	07:08	潜航開始 # 333	20250816,220800	8/16	22:08	35-00.9515N	139-13.4052E	KM-ROV #333 start
8/17	07:33	TMS/V 離脱	20250816,223300	8/16	22:33	35-00.9268N	139-13.4001E	
8/17	07:37	ビークル着底 深度 918m	20250816,223700	8/16	22:37	35-00.9269N	139-13.4001E	KM-ROV landed on the sea bottom (Depth: 918 m)
8/17	10:28	ビークル離底 深度 849 m	20250817,012800	8/17	01:28	35-00.9560N	139-13.3222E	KM-ROV left the sea bottom (Depth: 849 m)
8/17	10:33	TMS/V 結合	20250817,013300	8/17	01:33	35-00.9561N	139-13.3224E	
8/17	10:56	水切り	20250817,015600	8/17	01:56	35-00.9560N	139-13.3224E	
8/17	11:01	揚収完了	20250817,020100	8/17	02:01	35-00.9562N	139-13.3218E	KM-ROV #333 finish
8/17	13:18	CTD 観測 (#5) 開始	20250817,041800	8/17	04:18	35-00.9016N	139-13.3534E	
8/17	14:50	CTD 観測 (#5) 終了	20250817,055000	8/17	05:50	35-00.8219N	139-13.4093E	
8/17	15:20	横須賀向け発航	20250817,062000	8/17	06:20	35-00.7979N	139-13.4736E	Departured for Station (Sagami-bay Hatsu-shima off)
8/17	18:26	表層海水分析 終了	20250817,092600	8/17	09:26	35-00.8210N	139-48.1013E	Sea surface Thermosalinograph system finish
8/18	09:00	入港	20250818,000000	8/18	00:00	35-19.12N	139-38.99E	Arrived at YOKOSUKA (JAMSTEC)

2 Cruise Abstract

The present cruise was conducted to investigate the impacts of human activities on marine ecosystems, and to obtain scientific knowledge for their assessment and conservation. The following surveys and observations were carried out.

(1) Assessment of Microplastic Pollution

Floating plastic debris at the sea surface eventually sinks and accumulates on the deep seafloor. During this cruise, vertical profiling using in-situ filtration systems and surface tows with a neuston net were conducted in Suruga Bay and the East Aogashima Knoll area to collect microplastics (MPs), including small microplastics (SMPs, <100 μm), in order to characterize their vertical distribution. In addition, ROV-based biological and sediment core sampling was performed to investigate the distribution of plastics on the deep seafloor and the chemical contamination of benthic organisms.

(2) Advancement and Optimization of Survey and Assessment Methods

To evaluate the impacts of environmental changes on ecosystems from multiple perspectives, baseline environmental surveys were conducted at the East Aogashima Knoll. These included CTD rosette sampling, water column observations with XCTD and VMP-X for turbulence and physical structure, near-seafloor measurements with a free-fall lander system and chemical sensors, and ROV surveys equipped with RamaCam and shadowgraph cameras for seafloor observation, mapping, and biological/sediment sampling. Through these activities, baseline environmental data were obtained. The collected image data will be further utilized for deep-learning analyses with AI, aiming at the development of new methods for species distribution prediction and identification.

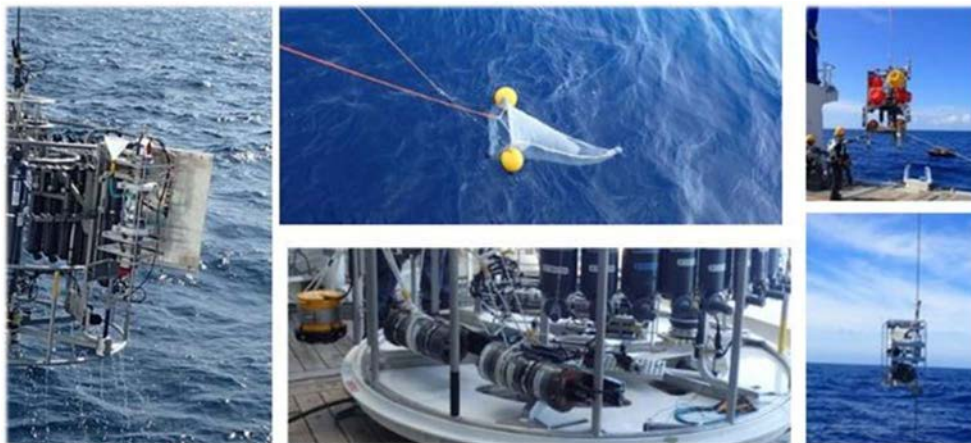
In addition, to achieve the objectives of this cruise in a more comprehensive manner, several research topics adopted through a related symposium were also addressed. These included the following seven studies:

- ① Microplastics and Biofilm Dynamics in the Kuroshio Extension Region of the Northwest Pacific Ocean
- ② Uptake of microplastics by endemic invertebrates in hydrothermal vent fields
- ③ Development of monitoring methods for deep-sea soundscapes using underwater acoustic recorders
- ④ Mapping and short-term mooring measurements with in-situ chemical sensors at hydrothermal vent sites
- ⑤ Development of estimation methods for near-bottom turbulence, current flow,

and suspended particles for optimized EIA techniques

- ⑥ Improvement of shadowgraph camera systems for plume monitoring in deep-sea mining impact assessments
- ⑦ Investigation of the behavior of large macroalgae deposited on the deep seafloor

These research topics are intended to complement and further develop the overall objectives of this cruise.



3 Participants aboard

3.1 Research group

Chief scientist	Yasuo Furushim	JAMSTEC
Associate chief scientist	Takao Yoshida	JAMSTEC
Onboard Researchers:	Tetsuro Ikuta	JAMSTEC
	Tomoko Takahashi	JAMSTEC
	Shiye Zhao	JAMSTEC
	Mayu Ogawa	JAMSTEC
	Sangekar Mehul	JAMSTEC
	Ayu Yuasa	JAMSTEC
	Wataru Uno	JAMSTEC
	Riki Sato	JAMSTEC
	Akira Eto	Tokyo University of Marine Science and Technology
	Battulga Batdulam	Tohoku University
	Munkhbat Dolgormaa	Tokyo Metropolitan University
	Tomoko Koito	University of Tokyo
	Kiminori Shitashima	Tokyo University of Marine Science and Technology
	Tatsuya Tokutake	Kitasato University
	Niina Tani	Kitasato University
	Kentaro Ishida	Waseda University

Technical supporting stuffs

Wataru Tokunaga	Nippon Marine Enterprises, Ltd.
Natsune Iho	Nippon Marine Enterprises, Ltd.
Riho Fujioka	Marine Works Japan Ltd.
Tun Htet Aung	Marine Works Japan Ltd.
Mariko Sano	Marine Works Japan Ltd.
Tatsuya Sugiyama	Marine Works Japan Ltd.

3.2 Operation team of the KM-ROV

Operation Manager	Shinnosuke Kumagai
1st ROV Operator	Tetsuya Ishitsuka
2nd ROV Operator	Atsushi Koguma
2nd ROV Operator	Kai Takeda

2nd ROV Operator	Gakuto Nakatsuka
3rd ROV Operator	Rinto Okabayashi

3.3 Captain and crew of the R/V KAIMEI

Captain	Rikita Yoshida
Chief Officer	Takeshi Muramatsu
2nd Officer	Aoi Tsurumaki
Jr.2nd Officer	Haruka Iwashita
3rd Officer	Toshihiko Miyamae
Jr.3rd Officer	Yuya Ikeda
Chief Engineer	Wataru Kurose
1st Engineer	Takahiro Mori
2nd Engineer	Yusuke Tomiyama
3rd Engineer	So Ikegami
Chief Electronic Operator	Yoichi Inoue
2nd Electronic Operator	Ryosuke Matsui
3rd Electronic Operator	Ikumi Ebitani
Boat Swain	Yosuke Kuwahara
Able Seaman	Takuya Miyashita
Able Seaman	Akira Kurihara
Able Seaman	Takumi Miura
Able Seaman	Ryo Nakanishi
Sailor	Shotaro Nakayama
Sailor	Yuta Kiyota
Sailor	Natsuki Omori
No.1 Oiler	Masayuki Fujiwara
Oiler	Makoto Kozaki
Assistant Oiler	Yutaro Ono
Assistant Oiler	Koitaro Saramoto
Assistant Oiler	Kiyoyuki Kubo
Assistant Oiler	Seiya Noguchi
Chief Steward	Katsuyuki Omiya
Steward	Yuko Seki
Steward	Kenichi Okumura
Steward	Takehiro Nojiri
Steward	Kousei Ichinohe

4 Results

4.1 Dive survey results of KM-ROV

4.1.1 Dive list

Table 4-1-1. KM-ROV Dive list of KM25-07

Dive No.	Site	Date	Landing time	Latitude	Longitude	Depth (m)	Purpose
			Leaving time				
326	HAT	2025/08/06	13:48	35°00.9365'	139°13.3988'	917	■ Installation of seaweed box. ■ Sediment and animal sampling. ■ Measurement of suspended particles. ■ Seabed mapping.
			15:53	35°00.9667'	139°13.3208'	851	
327	HAT	2025/08/07	08:45	34°59.2589'	139°13.3903'	1085	■ Sampling of animals and sediments ■ Biological distribution mapping ■ Measurement of suspended particles.
			16:09	34°59.5017'	139°13.4928'	1191	
328	HAG	2025/08/09	08:38	32°25.9362'	139°53.9153'	807	■ Recovery of ADCP and hydrophone. ■ Rock sampling ■ Seafloor observations ■ Measurement of suspended particles.
			09:28	32°25.8597'	139°53.9035'	809	
329	HAG	2025/08/12	08:47	32°26.1883'	139°54.6746'	773	■ Retrieval of sediment traps ■ Sampling of rocks ■ Retrieval of camera ■ Measurement of suspended particles.
			09:13	32°26.1989'	139°54.7111'	762	
330	HAG	2025/08/13	08:36	32°26.3150'	139°53.9088'	773	■ Chemical Sensor System deployment ■ Chimney and associated fauna sampling ■ Plume mapping ■ Lander inspection ■ Core and rock sampling ■ Measurement of suspended particles.
			14:46	32°25.7658'	139°53.8447'	808	
331	MYJ	2025/08/14	08:50	32°06.3017'	139°52.1520'	1305	■ Sampling of animals and chimneys. ■ Sampling of sediments. ■ Biological distribution mapping. ■ Measurement of suspended particles.
			14:03	32°06.3118'	139°52.0860'	1337	
332	HAG	2025/08/15	11:41	32°26.3337'	139°53.8770'	765	■ Recovery of Chemical Sensor System. ■ Seafloor observations. ■ Biological sampling. ■ Measurement of suspended particles.
			12:16	32°26.3724'	139°53.8414'	754	
333	HAT	2025/08/17	07:37	35°00.9364'	139°13.4123'	918	■ Check of seaweed box installation. ■ Sediment sampling. ■ Animal sampling. ■ Measurement of suspended particles. ■ Seabed mapping.
			10:28	35°00.9574'	139°13.3449'	849	

4.1.2 Preliminary results

KM-ROV #326

Date: August 6, 2025

Site: Off Hatusima Island, Sagami Bay, Depth: 850-917 m

Landing (Lat., Lon., Time, Depth): 35°00.9365'N 139°13.3988'E, 13:48, 917 m

Leaving (Lat., Lon., Time, Depth): 35°00.9667'N 139°13.3208'E, 15:53, 851 m

Observer: Yoshida, Takao

Theme: Prediction of marine biodiversity fluctuations and understanding the dynamics of pollutants

Purpose of dive:

1. Installation of seaweed box (KMB-① and KMB-②).
2. Sediment sampling.
3. Animal sampling.
4. Measurement of suspended particles by RamaCam.
5. Seabed mapping by stereo camera.

Dive Summary

We approached to the bottom at a depth of 917m north of the Hatsusima station in Off Hatsushima Island, Sagami Bay. This location is *Bathymodiolus* mussel colony site. After the landing, we sampled *Bathymodiolus* mussels by slurp gun and sample box. After the sampling, we move to the *Calyptogena* clam colony at a depth of 850m and were conducted for benthos mapping. Around the *Calyptogena* clam colony, we sampled octopus by slurp gun and sediments by H-type core and also installed two seaweed boxes.



Mussels sampling



Octopus sampling



Installation of the seaweed box



Sediment sampling

Payload Equipment:

1. Sample box(Front)
2. *in situ* fixation box (Front)
3. Scoop sampler (Front)
4. H-type puch core X4 (Front)
5. Seaweed box X2 (Front)
6. Stereo camera (Front)
7. Shadowgraph camera system (Front)
8. RamaCam (Rear)
9. Slurp gun (single canister (Rear)



Front payload

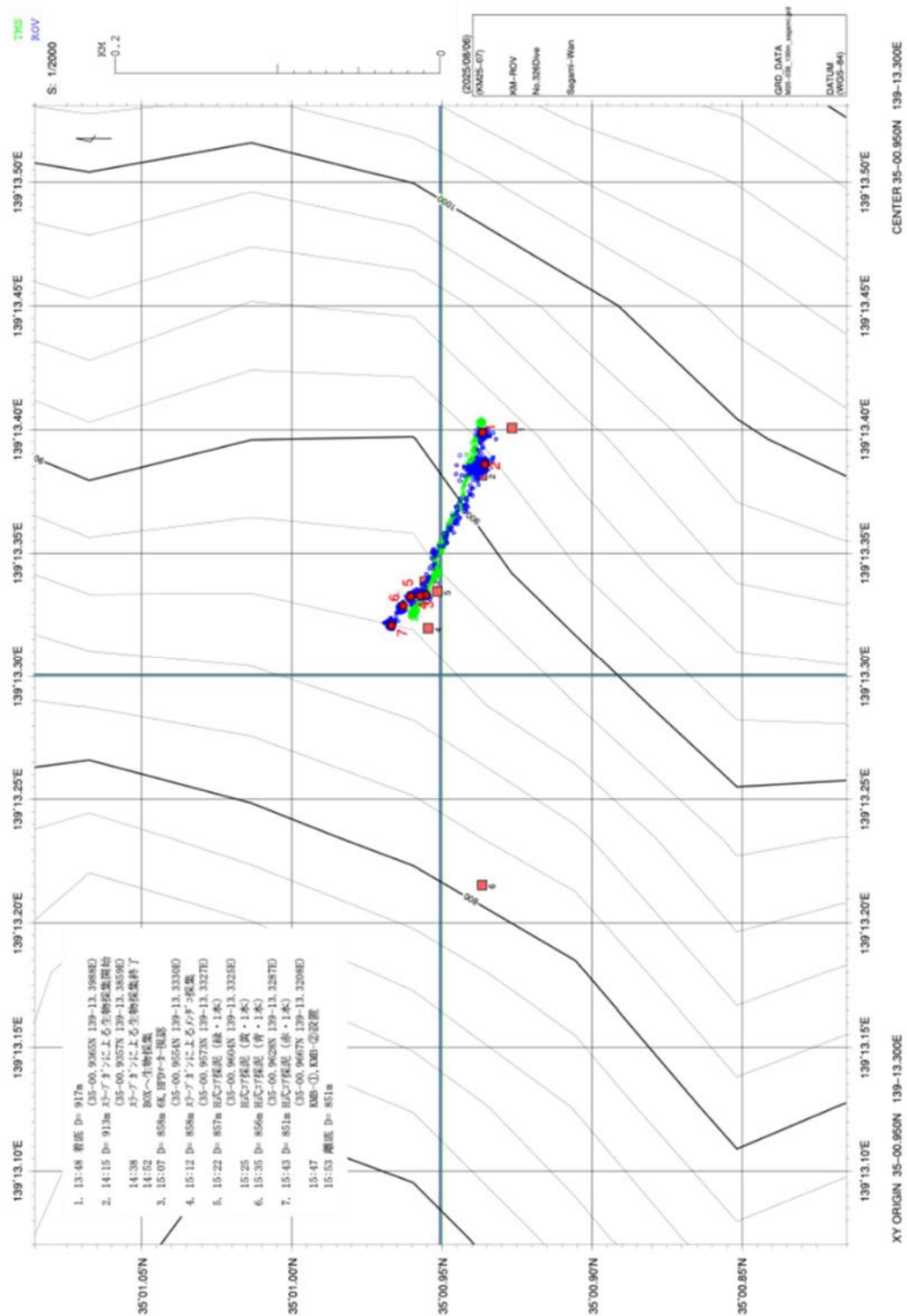


Rear Payload

Sampling Points and Events:

Time	Position	Depth (m)	Events
13:48	35-00.9365N 139-13.3988E	917	Landing
14:15	32-00.9357N 139-13.3859E	913	Mussels sampling
15:12	32-00.9573N 139-13.3327E	858	Octopus sampling
15:22	32-00.9604N 139-13.3325E	857	Sediment sampling by H-type core green
15:25	32-00.9604N 139-13.3325E	857	Sediment sampling by H-type core yellow
15:35	32-00.9628N 139-13.3287E	856	Sediment sampling by H-type core blue
15:43	32-00.9667N 139-13.3208E	851	Sediment sampling by H-type core red
15:47	32-00.9667N 139-13.3208E	851	Installation of KMB-① and KMB-②
15:53	32-00.9667N 139-13.3208E	851	Leaving

Dive track KM-ROV#326



KM-ROV #327

Date: August 7, 2025

Site: Off Hatsushima, Sagami Bay, Depth: 1065–1196 m

Landing (Lat., Lon., Time, Depth): 34°59.2589'N 139°13.3903'E, 08:45, 1085 m

Leaving (Lat., Lon., Time, Depth): 34°59.5017'N 139°13.4928'E, 16:09, 1191 m

Observer: IKUTA, Testuro

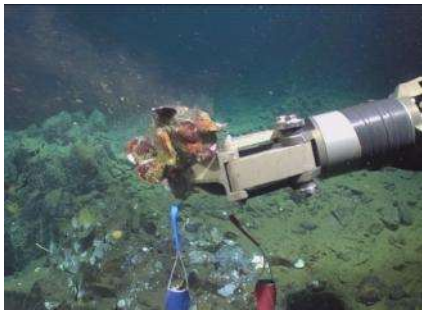
Theme: Prediction of marine biodiversity fluctuations and understanding the dynamics of pollutants

Purpose of dive:

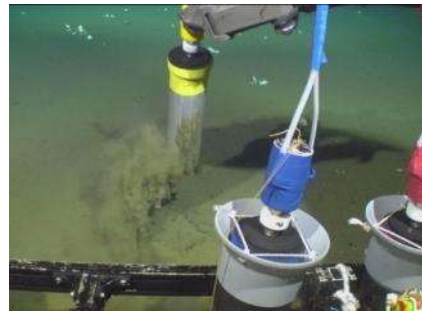
1. Sampling of animals
2. Sampling of sediments
3. Biological distribution mapping
4. Measurement of suspended particles

Dive Summary

Bathymodiolus mussels were collected using a suction sampler and a manipulator. Biological distribution mapping around mussel colonies was conducted. During this process, a rope was spotted on the seabed, and mapping was performed with caution. A marker was placed in one of the mussel colonies. We moved to the area around the *Phreagena* clam colony in the northeast and collected the sediment cores. Finally, we conducted mapping observations of the clam colonies and left the bottom. During the dive, particle measurements were conducted intermittently using RamaCam.



Mussel sampling



Sediment core sampling



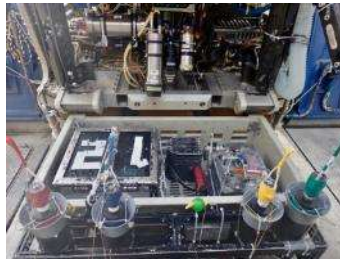
Clam colony

Payload Equipment:

1. Sample Box ×2 (Front)
2. Marker ×1 (Front)
3. Kumade sampler ×1 (Front)
4. H-type corer ×4 (Front)
5. Stereo camera (Front)
6. Shadowgraph camera (Front)
7. RamaCam (Rear)
8. Single canister for suction sampler (Rear)



Front payload

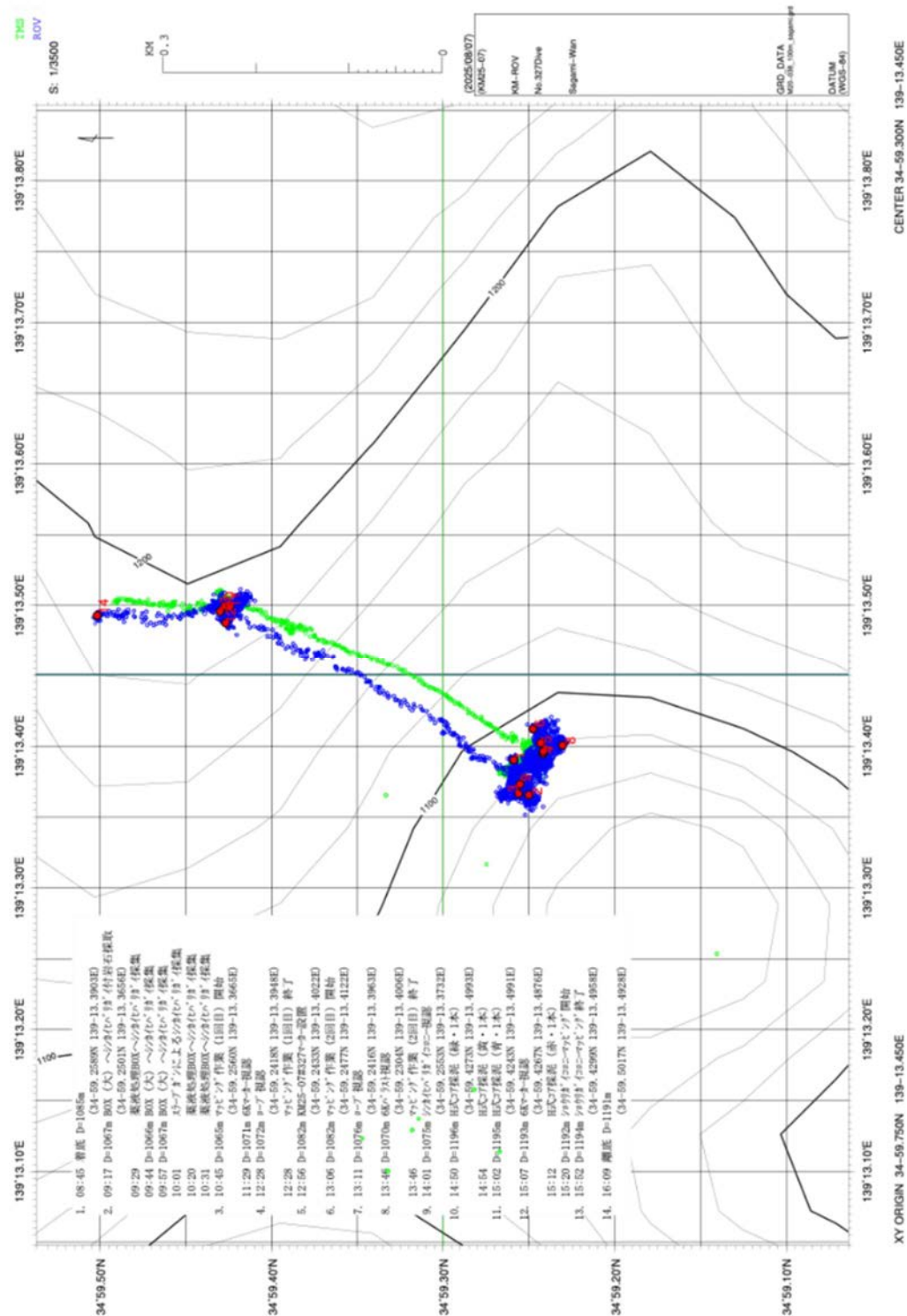


Rear payload

Sampling Points and Events:

Time	Position	Depth (m)	Events
08:45	34-59.2589N 139-13.3903E	1085	Landing
09:17	34-59.2501N 139-13.3656E	1067	Sampling of mussels
10:45	34-59.2560N 139-13.3665E	1065	Start of biological mapping
12:56	34-59.2433N 139-13.4022E	1082	Marker placement
13:06	34-59.2477N 139-13.4122E	1082	Start of biological mapping
15:07	34-59.4267N 139-13.4876E	1193	Sediment corer samplings were finished
15:52	34-59.4299N 139-13.4958E	1194	End of biological mapping
16:09	34-59.5017N 139-13.4928E	1191	Leaving

Dive track KM-ROV#327



KM-ROV #328

Date: August 9, 2025

Site: LS site, Higashi-Aogashima Knoll, Depth: 809–810 m

Landing (Lat., Lon., Time, Depth): 32°25.9362'N 139°53.9153'E, 08:38,807 m

Leaving (Lat., Lon., Time, Depth): 32°25.8597'N 139°53.9035'E, 09:28,809 m

Observer: FURUSHIMA, Yasuo

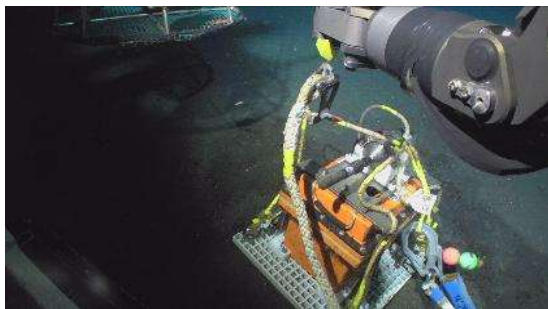
Theme: Prediction of marine biodiversity fluctuations and understanding the dynamics of pollutants

Purpose of dive:

1. Recovery of ADCP
2. Recovery of hydrophone
3. Rock sampling
4. Seafloor observations
5. Observation and imaging of suspended particles in the water column

Dive Summary

At Stn. HG-LS (lander deployment site) on the Higashi-Aogashima Knoll, the ADCP and hydrophone that had been deployed during the previous cruise (KM24-03) were recovered. In addition, rock sampling and seafloor observations using a stereo camera, as well as investigations of suspended particle distributions with the shadowgraph camera and the RamaCam System, were conducted.



Recovery of hydrophone



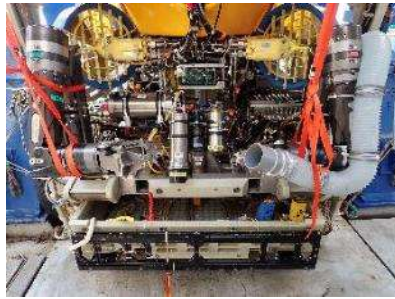
Recovery of ADCP

Payload Equipment:

1. ADCP recovery ropes (2 m and 4 m) (Front basket)
2. Stereo camera (Front)
3. Shadowgraph camera (Front)
4. RamaCam (Rear)
5. Slurp gun (single canister) (Rear)



Front payload

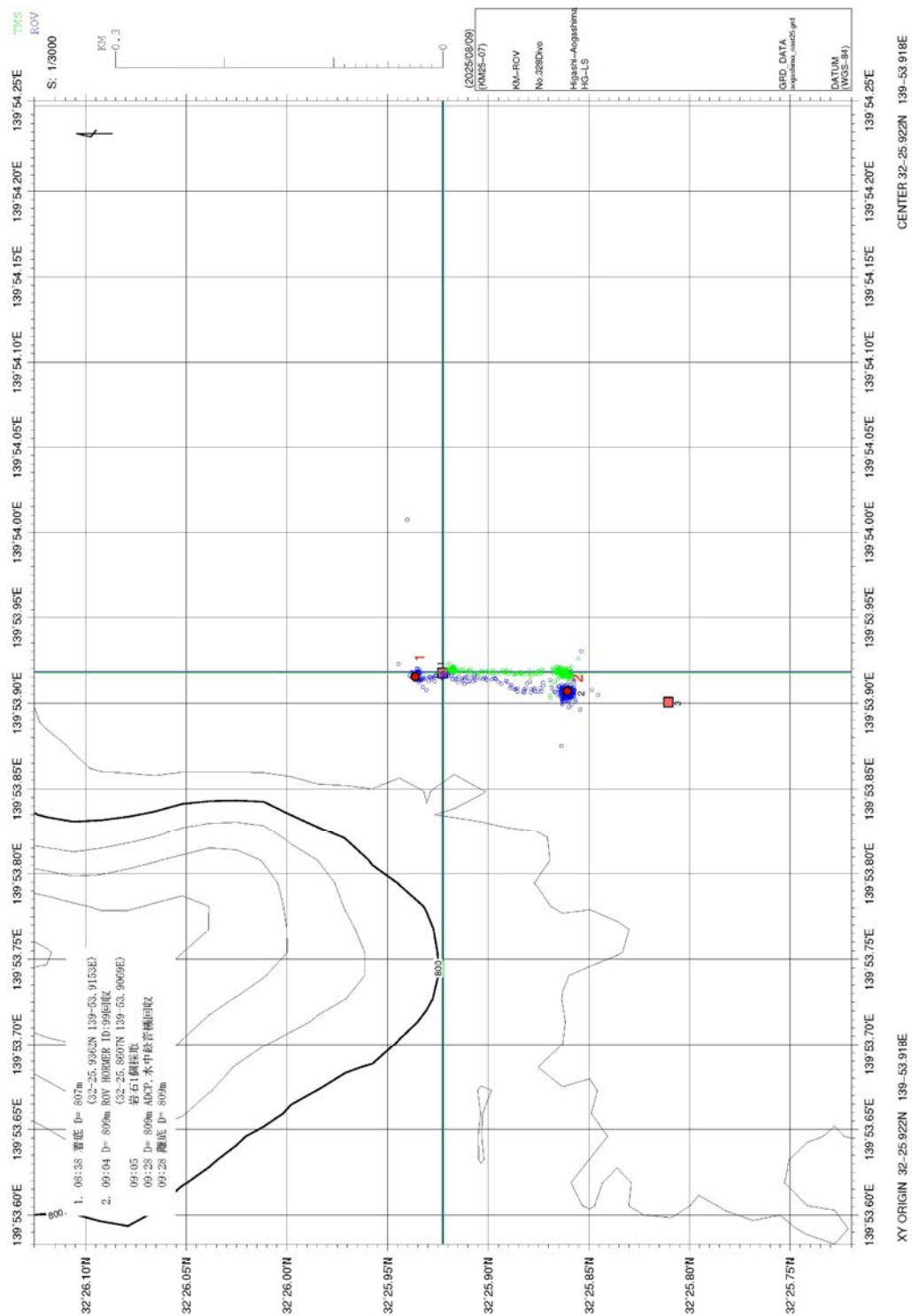


Rear payload

Sampling Points and Events:

Time	Position	Depth (m)	Events
08:38	32-25.9352N 139-53.9166E	810	Landing
09:05	32-25.8574N 139-53.9044E	809	Rock sampling
09:11	32-25.8602N 139-53.9088E	809	Recovery of hydrophone
09:25	32-25.8645N 139-53.9051E	810	Recovery of ADCP
09:28	32-25.8597N 139-53.9035E	809	Leaving

Dive track KM-ROV#328



KM-ROV #329

Date: August 12, 2025

Site: SE site, Higashi-Aogashima Knoll, Depth: 762–773 m

Landing (Lat., Lon., Time, Depth): 32°26.1883'N 139°54.6746'E, 08:47,773 m

Leaving (Lat., Lon., Time, Depth): 32°26.1989'N 139°54.7111'E, 09:13,762 m

Observer: ETO, Akira

Theme: Prediction of marine biodiversity fluctuations and understanding the dynamics of pollutants

Purpose of dive:

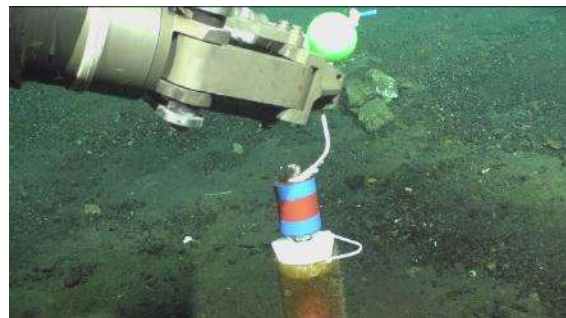
1. Retrieval of sediment traps
2. Sampling of rocks
3. Retrieval of camera
4. Measurement of suspended particles

Dive Summary

At the dive site, two sediment traps and a simple seabed monitoring camera installed during KM24-03 were retrieved. A cap, loaded onto the ROV for this dive, was fitted and sealed on one of the sediment traps. After recovering the equipment, part of the surrounding rocks was sampled, and the ROV left the seafloor. During the recovery of the ROV, water ingress into the camera housing was detected, posing a risk of battery ignition on board. Therefore, the attached plate and sponge were retrieved, and the camera body was abandoned at sea. During the dive, particle measurements were conducted intermittently using RamaCam.



Sediment traps and camera



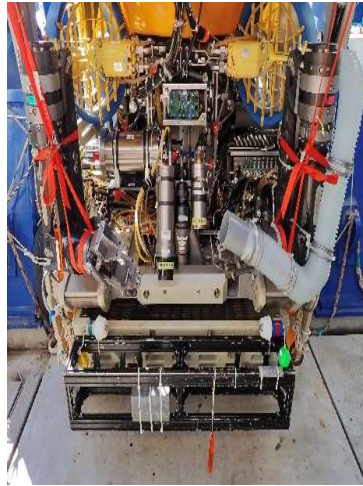
Sealing the sediment trap

Payload Equipment:

1. Stereo camera (Front)
2. Shadowgraph camera (Front)
3. RamaCam (Rear)
4. Sediment trap cap (Front)



Front payload

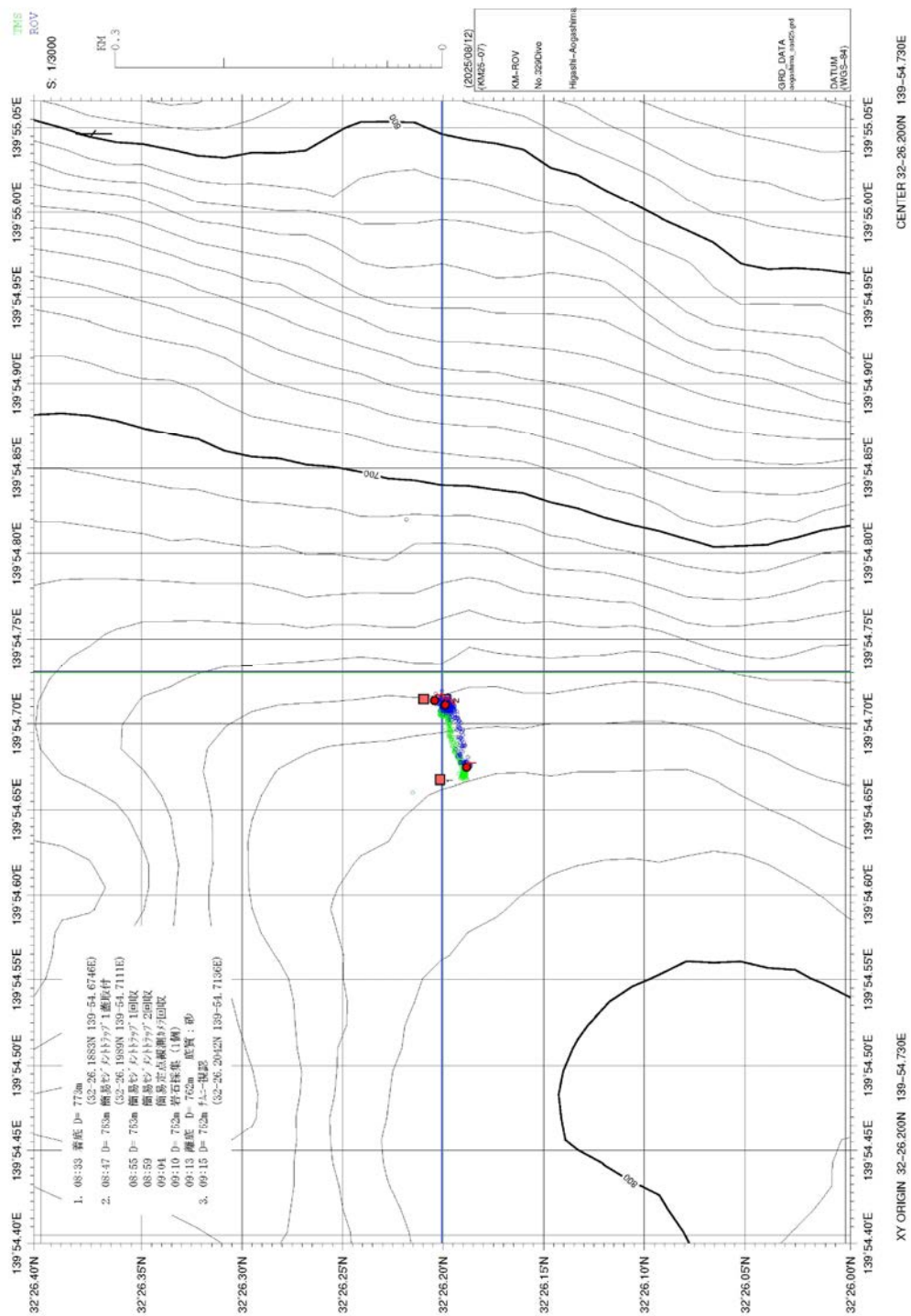


Rear payload

Sampling Points and Events:

Time	Position	Depth (m)	Events
08:33	32-26.1883N 139-54.6746E	773	Landing
08:47	32-26.1989N 139-54.7111E	763	Sealing the sediment trap 1
08:55	32-26.1989N 139-54.7111E	763	Retrieving the sediment trap 1
08:59	32-26.1989N 139-54.7111E	763	Retrieving the sediment trap 2
09:04	32-26.1989N 139-54.7111E	763	Retrieving the camera
09:10	32-26.1989N 139-54.7111E	762	Sampling the rock
09:13	32-26.1989N 139-54.7111E	762	Leaving

Dive track KM-ROV#329



KM-ROV #330

Date: August 13, 2025

Site: CC site and LS site, Higashi-Aogashima Knoll, Depth: 773–808 m

Landing (Lat., Lon., Time, Depth): 32°26.3150'N 139°53.9088'E, 08:36, 773 m

Leaving (Lat., Lon., Time, Depth): 32°25.7658'N 139°53.8447'E, 14:46, 808 m

Observer: FURUSHIMA, Yasuo

Theme: Prediction of marine biodiversity fluctuations and understanding the dynamics of pollutants

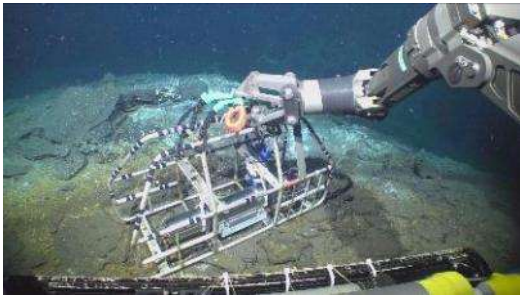
Purpose of dive:

1. Chemical Sensor System deployment
2. Chimney and associated fauna sampling
3. Biological sampling
4. Chimney observations
5. Plume mapping
6. Lander inspection
7. Core sampling
8. Rock sampling
9. Observation and imaging of suspended particles in the water column

Dive Summary

At Stn.HG-CC (Central Cone site) on the Higashi-Aogashima Knoll, the Chemical Sensor System was deployed near a hydrothermal vent area. Biological sampling of crabs and mussels, collection of rocks and rock-associated fauna, and observations of a chimney vent orifice were then conducted near the approximately 40 m-high “Big Chimney.” Observations of suspended particles with the RamaCam System and the shadowgraph camera, as well as plume mapping through multiple transect surveys, were also carried out above the chimney.

Subsequently, the ROV transited to Stn.HG-LC (lander site), during which plankton were observed. Upon arrival, the lander installation was inspected, and two core samples were collected using an H-type corer, after which the dive was completed.



Chemical Sensor System deployment



Rock sampling



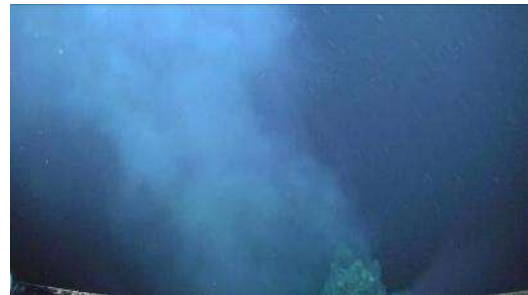
Biological sampling



Chimney observations



Chimney observations



Plume mapping



Lander inspection



Core sampling

Payload Equipment:

6. Stereo camera (front)
7. Shadowgraph camera (front)
8. Chemical Sensor System
9. Sample Box
10. H-type Corer
11. RamaCam (rear)
12. Slurp gun (single canister, rear)



Front payload

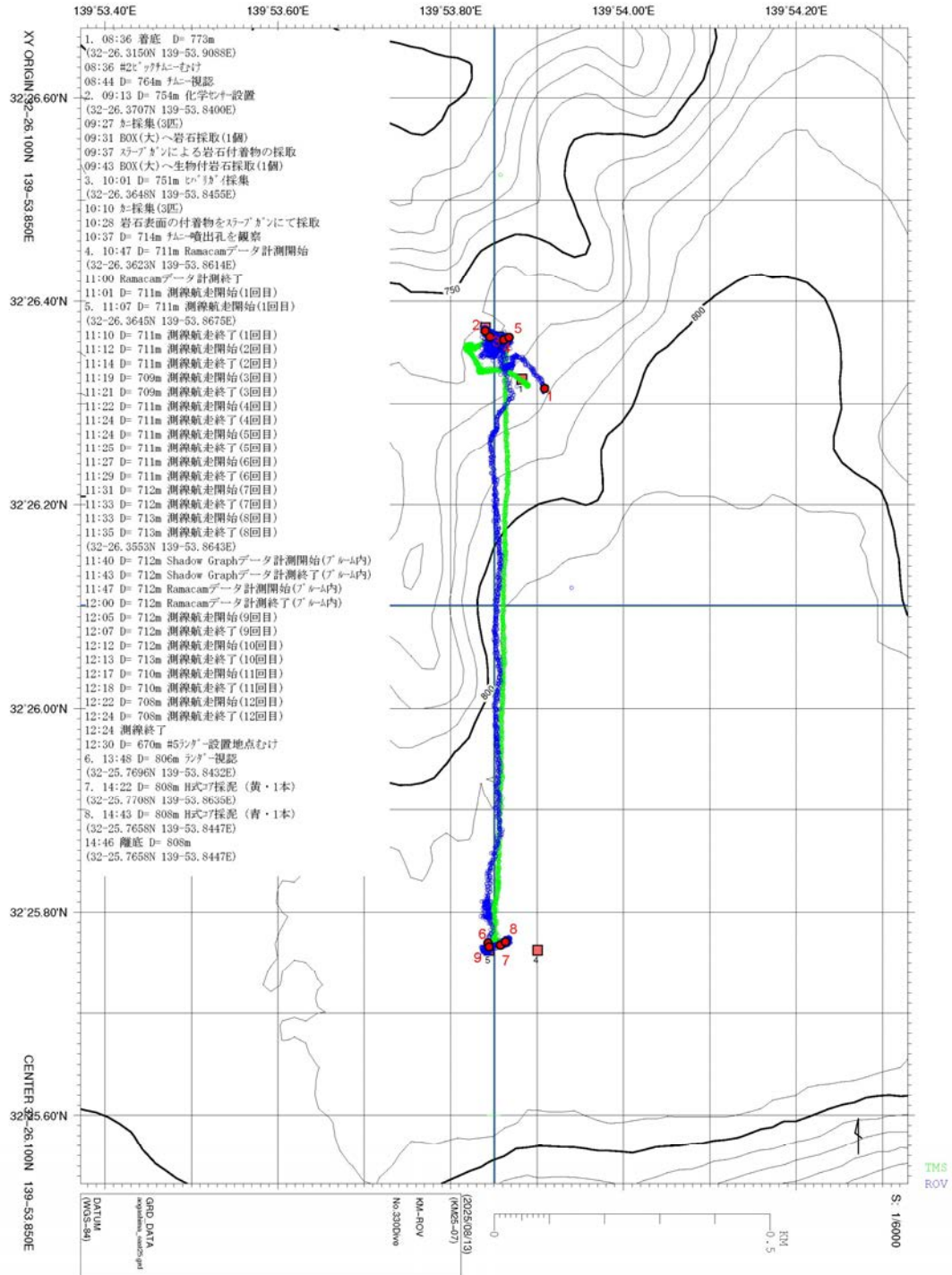


Rear payload

Sampling Points and Events:

Time	Position	Depth (m)	Events
08:36	32-26.3150N 139-53.9088E	773	Landing
09:13	32-26.3707N 139-53.8400E	754	Chemical Sensor System deployment
10:01	32-26.3648N 139-53.8455E	751	Mussel (<i>Bathymodiolus</i>) sampling
10:47	32-26.3623N 139-53.8614E	711	RamaCam observation (start–end 11:00)
11:01	32-26.3645N 139-53.8675E	711	Transect surveys (1st–8th)
11:40	32-26.3553N 139-53.8643E	712	Shadowgraph observation (in plume)
13:48	32-25.7696N 139-53.8432E	806	Lander inspection
14:22	32-25.7708N 139-53.8635E	808	H-type corer sampling (1 core, yellow)
14:43	32-25.7658N 139-53.8447E	808	H-type corer sampling (1 core, blue)
14:46	32-25.7658N 139-53.8447E	808	Leaving

Dive track KM-ROV#330



KM-ROV #331

Date: August 14, 2025

Site: Myojin Knoll, Depth: 1219–1345 m

Landing (Lat., Lon., Time, Depth): 32°06.3017'N 139°52.1520'E, 08:50, 1305 m

Leaving (Lat., Lon., Time, Depth): 32°06.3118'N 139°52.0860'E, 14:03, 1337 m

Observer: Yuasa, Ayu

Theme: Prediction of marine biodiversity fluctuations and understanding the dynamics of pollutants

Purpose of dive:

1. Sampling of animals
2. Sampling of chimneys
3. Sampling of sediments
3. Biological distribution mapping
4. Measurement of suspended particles

Dive Summary

Bathymodiolus mussels were collected using a suction sampler and a manipulator. We collected chimneys using a manipulator. Finally, we collected sediments using push core sampler. During the dive, particle measurements were conducted intermittently using RamaCam.



Mussel sampling



Chimney sampling



Sediment core sampling

Payload Equipment:

1. Sample Box ×2 (Front)
2. H-type corer ×4 (Front)
3. Stereo camera (Front)
- 4 Shadowgraph camera (Front)
5. RamaCam (Rear)
6. Single canister for suction sampler (Rear)



Front payload

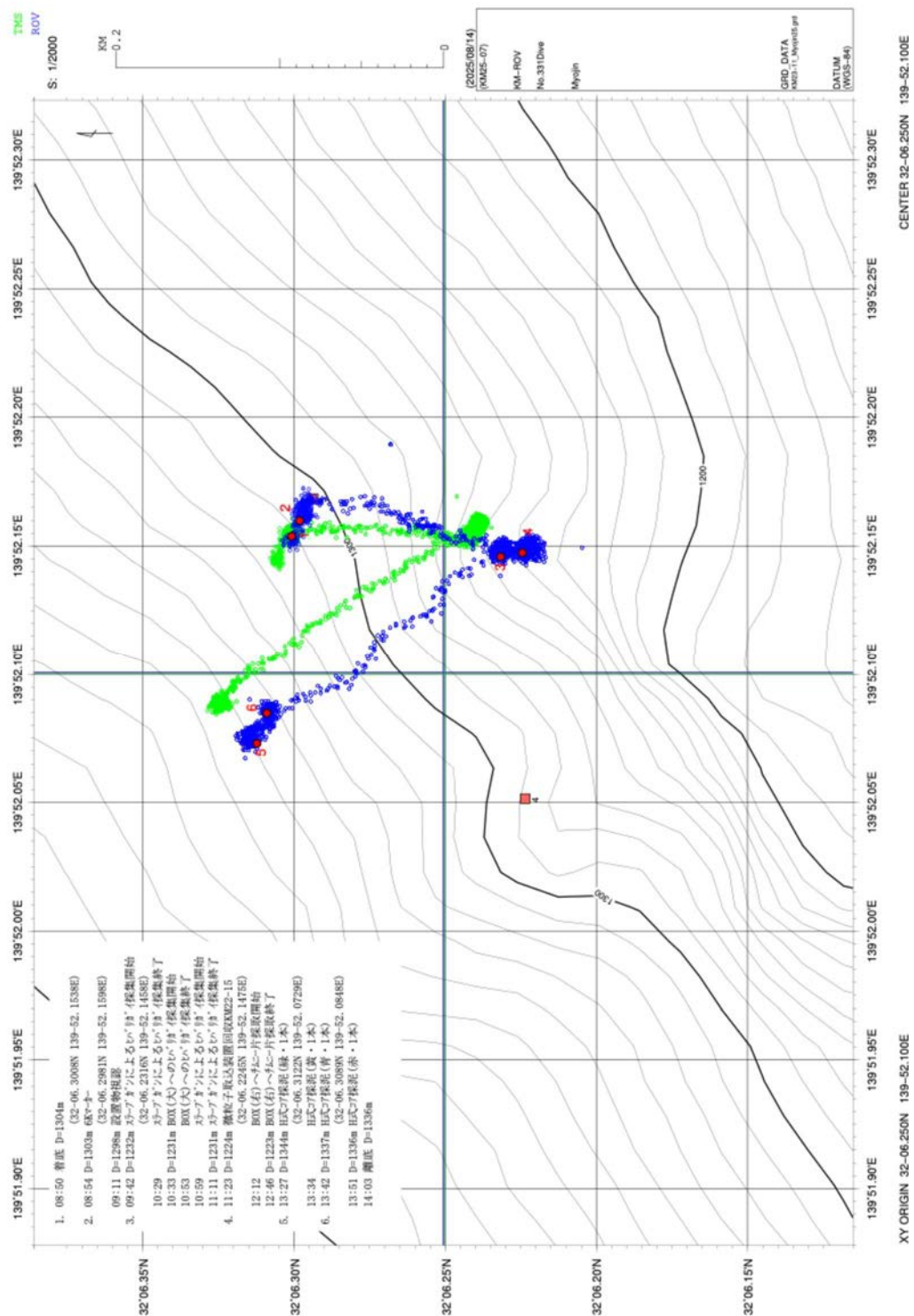


Rear payload

Sampling Points and Events:

Time	Position	Depth (m)	Events
08:50	32-06.3017N 139-52.1520E	1305	Landing
09:42	32-06.2337N 139-52.1488E	1233	Sampling of mussels
12:12	32-06.2234N 139-52.1486E	1225	Sampling of chimneys
13:26	32-06.3186N 139-52.0769E	1345	Sampling of sediments
14:03	32-06.3118N 139-52.0860E	1336	Leaving

Dive track KM-ROV#331



KM-ROV #332

Date: August 15, 2025

Site: CC site, Higashi-Aogashima Knoll, Depth: 754–765 m

Landing (Lat., Lon., Time, Depth): 32°26.3337'N 139°53.8770'E, 11:41,765 m

Leaving (Lat., Lon., Time, Depth): 32°26.3724'N 139°53.8414'E, 12:16,754 m

Observer: FURUSHIMA, Yasuo

Theme: Prediction of marine biodiversity fluctuations and understanding the dynamics of pollutants

Purpose of dive:

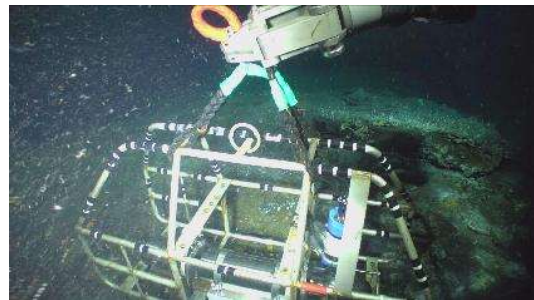
1. Recovery of Chemical Sensor System
2. Seafloor observations
3. Biological sampling
4. Observation and imaging of suspended particles in the water column

Dive Summary

At Stn. HG-CC (Central Cone site) on the Higashi-Aogashima Knoll, the Chemical Sensor System that had been deployed on the seafloor during Dive #330 was recovered. Biological sampling, seafloor observations using a stereo camera, and observations of suspended particle distributions with the shadowgraph camera and the RamaCam System were also conducted.



Chemical Sensor System



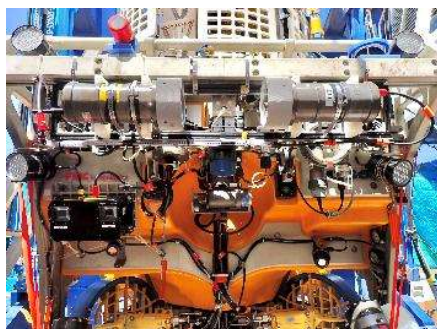
Recovery of Chemical Sensor System

Payload Equipment:

1. Stereo camera (Front)
2. Shadowgraph camera (Front)
3. RamaCam (Rear)
4. Slurp gun (single canister (Rear)



Front payload

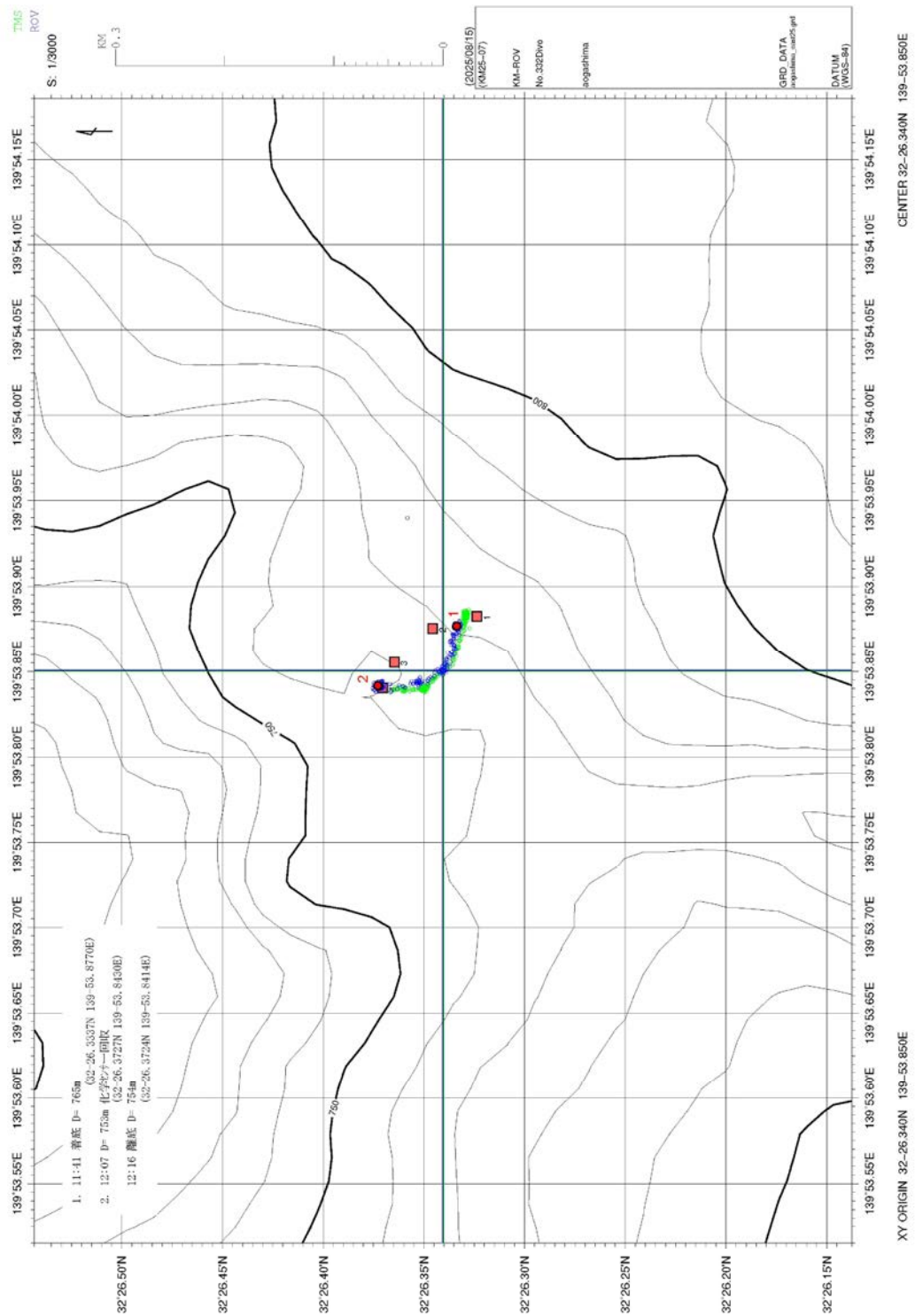


Rear payload

Sampling Points and Events:

Time	Position	Depth (m)	Events
11:41	32-26.3337N 139-53.8770E	765	Landing
12:07	32-26.3727N 139-53.8430E	753	Recovery of Chemical Sensor System
12:16	32-26.3724N 139-53.8414E	754	Leaving

Dive track KM-ROV#332



KM-ROV #333

Date: August 17, 2025

Site: Off Hatusima Island, Sagami Bay, Depth: 849-918m

Landing (Lat., Lon., Time, Depth): 35°00.9364'N 139°13.4123'E, 07:37, 918 m

Leaving (Lat., Lon., Time, Depth): 35°00.9574'N 139°13.3449'E, 10:28, 849 m

Observer: Yoshida, Takao

Theme: Prediction of marine biodiversity fluctuations and understanding the dynamics of pollutants

Purpose of dive:

1. Observation of installed seaweed box (KMB-① and KMB-②).
2. Sediment sampling.
3. Animal sampling.
4. Measurement of suspended particles by RamaCam.
5. Seabed mapping by stereo camera.

Dive Summary

We landed to the bottom at a depth of 917m in Off Hatsushima Island, Sagami Bay. After the landing, we collected *Bathymodiolus* mussels, fish, shrimp, and tubeworms by slurp gun and sample box. After the sampling, we move to the installation point of seaweed boxes at a depth 851m to observe these boxes. While moving to the installation point, we conducted for benthic mapping and sampled octopus with slurp gun and sediments with H-type cores. Finally, we observed the installed seaweed boxes.



Tubeworms sampling



Octopus sampling

Payload Equipment:

1. Sample box(Front)
2. Scoop sampler (Front)
3. H-type puch core X4 (Front)
4. Stereo camera (Front)
5. Shadowgraph camera system (Front)
6. RamaCam (Rear)
7. Slurp gun (single canister) (Rear)



Front payload

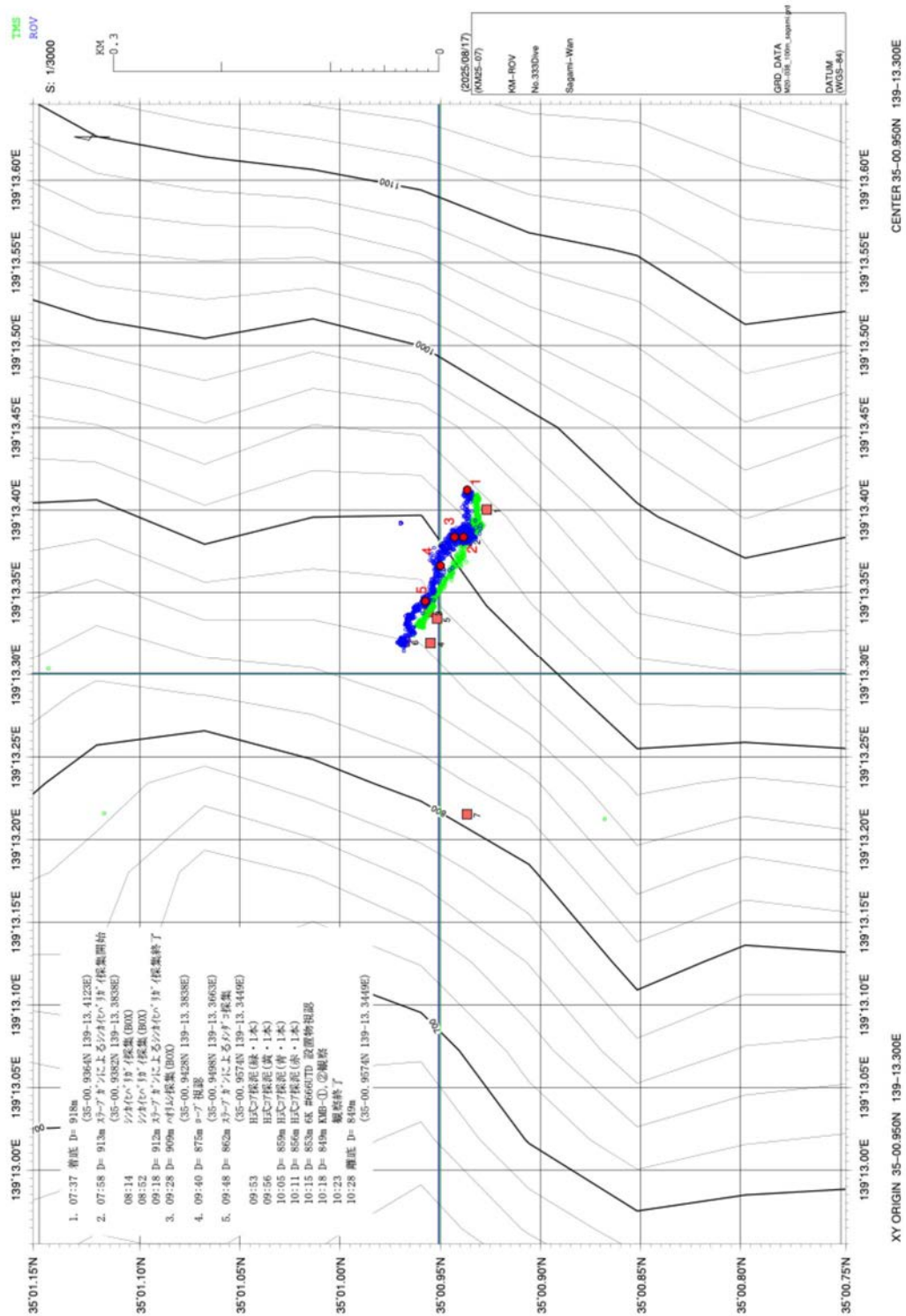


Rear Payload

Sampling Points and Events:

Time	Position	Depth (m)	Events
07:37	35-00.9364N 139-13.4123E	918	Landing
07:58	32-00.9382N 139-13.3838E	913	Mussels, fishes, and shrimp sampling
09:28	32-00.9428N 139-13.3838E	909	Tubeworms sampling
09:48	32-00.9574N 139-13.3449E	862	Octopus sampling
09:53	32-00.9574N 139-13.3439E	864	Sediment sampling by H-type core green
09:56	32-00.9569N 139-13.3435E	865	Sediment sampling by H-type core yellow
10:05	32-00.9612N 139-13.3406E	862	Sediment sampling by H-type core blue
10:11	32-00.9648N 139-13.3352E	858	Sediment sampling by H-type core red
10:18	32-00.9574N 139-13.3449E	849	Observation of KMB-① and KMB-②
10:28	32-00.9574N 139-13.3449E	849	Leaving

Dive track KM-ROV#333



4.2 Marine pollution baseline study and environmental impact assessment

4.2.1 CTD water sampling (Marine Works Japan Ltd.)

(1) Personnel

Yasuo Furushima	(JAMSTEC)	*Principal Researcher
Riho Fujioka	(MWJ)	*Operation Leader
Tun Htet Aung	(MWJ)	
Mariko Sano	(MWJ)	
Tatsuya Sugiyama	(MWJ)	

(2) Objective

The CTDO₂/water sampling measurements were conducted to obtain vertical profiles of seawater properties by sensors and water sampling.

(3) Instruments and method

Instruments used in this cruise are as follows:

Winch and cable

39.2 kN traction with AHC(Active Heave Compensation) winch system (MacArtney A/S, Esbjerg, Denmark) for steel armored cable($\phi = 10.6$ mm) (Rochester Wire & Cable, LLC, Virginia, USA)

Compact underwater slip ring swivel (Hanayuu Co., Ltd., Shizuoka, Japan)

The CTD package was deployed from starboard by using folding gallows.

Frame

470 kg stainless steel frame for 36-position 12-L water sample bottles

Aluminum rectangular fin (54 × 90 cm) to resist frame's rotation

Water sampler and sampling bottle

36-position carousel water sampler, SBE 32 (Sea-Bird Scientific, Washington, USA)

Serial no. 3227443-0391

12-L sample bottle, model OTE 110 (Ocean Test Equipment, Inc., Florida, USA)

(No TEFLON coating, with Nitrile O-rings)

Deck unit

SBE11plus (Sea-Bird Scientific, Washington, USA)

Serial no. 11-1033

Underwater unit

Pressure sensor, SBE 9plus (Sea-Bird Scientific, Washington, USA)

Serial no. 09P84583-1235 (134402) (calibration date: December 03, 2024)

Temperature sensor, SBE 3 (Sea-Bird Scientific, Washington, USA)

Primary, Serial no. 03P2730 (calibration date: January 18, 2024)

Secondary, Serial no. 03P5329 (calibration date: December 13, 2024) (used

in cast LS1M001)

Secondary, Serial no. 031464 (calibration date: May 28, 2025) (used in cast from LS1M002)

Conductivity sensor, SBE 4C (Sea-Bird Scientific, Washington, USA)

Primary, Serial no. 041203 (calibration date: February 16, 2024)

Secondary, Serial no. 042435 (calibration date: November 27, 2024)

Dissolved oxygen sensor, Primary, RINKO III (JFE Advantech Co., Ltd., Japan)

Serial no. 0221 (calibration date: May 22, 2024)

Dissolved oxygen sensor, Secondary, SBE 43 (Sea-Bird Scientific, Washington, USA)

Serial no. 433161 (calibration date: October 04, 2024)

Transmissometer, C-Star (Sea-Bird Scientific, Washington, USA)

Serial no. 1726DR (calibration date: December 23, 2021)

Chlorophyll fluorometer (Seapoint Sensors Inc., New Hampshire, USA)

Serial no. 4165 (Gain setting: 30X (0-5 ug/L) for casts LS1M001~ CC1M001)

(Gain setting: 10X (0-15 ug/L) for casts SRGM001~ HATM002)

Turbidity Meter (Seapoint Sensors Inc., New Hampshire, USA)

Serial no. 14954 (Gain: 100 X, (0-25 FTU)

PAR sensor, PAR-Log ICSW (Sea-Bird Scientific, Washington, USA)

Serial no. 1025 (calibration date: July 6, 2015)

Altimeter, PSA-916T (Teledyne Benthos, Inc., Massachusetts, USA)

Serial no. 52396 (used in cast LS1M001, CC1M001)

Altimeter, Impact Subsea (Teledyne Benthos, Inc., Aberdeen, UK)

Serial no. 1336.0017 (used in cast LS1M002, SRGM001, HATM001)

Pump, SBE 5T (Sea-Bird Scientific, Washington, USA)

Primary, Serial no. 058088

Secondary, Serial no. 058415

Bottom contact switch (Sea-Bird Scientific, Washington, USA)

Other additional sensors and cameras

Upward and downward looking lowered acoustic Doppler current profilers (LADCP)

Shadow Graph Camera

Gamma-ray sensor

pH/pCO₂ sensors

RamaCam

Software

Data acquisition software, SEASAVE-Win32, version 7.26.7.121

Data processing software, SBEDataProcessing-Win32, version 7.26.7.129 and some

original modules

(4) Data Collection and processing

(4.1) Data collection

The CTD system was powered on at least 15 minutes in advance of the data acquisition to stabilize the pressure sensor. The data was acquired at least two minutes before and after the CTD cast to collect atmospheric pressure data on the ship's deck.

The CTD package was lowered into the water from the starboard side and held 10 m beneath the surface to activate the pump. After the pump was activated, the package was lifted to the surface and lowered at a rate of 1.0 m/s to 40m then the package was stopped to operate the heave compensator of the crane. The package was lowered again and at 1.0m/s and after passing the depths where vertical gradient of water properties was large, it was lowered at a rate of 1.2m/s to the bottom. CTD package at kept at depth near bottom for 30min for RamaCam. For the up cast, the package was lifted at a rate of 1.0 m/s or 0.5 m/s, except for bottle firing stops. As a rule, the bottle was fired after waiting from the stop for 60 seconds at each bottle firing stops to enhance changing the water between inside and outside of the bottle. At 40m from the surface, the package was stopped to stop the heave compensator of the crane.

(4.2) Data collection problems

There was no problem with data collection in this cruise.

(4.3) Data Processing

The following are the data processing software (SBEDataProcessing-Win32) and original software data processing module sequence and specifications used in reduction of CTD data in this cruise.

(The process in order)

DATCNV converted the raw data to engineering unit data. DATCNV also extracts bottle information where scans were marked with the bottle confirm bit during acquisition. The scan duration to be included in bottle file was set to 3.0 seconds, and the offset was set to 0.0 seconds. The hysteresis correction and tau correction for the SBE 43 data was applied for both profile and bottle information data.

TCORP (original module, version 1.1) corrected the pressure sensitivity of the temperature (SBE3) sensor for both profile and bottle information data.

BOTTLESUM created a summary of the bottle data. The data were averaged over 3.0 seconds.

ALIGNCTD converted the time-sequence of sensor outputs into the pressure sequence to ensure that all calculations were made using measurements from the same parcel of water. For a SBE 9plus CTD with the ducted temperature and conductivity sensors and a 3000-rpm pump, the typical net advance of the conductivity relative to the temperature is 0.073 seconds. So, the SBE 11plus deck unit was set to advance the primary and the secondary conductivity for 1.73 scans ($1.75/24 = 0.073$ seconds). Oxygen data are also systematically delayed with respect to depth mainly because of the long-time constant of the oxygen sensor

and of an additional delay from the transit time of water in the pumped plumbing line. This delay was compensated by 5 seconds advancing the SBE 43 oxygen sensor output (voltage) relative to the temperature data. Delay of the transmissometer data was also compensated by 2 seconds advancing sensor output (voltage) relative to the temperature data.

WILDEDIT marked extreme outliers in the data files. The first pass of WILDEDIT obtained the accurate estimate of the true standard deviation of the data. The data were read in blocks of 1000 scans. Data greater than 10 standard deviations were flagged. The second pass computed a standard deviation over the same 1000 scans excluding the flagged values. Values greater than 20 standard deviations were marked bad. This process was applied to pressure, depth, temperature, conductivity, and SBE 43 output.

CELLTM used a recursive filter to remove conductivity cell thermal mass effects from the measured conductivity. Typical values for SBE 9plus with TC duct and 3000 rpm pump which were 0.03 for thermal anomaly amplitude α and 7.0 for the time constant $1/\beta$ were used.

FILTER performed a low-pass filter on pressure and depth with a time constant of 0.15 second. In order to produce zero phase lag (no time shift) the filter runs forward first then backward.

WFILTER performed as a median filter to remove spikes in transmissometer data, fluorometer data and turbidity meter data. A median value was determined by 49 scans of the window.

SECTIONU (original module, version 1.1) selected a time span of data based on scan number in order to reduce a file size. The minimum number was set to be the starting time when the CTD package was beneath the sea-surface after activation of the pump. The maximum number was set to be the end time when the depth of the package was 1 dbar below the surface. The minimum and maximum numbers were automatically calculated in the module.

LOOPEDIT marked scans where the CTD was moving less than the minimum velocity of 0.0 m/s (traveling backwards due to ship roll).

DESPIKE (original module, version 1.0) removed spikes of the data. A median and mean absolute deviation was calculated in 1-dbar pressure bins for both down and up cast, excluding the flagged values. Values greater than 4 mean absolute deviations from the median were marked bad for each bin. This process was performed twice for temperature and conductivity and primary dissolved oxygen data.

DERIVE was used to compute dissolved oxygen (SBE43), salinity, potential temperature, and sigma-theta.

BINAVG averaged the data into 1-meter depth bins, 1-sec time bins and 3-scan scan bins. The center value of the first bin was set equal to the bin size. The bin minimum and maximum values are the center values plus and minus half the bin size. Scans with pressures greater than the minimum and less than or equal to the maximum were averaged. Scans were interpolated so that a data recorded exist every meter.

BOTTOMCUT (original module, version 0.1) deleted the deepest bin when the averaged scan number of the deepest bin was smaller than the average scan number of the bin just above.

SPLIT was used to split data into down cast and up cast.

ASCII Out was used to output data and/or header from .cnv file to ASCII file (.asc for data, .hdr for header).

(5) Data archive

These data obtained in this cruise will be submitted to the Data Management Group of JAMSTEC.

Table 4-2-1 KM25-07 CTD cast table

KM25-07 CTD cast table													
Stnnbr	Castno	Date(UTC)	Time(UTC)		BottomPosition		Depth (m)	Wire Out (m)	HT Above Bottom (m)	Max Depth	Max Pressure	CTD Filename	Remark
		(mmddyy)	Start	End	Latitude	Longitude							
LSI	001	080925	02:31	03:10	32-25.08N	139-55.76E	654.5	642.0	11.5	641.0	646.5	LSIM001	
LSI	002	081025	05:58	06:47	32-25.94N	139-53.65E	807.3	782.0	11.2	779.0	786.0	LSIM002	
CC1	001	081525	05:39	07:00	32-26.37N	139-53.85E	804.5	715.0	41.8	716.0	722.3	CC1M001	
SRG	001	081525	23:34	01:34	35-03.23N	138-43.53E	1022.7	1008.0	9.3	1004.0	1013.8	SRGM001	
HAT	001	081725	04:22	05:50	35-00.85N	139-13.38E	1006.7	973.1	10.5	968.0	977.3	HATM001	



4.2.2 Physiological impacts of microplastics on deep-sea megabenthic animals

Tetsuro Ikuta(JAMSTEC), Tomoko Koito(AORI), Ayu Yuasa(JAMSTEC)

It is becoming obvious that the abundance of microplastics is increasing in worldwide oceans, raising concerns about their impact on marine ecosystems. As microplastics occupy a similar size range as some planktons, suspended particles, and marine sediments, they are potentially bioavailable to many organisms. Animals living in the deep seas are no exception. However, the distribution of microplastics in deep-sea animals and the physiological impacts of microplastics on them have been poorly understood. We have recently reported that microplastic particles were internalized via the body surface into gill cells of deep-sea mussels by phagocytosis(Ikuta et al., 2022). Furthermore, polychlorinated biphenyls, well-known persistent chemical pollutants, have been detected in deep-sea chemosynthetic bivalves with limited or no filter feeding, including *Phreagena* clams and *Bathymodiolus* mussels, suggesting the possibility of contamination by absorbing organic particles such as pollutant-associated microplastics from the body surface(Ikuta et al., 2021; Ikuta et al., 2024). These observations highlighted the need for further detailed investigations to conserve the highly endemic and vulnerable deep-sea fauna.

During this cruise, we collected benthic animals, such as bivalves and annelids in order to investigate the mechanisms by which microplastics and other organic particles are taken up into animal bodies. In addition, we conducted several microparticle exposure experiments onboard and carried out rearing experiments to explore the maintenance conditions for experimental animals. Furthermore, after the cruise, the amount of chemical contaminants associated with plastics in these animals will be analyzed.

References

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4.2.3 Occurrence and characterization of microplastics in sea surface water and seabed sediment cores

Batdulam Battulga (WPI-AIMEC), Dolgormaa Munkhbat (TMU)

Purpose:

The main goal of this research is to investigate the occurrence, distribution, and characterization of microplastics (MPs; <5 mm) in seawater and seabed sediments, with particular focus on the Pacific Ocean.

Abstract:

Understanding the occurrence and physico-chemical characteristics of microplastics (MPs) in marine systems is essential for evaluating their distribution pathways, environmental persistence, and interactions with natural particles. During the KM25-07 cruise, floating MPs were sampled using a neuston net at nearshore (Suruga Bay) and offshore (Myojin) sites, with two replicate 20-minute tows per site. Seabed sediment cores, up to 30 cm in depth, were obtained using push cores (attached to ROV system) and a multiple corer (attached to the Lander system) at Hatsushima, Aogashima, and Myojin. The cores were sectioned at 2 cm intervals to examine the vertical distribution of MPs, and subsamples were preserved for both MP extraction and microbial DNA analysis. Floating materials, including plastics, organic debris, and planktonic particles, were collected from the neuston nets and stored at -20°C . Together, these samples provide a valuable dataset covering both surface waters and seabed environments across contrasting nearshore and offshore sites, enabling cross-comparisons of MP abundance, size distribution, types, and potential biological interactions.

Future Plan:

In the laboratory, neuston and sediment samples will be processed to extract MPs. Quantification and characterization of extracted MPs will be conducted through microscopic and spectroscopic analyses. Microbial DNA will be extracted from sediment core sections and analyzed using high-throughput sequencing to reveal communities and their correlation and potential interaction with MPs in the environment. Comparative analysis of nearshore and offshore sites, as well as surface water and sediment samples, will help identify controlling factors such as hydrodynamics, sedimentation, and organic matter content that influence the behavior and fate of MPs in marine environments. In addition, integrating

microbial data with physical and chemical characterization of MPs will provide insights into their ecological implications, including microbial colonization, biogeochemical cycling, and potential environmental risks. These results will contribute to a broader understanding of the occurrence and behavior of MPs in both nearshore and offshore marine systems.

4.2.4 Microplastics and its associated microbial communities in the water column of the Western Pacific Ocean)

Shiye Zhao (JAMSTEC)

(1) Purpose, background

Microplastics permeate the water column in the global ocean. The oceanic processes are critical to microplastics dispersing from the sea surface to the deep ocean. It has been proposed that biological and physical processes substantially contribute to the vertical transport of microplastic particles, such as biofouling and density gradients. However, our understanding of how these processes impacting plastic redistribution is limited.

Therefore, we collected water-column particles along the water depth and conducted the microbial incubation experiments to explore the influence of water stratification and microbial colonization on the transport of microplastic particles.

(2) Activities (observation, sampling, development)

- Microbial incubation experiments on the Lander system
- Water-column plastic particles collection

(3) Methods, instruments

- **Microbial incubation experiments on the Lander system eDNA samples of plastic associated microorganisms:** At the station, different types of microplastic particles enclosed in acrylic pipes were mounted on the lander system (Fig.4-2-4-1a). The lander free-sank to the seafloor (~810 m) on August 10, 2025, allowing microbial organisms to colonize the plastic surfaces inside the pipes. Upon recovery of the lander on August 15, the particles were transferred into cryovials containing 2 mL of RNAlater for downstream analysis. At the same time, two 5-L bottom-water samples collected with a Niskin bottle were filtered through Sterivex filters to capture free-living microbes. All eDNA samples were stored at -80 °C until further analysis.
- **Water-column Microplastics sampling:** In-situ pumps (WTS-LV, McLane Research) were tethered to a single A-frame wire (Fig.4-2-4-1b) to collect the water-column plastic particles. The Seawater was directed through a series of filters of the pump: The samples passed through 15- μ m filter disks. All pump samplings were programmed to run for 2.0 hours at each depth resulting in ca. 300-500 L seawater filtered. The collected filters were wrapped with an aluminum foil and stored frozen until analysis.

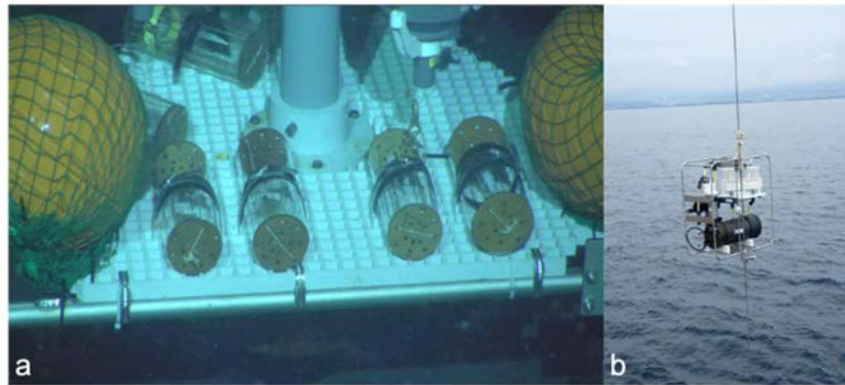


Fig.4-2-4-1: Incubation and water-column particle collection conducted in this project (a, acrylic pipes containing microplastic particles; b, In-situ Pump).

(4) Results, Future Plans, Lists (samples, observation equipment, deployment & recovery), Local field map (dive tracks, sampling points, survey lines), etc

- **Water-column Microplastics sampling:** Subsurface water samplings were carried out at 2 stations with three in-situ pumps (Fig.4-2-4-2). At each station, particle samples at the surface, within pycnocline layers and the layer below pycnocline layers were collected. Particle samples will be purified and the chemical composition are identified with the FTIR imaging.
- **Microbial incubation experiment:** In total, 15 particle samples were harvested after a 5-day incubation at 810 m. eDNA from each particle will be extracted and analyzed using shogun sequencing to profile microbial community composition and function potential.

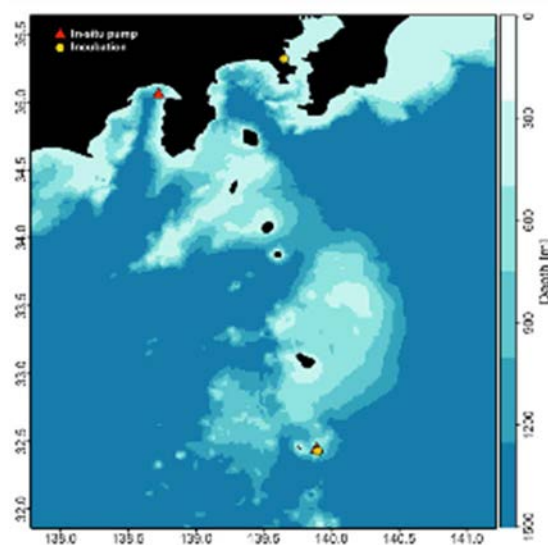


Fig.4-2-4-2: Sampling locations of Incubation experiments (gold dots) and In-situ pump collection (red triangles).

4.2.5 Biodiversity in the chemosynthetic ecosystems

Takao Yoshida (JAMSTEC), Wataru Uno (JAMSTEC), Ayuta Yamaki (Sin-Enoshima aquarium)

Purpose: Understanding of biodiversity in chemosynthetic ecosystem

Summary

Chemosynthetic ecosystems in hydrothermal vents and seeps, which are marine-protected areas, are hot spots characterized by dense aggregations of animal species. Animals living in chemosynthetic ecosystems often establish an intracellular symbiosis with beneficial bacteria. Many investigations have shown that symbiosis plays a key role in shaping biodiversity at the ecological and evolutionary levels. Nonetheless, several aspects of how symbiosis contributes to the creation and preservation of biodiversity are still not fully understood.

In chemosynthetic ecosystems, intracellular symbionts provide the host with nutrients that are usually inaccessible to them. They are thought to acquire nutrients such as organic compounds from their symbionts by digesting them or by directly receiving their supply. To clarify the cooperative interactions between deep-sea animals and their bacterial symbionts, which are crucial for understanding how biodiversity is sustained, one of the important experiments is the observation and investigation of living animals in the laboratory. However, there have been a few long-term observations of the rearing of these animals. During this cruise, we collected *Bathymodiolus* mussels, fish, shrimp, and crabs using KM-ROV. After dive, these animals were reared in seawater tanks, with or without several reagents.

The future plan

After several days rearing, they are dissected, and tissues are fixed with 4 % paraformaldehyde in PBS, 4 % paraformaldehyde in filtered sea water, and 2.5% glutaraldehyde in sea water, and stored at 4°C. Tissues are also fixed with RNAlater, and stored at -80 °C for RNA analysis. The genes expression and metabolites in these animals will be analyzed. These animals for rearing will be analyzed. Detailed analyses of these samples will be performed after the cruise.

4.2.6 RamaCam observation

Tomoko Takahashi and Mehul Sangekar (JAMSTEC), Kentaro Ishida, (Waseda University)

Purpose

Demonstration of fully automated in situ deep-sea particle measurements using RamaCam, an integrated system of imaging and chemical analysis methods

Abstract

Suspended bio-organic particles in the oceans are important for understanding ocean nutrient cycles, while microplastics, which are also floating in the oceans with a similar size to bio-organic particles, cause serious pollution on a global scale. Deep-sea minerals are the focus of much attention recently, while the impacts of deep-sea mining on ecosystems need to be assessed thoroughly, including scattering mineral particles. Those marine particles are defined as an essential ocean variable, which needs to be monitored in the long term and on a global scale. However, very little is known about particles in the deep ocean due to the difficulty in accessibility, and currently most knowledge is based on pointwise measurements from sediment traps or water sampling.

This project aims to develop a novel in situ automatic particle measurement device for long-term continuous monitoring of marine particles, particularly in deep water. We have developed “RamaCam”, an integrated system of imaging (holography) and chemical analysis (Raman spectroscopy) methods for suspended particles in a compact setup that allows accurate particle identification by combining morphological and chemical information. During this cruise, we successfully deployed the RamaCam system on the KM-ROV (dive 327-333). During the dives, the following automatic measurement algorithms were tested: holographic imaging is continuously performed in the flow cell ($\phi 16\text{mm} \times \text{L. } 20\text{ cm}$) where the seawater flows with a pump; a particle with a size of more than several hundreds of micrometers is immediately detected through the imaging processing, and the pump stops; Raman measurement is performed onto the trapped particle for several tens of seconds; after the measurement, the pump starts again to wait for a new particle. After optimizing the parameters for the algorithms, the RamaCam was mounted on the CTD frame and performed fully automated measurements of deep-sea particles with a battery-connected standalone system for the first time.

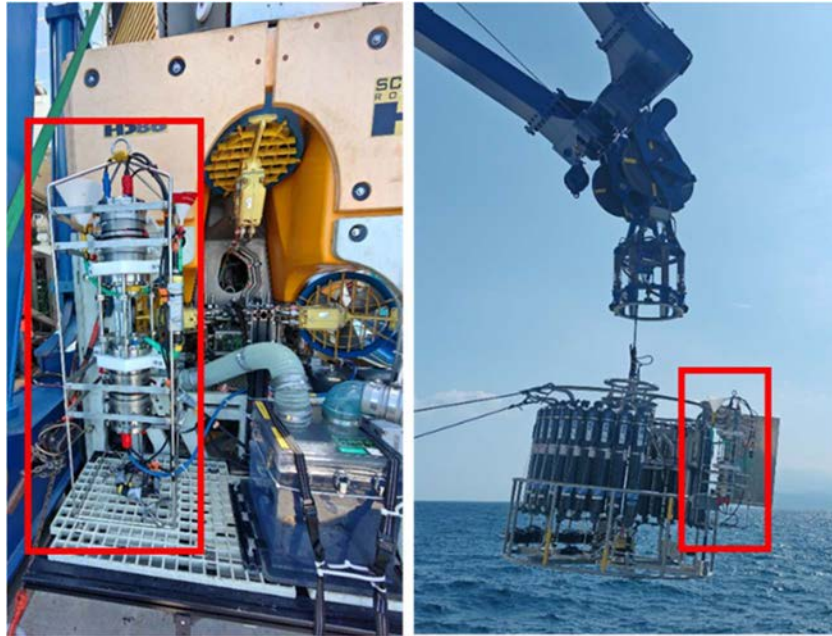


Fig.4-2-6-1 (Left) RamaCam mounted on the KM-ROV and (right) on the CTD frame

Future plan

The data taken during the cruise will be analyzed in detail for particle identification. Further improvements of the system will be performed, such as miniaturization, faster particle detection, and low-power consumption system development for long-term deployment of the system.

4.2.7 In-situ Gamma-Ray sensor

Kiminori Shitashima (TUMSAT)

Summary of hydrothermal gamma-rays observation

The high sensitivity and lightweight underwater in-situ gamma-ray sensor using NaI(Tl) doped plastic scintillator was developed for oceanographic applications. The plastic scintillator was coated by light-resistant paint and used as a part of pressure housing. Therefore, the sensor can expect high sensitivity because the plastic scintillator contacts seawater directly. This sensor consists of plastic scintillator, photomultiplier tube, preamplifier unit, high-voltage power supply, data logger and lithium-ion battery, and all parts are stored in a pressure housing. The in-situ pH/pCO₂ sensor employs an Ion Sensitive Field Effect Transistor (ISFET) as a pH electrode, and the Chloride ion selective electrode (Cl-ISE) as a reference electrode. This sensor has a quick response (less than a second for pH and less than 30 seconds for pCO₂, high accuracy (± 0.003 pH and ± 5 ppm of CO₂) and pressure-resistant performance.

In order to check the systems of gamma-ray sensor and pH/pCO₂ sensor, the sensors were installed to the CTD/CWS frame and in-situ vertical data of gamma-rays/pH/pCO₂ were measured every 1 seconds during descent and ascent of the CTD/CWS system at stations LS1 and LS1-02 in Higashi-Aogashima Caldron. The sensors were deployed at the Central Cone Site of Higashi-Aogashima Caldron at KMROV #330 dive, and observed the gamma-rays/pH/pCO₂ every 60 seconds for 3.5 days (the sensor was recovered at KMROV #332 dive). The sensors detected the anomalies of gamma-rays/pH/pCO₂ originating from hydrothermal activity.

Proposals for the future studies

Observation of distribution and behavior of hydrothermal gamma-rays

Because of hydrothermal ore and hydrothermal fluid content high level of gamma-rays, hydrothermal organisms are continually expose to gamma-rays. In order to understand the environmental impact of gamma-rays to hydrothermal biota, the enforcement of long-term monitoring and mapping survey of hydrothermal gamma-rays by using in-situ sensor are desired.

4.2.8 Deployment of various imaging systems for 3D seafloor mapping and multi-scale observation of marine animals and other marine particles

Sangekar Mehul Naresh and SATO Riki (JAMSTEC)

Purpose:

To record visual data from midwater and seafloor using stereo camera and multiple shadowgraph cameras mounted on different underwater platforms. Generating 3D color seafloor reconstructions, observing plankton distributions and analyzing marine particles count and size profiles at various sites during the cruise.

Abstract:

During this research cruise, we recorded visual data of plankton and other marine animals using stereo and shadowgraph imaging systems at various sites. A shadowgraph was mounted on the CTD Rosette and data was recorded successfully at multiple locations from surface to 1500m depth. Shadowgraph videos were recorded while ascent and decent of the CTD Rosette for vertical profiling as well as by keeping the CTD Rosette stationary at different depths for analyzing particle counts per volume of water. A second shadowgraph was attached to the cable using clamps below the pump system used for sampling of marine plastics. The shadowgraph recorded data successfully during the first deployment but had hardware problems in the second deployment and now used thereafter. A stereo camera was mounted on the Kaimei ROV during all the ROV dives and data was recorded successfully. This data will be used to generate 3D color seafloor reconstructions and to annotate marine animals. A third shadowgraph was mounted on the Kaimei ROV for the first time to record plankton and other marine particle data during ROV dives. The shadowgraph and stereo camera were simultaneously used on the Kamei ROV for mapping the hydrothermal vent plume at Higashi-Aogashima Central Cone site. Several ROV transects were performed in and out of the plume for mapping.

Future Plan:

The data collected using various systems will be analyzed to extract information such as 3D color seafloor reconstructions, marine particle count and size profiles, plankton distributions which will be shared with other members for collaborative research. Plankton annotated in the shadowgraph videos will be used to produce plankton distributions and also for making training sets for machine learning. The stereo camera videos from the seafloor will be used to generate 3D seafloor color reconstructions at various sites such as the clam colony in Hatsushima Sagami bay site, hydrothermal vent sites in Myojin and the Higashi-Aogashima Central Cone. The stereo videos will also be used for identifying and annotating the marine animals and estimating their size using stereo. At the Higashi-Aogashima Central Cone site, we are working on an algorithm to automatically detect the plume in shadowgraph videos. The results from this will be overlaid on the ROV track and the 3D color seafloor reconstruction of the chimney to understand the spread of plume.

Imaging Payload Equipment

During this cruise, one stereo camera and three shadowgraph cameras were used which were mounted on different platforms viz the Kaimei ROV, CTD Rosette system and the pump system used for sampling of marine plastics. The detailed description of each equipment used is as mentioned below:

1. Stereo camera

A Stereo camera was installed on the Kaimei ROV which has the following specifications:

- Two cameras each with 4K resolution
- 4000 m depth rated underwater housing
- No special lighting, using the spot and wide lighting from the ROV
- 24V DC power for the camera was derived from the ROV. No battery was not used
- Maximum capacity of 10 hours of dive data
- Data recorded as mp4 files and split in 10 min intervals

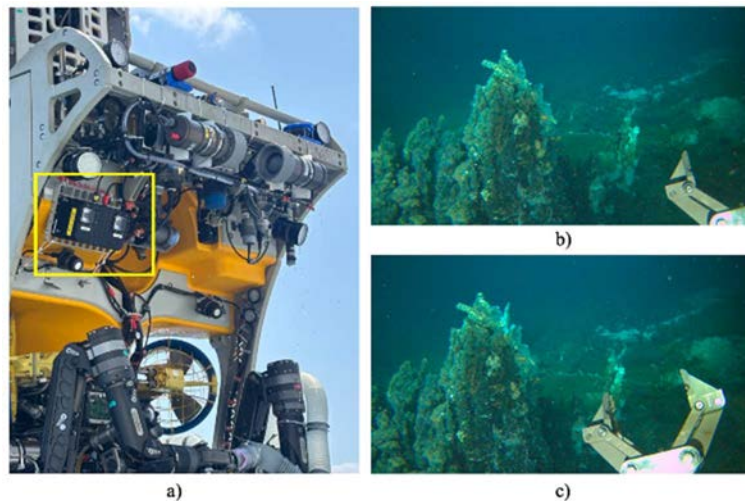


Fig.4-2-8-1: a) Stereo camera mounted in the front of the Kaimei ROV b) Left stereo camera image taken at Myojin caldera hydrothermal vent c) Right stereo camera image taken at the same instance of time

Videos were successfully recorded during all the ROV dives. Although the lighting from the ROV was sufficient for illuminating the area in front of the cameras during most of the dive, some dark or over exposed areas were found specially when the ROV was too close to the seafloor or the chimney. The videos are now being analyzed to identify and annotate marine animals as well as generate 3D color seafloor reconstructions.

2. Shadowgraph 0

The Shadowgraph 0 system was mounted on the underside of the CTD Rosette water sampling system. More specifications on the camera are as follows:

- Depth rated 1500m underwater housings for LED and camera
- The length between the LED and Camera housing set at 240 mm
- Viewing area diameter of 60 mm
- Single camera, 13 Megapixels, 8-bit resolution

- Standalone unit 20000mAh battery in each housing with 8 hours battery life
- Data recorded as mp4 files and split in 10 min intervals

Shadowgraph videos were recorded during all the CTD Rosette casts. During the first cast, there was slight misalignment between the LED and camera. This was fixed and no problems were observed during the remaining CTD Rosette casts. The data from is now being analyzed to generate particle size and count vertical profiles during descent and ascent of the CTD Rosette system.

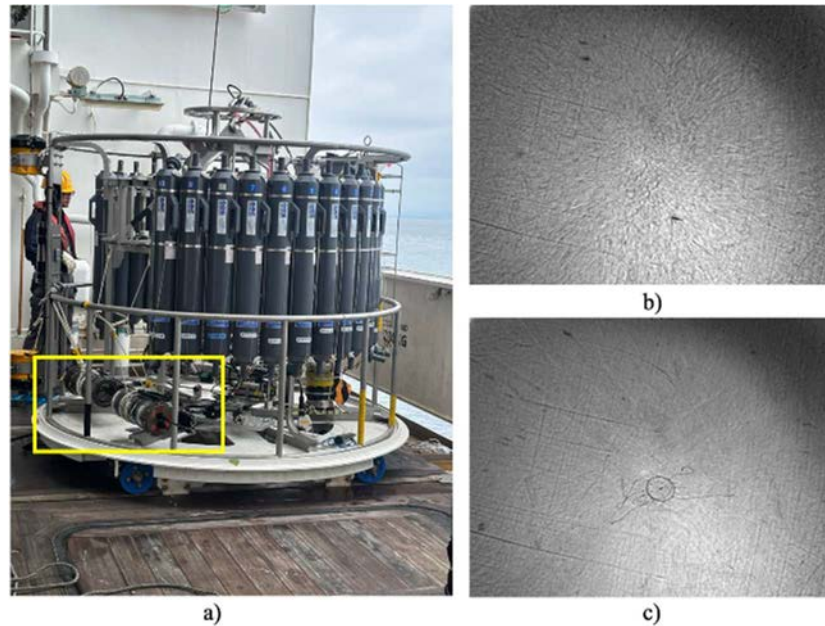


Fig.4-2-8-2: a) Shadowgraph0 camera mounted in the bottom empty space of the CTD Rosette water sampling system b) Surface mixing layer observed in the Shadowgraph 0 c) Marine animals, jellyfish such as *Rhopalonema velatum* were also clearly observed in the videos

3. Shadowgraph 1

The Shadowgraph 1 system was mounted on the top structure of the Kaimei ROV to record plankton and other marine particles coming directly from the front. More specifications on the camera are as follows:

- Depth rated 1500m housings for LED and camera
- The length between the LED and Camera housing set at 260 mm
- Viewing area diameter of 80 mm
- Single camera, 13 Megapixels, 8-bit resolution
- Standalone unit 20000mAh battery in each housing with 8 hours battery life
- Data recorded as mp4 files and split in 8 min intervals

Shadowgraph videos were recorded during all the ROV dives. During the first dive, there was slight misalignment between the LED and camera. This was fixed and no problems were observed during the remaining dives. The data from is now being analyzed to generate particle size and count profiles, identify and classify plankton and produce machine learning training sets.

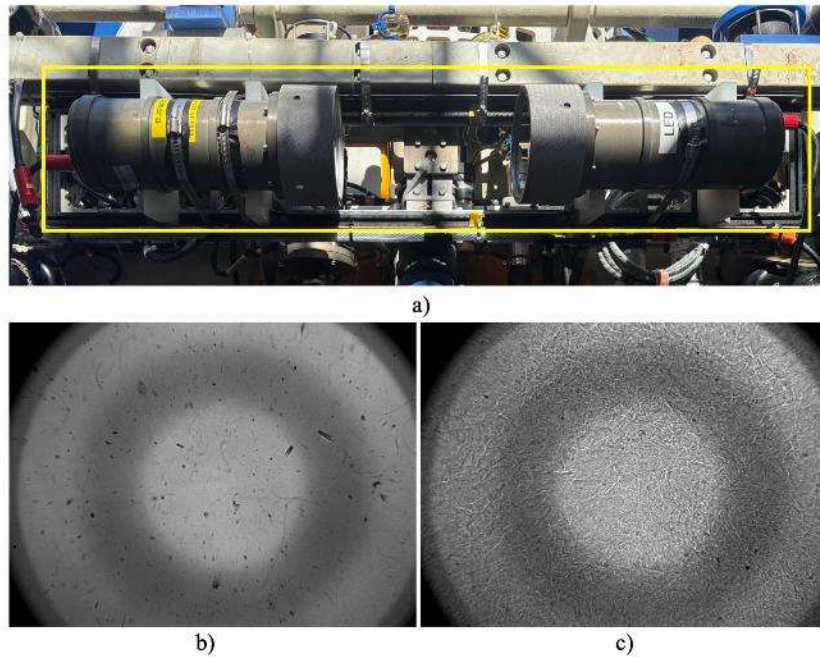


Fig.4-2-8-3: a) Shadowgraph 1 camera mounted on the top structure of the Kaimei ROV in the front b) High density of marine animals and particles observed near the surface c) Mixing layer observed clearly in the shadowgraph 1 videos

Shadowgraph 2

The Shadowgraph 2 system was mounted on the cable using clamps below the pump system used for sampling of marine plastics. The blue robotics housings were used to build this shadowgraph with specialized acrylic windows for higher depth rating. More specifications on the camera are as follows:

- Depth rated 800m housings for LED and camera
- The length between the LED and Camera housing set at 100 mm
- Viewing area diameter of 70 mm
- Single camera, 13 Megapixels, 8-bit resolution
- Standalone unit 20000mAh battery in each housing with 8 hours battery life
- Data recorded as mp4 files and split in 8 min intervals

Shadowgraph 2 videos were recorded along with the pump system for sampling marine plastics. During the first deployment, data was collected successfully. However, during the second deployment, there was a hardware failure and camera disconnected in-dive. The shadowgraph was not used during the remaining deployments. The data from is now being analyzed to generate particle counts per volume of water which will provide essential inputs to the marine plastic collection experiments.

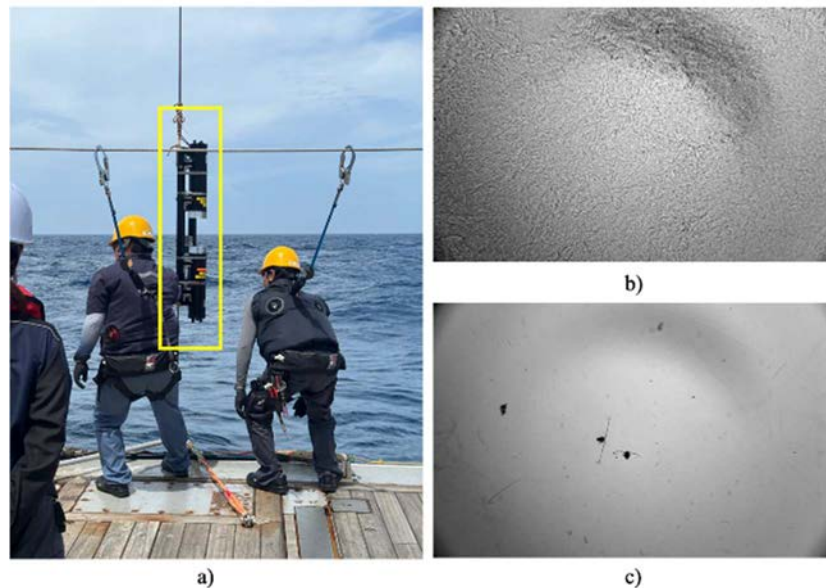


Fig.4-2-8-4: a) Shadowgraph 2 camera mounted on the cable using clamps b) Mixing layer observed near the surface c) Copepods clearly observed in the Shadowgraph 2 video

All the imaging systems have a uniform operational interface which connects to the system over a custom Wireless Network. This interface is used to adjust settings, synchronize time, start and stop recording. Before each dive, the corresponding camera system was connected to a laptop using wireless network, the system time was synced and data recording was started. The data was recorded in a SD card internal to the camera housing. At the end of each dive, the stereo camera was removed from the Kaimei ROV and powered using external power supply for data extraction. The data from Shadowgraph 1 mounted on the Kaimei ROV was downloaded in-place using its internal batteries since the data size is not as big as the stereo camera. Data from the Shadowgraph 0 on the CTD Rosette was also downloaded in-place as well while the Shadowgraph 2 data was downloading after returning it to the workbench.

Plume Mapping

Shadowgraph and stereo mapping systems were simultaneously used for the first time for mapping a hydrothermal plume. Mapping was performed at the Higashi Aogashima Central Cone. Transects were made starting from about 10 m away from the chimney to 10 m after. Several transects were made passing inside, top, bottom as well as sides of the plume. The main objective of this experiment was to test if the plume can be detected in the shadowgraph camera. Fig.4-2-8-5 shows the shadowgraph images from inside and outside of the plume as well as the surface mixing layer. The plume was successfully detected as a mixing pattern in the videos taken inside the plume and as a slight mixing pattern slightly away from it. We are developing an algorithm to detect this pattern automatically and then project the results on the ROV trajectory to make a 3D map of the plume. We will also overlay these results on the 3D color reconstruction of the chimney. We are also trying to determine from what altitude above the chimney can this pattern can be detected in the shadowgraph videos.

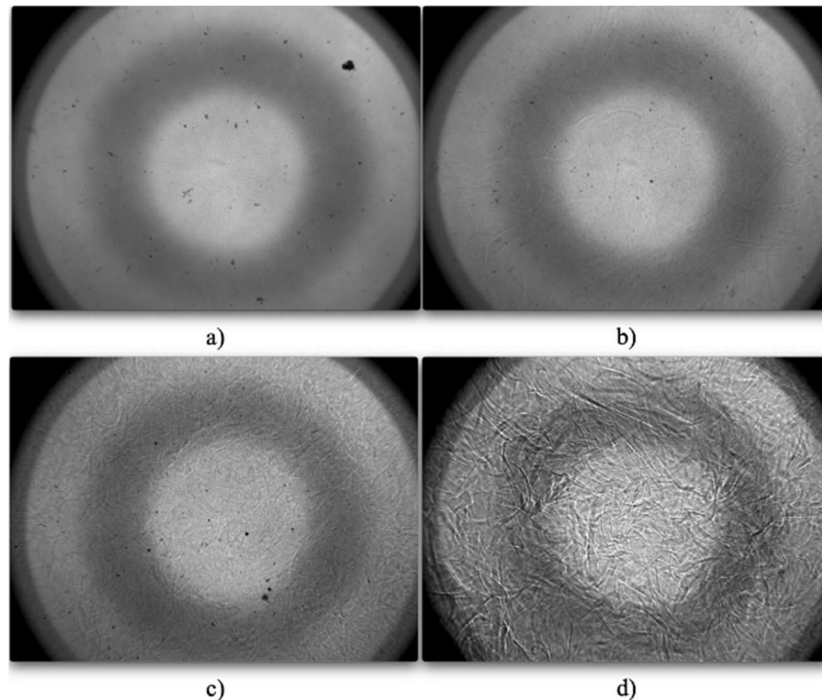


Fig.4-2-8-5: Shadowgraph images at Higashi Aogashima Central Cone a) Shadowgraph 1 video taken in the area outside the plume shows small particles and no mixing pattern b) Shadowgraph1 recorded to the side of the plume shows slight mixing pattern c) Shows surface water mixing layer d) Shadowgraph 1 video recorded inside the plume shows strong mixing pattern

4.2.9 Squidle Data Management

Riki Sato (KUSMB) and Mehul Naresh Sangeker (JAMSTEC)

Purpose :

- 1) To explore biodiversity in the deep ocean.
- 2) To simplify the utilization of ROV video data.
- 3) To develop artificial intelligence capable of classifying jellyfish, particularly Hydrozoan taxa.

Method :

ROV dives were conducted eight times, and we captured real-time screenshots for each dive. After each dive, we manually annotated the images we captured. The screenshots were then automatically uploaded to the Squidle server.

Abstract :

We conducted an analysis of videos captured by remotely operated vehicle (ROV) to investigate biodiversity in the deep ocean. Eight ROV dives were conducted between KM0326 and KM0333. For each dive, we captured screenshots of the ROV video, including sampling scenes and animals discovered. For instance, we found Genus *Arctapodema*, *Crossota* and *Solmissus*. These images were labeled and annotated to develop artificial intelligence capable of classifying animals, particularly hydrozoan jellyfish. Each image captured includes metadata such as depth, salinity, and temperature, which we utilized to elucidate the distributions of hydrozoan jellyfish. In the future, we intend to analyze ROV video data from diverse regions to further elucidate the distribution and ecological niche of jellyfish in the deep ocean.

Future plan :

We intend to collect marine animal data into the Squidle server located in a different region. Once the data is collected, every marine biologist can access the Squidle database for various purposes, such as identification, training data, and learning about marine animals. Additionally, we will assess the impact of global warming on the deep ocean by comparing the distribution data of jellyfish.

4.2.10 Acquisition of Baseline Data Necessary for Verification and Development of Environmental Impact Assessment Technology

Yasuo Furushima (JAMSTEC), Masayuki Nagao (AIST), Mamoru Tanaka (TUS)

In order to advance and optimize survey techniques for environmental impact assessment, a series of investigations were carried out at the Higashi-Aogashima Knoll, building on the knowledge accumulated to date. Initially, the purpose of this cruise had been positioned as part of the pre-, during-, and post-survey program associated with the planned BMS test drilling, and the present cruise was expected to correspond to the post-survey. However, as the test drilling was not conducted, the aim of this cruise was instead to verify environmental impact assessment techniques and to reliably obtain baseline data necessary for environmental assessment.

Specifically, environmental surveys using a lander system (CTD casts, current measurements with a high-resolution acoustic Doppler velocimeter, water sampling for eDNA analysis, and core sampling), turbulence profiling from the sea surface to the seafloor with a VMP-X, XCTD transect observations, and the recovery of an ADCP deployed on the seafloor during the previous year were conducted.

Through these efforts, baseline data were collected from multiple perspectives, and analyses are currently underway toward the development of a comprehensive environmental impact assessment package.

Environmental Measurement by Free-Fall Lander

The free-fall lander (Fig.4-2-10-1) was deployed at a site south of the planned drilling point, where it collected environmental data for about four days (Table 4-2-10-1).

Table 4-2-10-1. Information on the lander installation



Fig.4-2-10-1 Free-fall lander

Observation point	Higashi-Aogashima
Location (Lat. and Long.)	32-25.76N 139-53.84E
Depth (m)	813
Lander input time	2025/8/10 16:50
Installation Time	2025/8/10 17:08
Descent speed (m/min)	45.1 (813m/18min)
start time of surfacing	2025/8/15 8:33
Lander surfacing time	2025/8/15 8:49
Surfacing speed (m/min)	50.8 (813m/16min)
Installation period (hour)	111

The lander was equipped with a camera system to capture the seabed environment, a RINKO

Profiler (CTD) to measure water temperature, salinity, turbidity, and dissolved oxygen, and an acoustic Doppler velocimeter (ADV), a high-precision single-point current meter capable of estimating deep-sea turbulence, all of which recorded environmental data.

In addition, water sampling was conducted with a water sampler attached to the lander, and sediment core sampling was carried out using corers attached to each leg. During the lander survey, acrylic pipes for microbial incubation experiments were mounted on the system, and the experiments were conducted.

Turbulence Measurement by Expendable Vertical Microstructure Profiler (VMP-X)

Near the installation point of the free-fall lander, turbulence measurements were conducted using a VMP-X to investigate the mixing environment from the ocean surface to just above the seabed. Although preliminary, the turbulent kinetic energy dissipation rate (ϵ), an indicator of deep-sea turbulence intensity near the seabed, varied between 10^{-7} and 10^{-8} W/kg (Fig. 4-2-10-2(b)). This variation is presumed to reflect the influence of complex seabed topography and hydrothermal venting, both of which are characteristic of hydrothermal areas. A working hypothesis is that enhanced mixing associated with the rising hydrothermal plume elevated ϵ around ~720 m, ϵ weakened along the chimney's mid-slope, and increased again near the seabed due to interactions between complex bottom topography and venting. These interpretations remain working hypotheses at this stage, but to better understand the mixing environment associated with hydrothermal venting, it will be necessary to conduct integrated analyses using physical measurements obtained from the lander-mounted instruments and related observations.

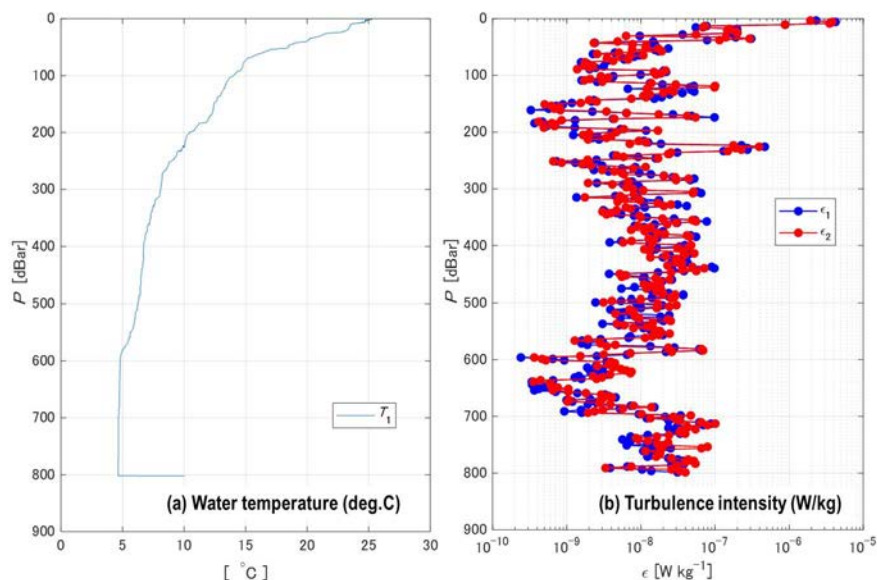


Fig.4-2-10-2 Vertical fluctuation of water temperature and turbulence energy dissipation rate (ϵ : turbulence intensity) using VMP-X.

Long-Term Current Measurement by ADCP (Recovery of ADCP)

In the previous cruise (KM24-03), an ADCP was deployed on the seafloor at the Higashi-Aogashima Knoll (Fig.4-2-10-3) to obtain long-term current data. In this cruise, the ADCP was recovered, and approximately one year of current data were obtained (Fig.4-2-10-4). While short-term environmental data are important for environmental impact assessments, the acquisition of long-term baseline data is also essential. Although detailed analyses will be conducted in the future, the long-term ADCP dataset obtained in this study will serve as fundamental information for understanding the mixing environment and suspended particle dynamics inside the Higashi-Aogashima Knoll. The ADCP was configured to measure 30 layers with a bin size of 4 m, starting from approximately 8.66 m above the seafloor, with a sampling interval of 30 minutes.



Fig.4-2-10-3 ADCP installed at the lander site (Stn. HG_LS)

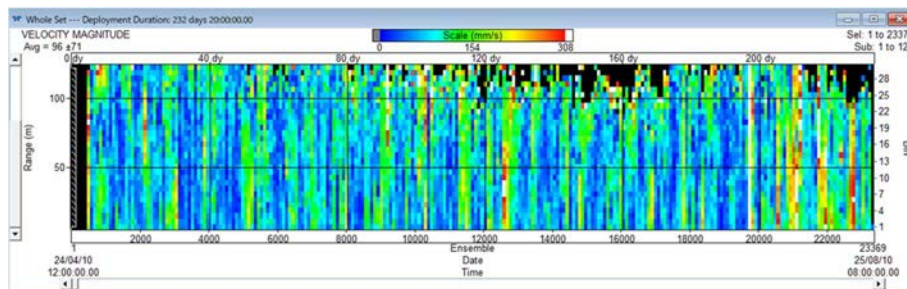


Fig.4-2-10-4 Time-series variations of current velocity recorded by the ADCP

CTD, Water Sampling, and XCTD Observations

At the Higashi-Aogashima Knoll, CTD casts and water sampling were conducted at the lander site (HG_LS) and the central cone site (HG_CC). In addition to water sampling for environmental DNA extraction, the CTD observations included current measurements using LADCP as well as suspended particle observations with a shadowgraph camera and the RamaCam system (Fig.4-2-10-5). Furthermore, to capture the three-dimensional oceanographic structure of the Higashi-Aogashima Knoll, XCTD transects for temperature and salinity were carried out along three east–west survey lines (Fig.4-2-10-6).

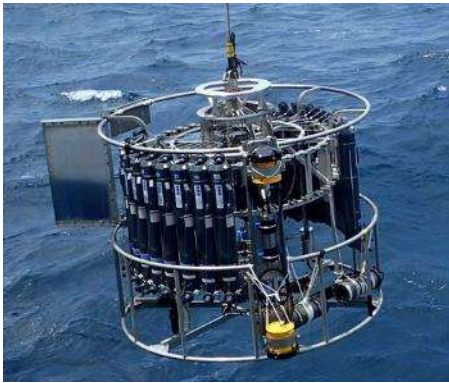


Fig.4-2-10-5 CTD system

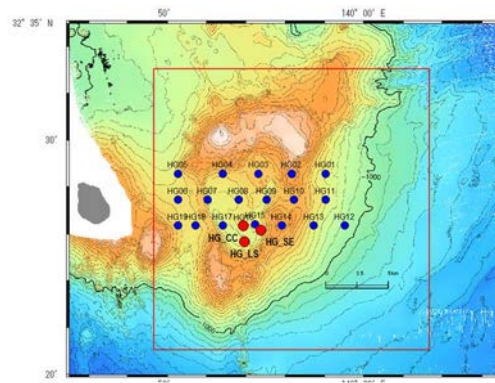


Fig.4-2-10-6 Map of XCTD observation lines

4.2.11 Approaches to Deep-Sea Biodiversity and Environmental Impact Assessment Akira Eto (TUMSAT) and Takehisa Yamakita (JAMSTEC)

Biodiversity assessment by underwater cameras

This study aims to evaluate biodiversity, including fish, at the Higashi-Aogashima Knoll. For long-term temporal observations, simple surveillance cameras were installed on the seafloor to collect data for more than one year. In addition, cameras were mounted on three sides of a lander to obtain omnidirectional data over an intermediate timescale.

A seafloor surveillance camera was recovered during #Dive329. However, water ingress into the camera was detected, and it was discarded at a depth of approximately 100 m during the ROV recovery operation. The seafloor-mounted camera was equipped with settlement plates and sponges for collecting attached organisms and eDNA. These were retrieved at the time of camera disposal and subsequently preserved by freezing on board.



Fig.4-2-11-1 The moment when the camera installed on the lander flashed

The condition of the cameras installed on the lander was examined during #Dive330. In this dive, LED flashes were observed from one of the two cameras, confirming that it was functioning normally. After recovery of the lander, it was confirmed that both cameras had continued recording until just before retrieval. However, during seafloor deployment, illumination was insufficient because the LED flashes were reflected by the front glass of the pressure-resistant housing, preventing adequate imaging of the surrounding environment. As a result, the lander-mounted cameras were unable to record large organisms.

In this cruise, a trial operation of medium- to long-term seafloor observation using three cameras was conducted. However, none of the cameras succeeded in observing seafloor organisms. Based on the knowledge gained in this trial, we plan to improve the design of the seafloor-mounted cameras by applying anti-reflective coating to the lens section of the pressure-resistant housing, adjusting the distance between the light source and the lens, and enhancing the corrosion resistance of the housing. We also aim to develop the system infrastructure necessary for appropriate long-term monitoring in future surveys.

Environmental impact assessment by simple sediment traps

An environmental impact assessment was undertaken using sediment traps to evaluate potential effects of future seabed drilling. Two sediment traps and a seabed camera were installed on the seafloor at the Higashi-Aogashima Knoll. One sediment trap was capped 4 months after installation, whereas the other was capped 16 months after installation. This experimental design enabled the assessment of temporal changes in sediment accumulation, organic matter content, and eDNA composition as part of a multifaceted evaluation of potential environmental impacts.

The sediment traps were installed during cruise KM24-03. In this survey, a cap was attached to the sediment trap that had remained open for 16 months during #Dive329, and both traps were subsequently recovered. On board, water accumulated inside the traps was removed using a pump, and the sediments were collected, sealed in storage bags, and frozen for preservation. In addition, abundant attached organisms were observed on the inner wall of the trap capped 4 months after installation; these materials were also collected and preserved. Each trap was equipped with a temperature logger, which was retrieved along with the traps. A qualitative comparison of the two traps suggested that the trap exposed for 16 months contained a markedly greater quantity of sediment, supporting the utility of even simple sediment traps in capturing temporal variation in sediment deposition.



Fig.4-2-11-2 Sediment traps on the seafloor

Although the planned seabed drilling was not conducted during the study period, the results obtained here indicate that simple sediment traps are effective for monitoring sedimentation and may serve as a practical tool for environmental impact assessments in future drilling projects. Moreover, the temporal dataset acquired from the Higashi-Aogashima Knoll provides valuable baseline information that can be further refined through analyses of organic matter content, quantitative sediment accumulation, and eDNA composition, thereby contributing to comprehensive environmental assessments in future studies.

Biodiversity assessment by eDNA in environmental water

To assess biodiversity at the Higashi-Aogashima Knoll, environmental water and eDNA samples were collected using CTD water sampling and water samplers installed on a lander. In particular, to evaluate deep-sea fish biodiversity in the vertical profile, environmental water was collected and eDNA analyses were performed at multiple depths. Simultaneously recorded

environmental parameters were also analysed to examine the relationship between environmental factors and species occurrence.

On 10 August, CTD water sampling was conducted at depths of 210 m and 550 m, and at 777 m, 10 m above the seafloor, with 24 L of water collected at each depth. After sampling, environmental water was filtered on board using Sterivex filters and eDNA was collected for each sampling point. To monitor potential contamination during filtration, purified water placed in the working area was filtered as a negative control. The collected eDNA samples were preserved in buffer solution and stored at -80 °C.

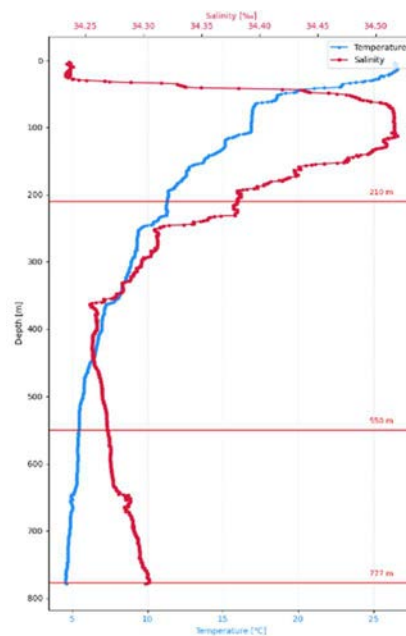


Fig.4-2-11-3 Temperature & Salinity of the Higashi-Aogashima Knoll and the depth of CTD water sampling points

The lander, deployed on the evening of 10 August, automatically closed its water sampler approximately six hours after deployment, thereby collecting environmental water near the seafloor. The lander was recovered on the morning of 15 August, and the water samples were filtered in the same manner as the CTD water samples. For the lander water samples, 12 L of water was filtered through each of two Sterivex filters, resulting in a total of 24 L of filtered environmental water.

These samples will be subjected to metabarcoding analyses on land to determine the composition of fish species at each location. Furthermore, the results will be compared with other data obtained during this cruise, including ROV video observations of the seafloor and eDNA analyses of sediments, to evaluate and compare biodiversity across various environmental conditions.

Deep-sea biological mapping using video footage from the ROV

To assess biodiversity and analyze habitat use on the deep seafloor, biological mapping was conducted using video footage from the ROV. The ROV was navigated along survey lines at a

constant speed and angle above the seafloor, allowing organisms captured by the onboard cameras to be mapped.

Off the coast of Hatsushima Island in Sagami Bay, seafloor imaging was conducted using both the standard camera and the stereo camera mounted on the KM-ROV. During recording, the ROV maintained an altitude of approximately 2–3 m while operated at a constant speed, keeping the camera angle and magnification fixed along each survey line. In #Dive326, one survey line was observed; in #Dive327, 18 survey lines; and in #Dive333, one survey line. For six of the survey lines in #Dive327, the ROV was operated directly above *Calyptogena* colonies along the transects to map the entire colonies.

The footage captured included not only bivalves such as *Calyptogena* and *Bathymodiolus*, but also a range of other taxa including Actiniaria (e.g., Actinoscyphiidae), Crustacea (e.g., Decapoda), and fishes (e.g., Anguilliformes, Sebastidae, Macrouridae).

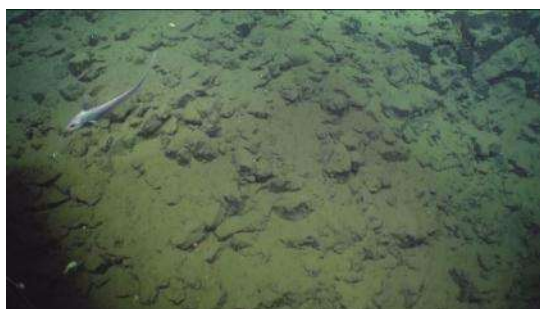
The recorded video will be used to quantify individual abundance and spatial distribution, assess biodiversity and seafloor landscape, and visualize biological distributions along the survey lines on maps. In particular, further analyses of *Calyptogena* colony mapping are expected to provide ecological insights into colony size, patch structure, and other aspects of the biology of these bivalves.



(a)Sebastidae (#Dive326)



(b)Actinoscyphiidae (#Dive326)



(c)Macrouridae (#Dive327)



(d)Colony of *Calyptogena* (#Dive327)

Fig.4-2-11-4 Seafloor observations from the KM-ROV transect survey

4.2.12 Recording Vessel and Acoustic Device Sounds to Estimate Sound Speed Profile

Mayu Ogawa (JAMSTEC)

Purpose:

To record the sounds of the R/V Kaimei and various acoustic devices installed on board, using hydrophone recorder deployed off the coast of Shimoda in Sagami Bay. In addition, to survey sound velocity profiles using the XCTD.

Abstract:

Recording was conducted on August 8 from 06:38 to 16:00 (local time). First, the vessel navigated along north–south and east–west survey lines while operating the MBES. Second, the vessel navigated along the survey lines while operating the SBP. Third, the vessel navigated along the survey lines while transmitting a 10–15 kHz up-chirp signal using the ANS. Concurrently, sound velocity profiles were acquired using the XCTD at the coordinates of the hydrophone deployment point and at points to the north, south, east, and west (Fig. 4-2-12-1). Finally, the vessel entered the north–south line midway along the east–west transect and navigated through the hydrophone deployment point.

Future Plan:

After retrieving the hydrophone recorder deployed on the seafloor off Shimoda in Sagami Bay, we will analyze the recorded acoustic data to estimate sound speed profiles.

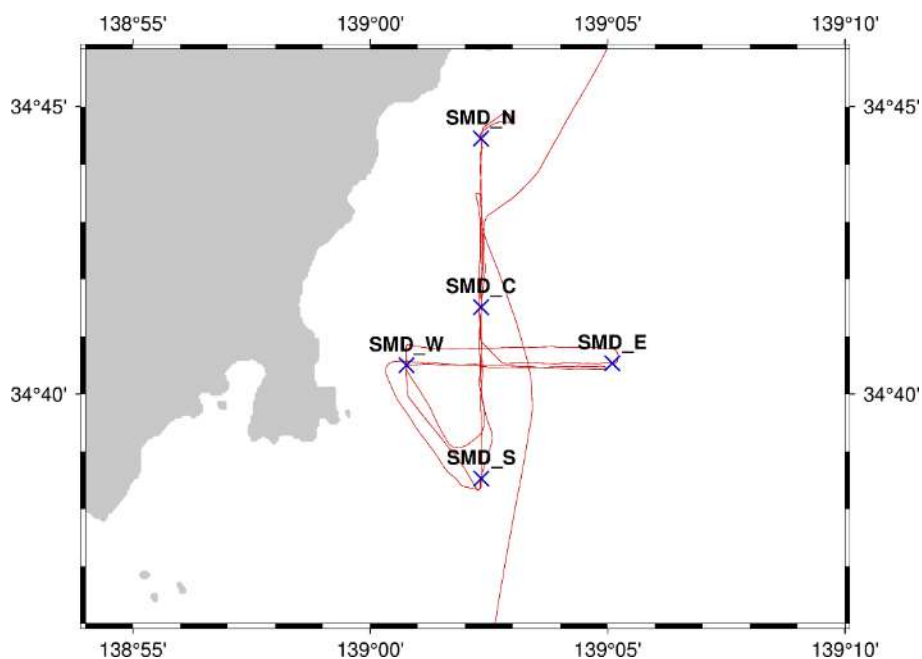
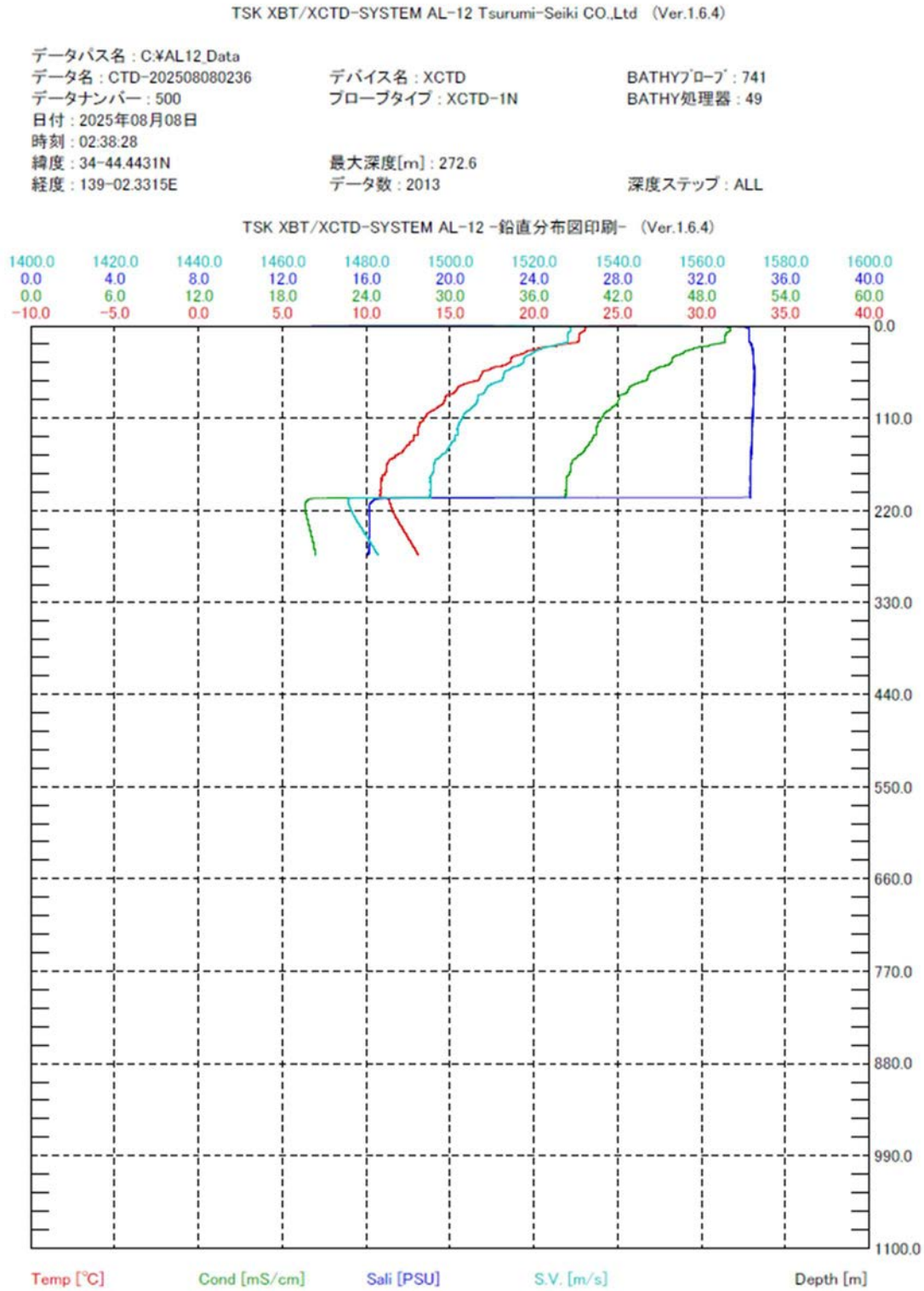


Fig. 4-2-12-1 Survey lines.

Appendix: XCTD profiles

SMD_N (North)



SMD_C (Hydrophone deployment point)

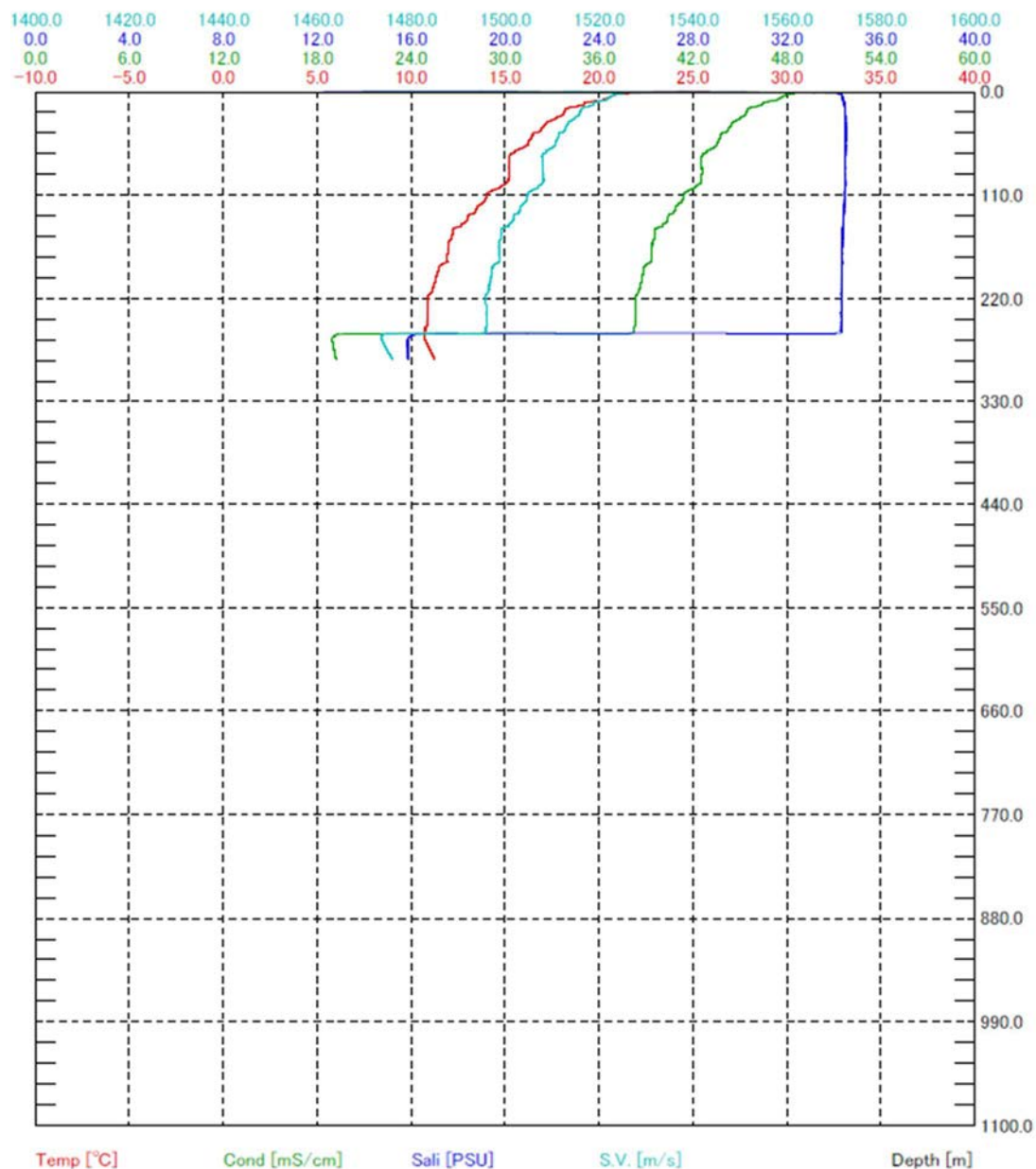
TSK XBT/XCTD-SYSTEM AL-12 Tsurumi-Seiki CO.,Ltd (Ver.1.6.4)

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 データ名 : CTD-202508080316
 データナンバー : 501
 日付 : 2025年08月08日
 時刻 : 03:18:11
 緯度 : 34-41.5108N
 経度 : 139-02.3337E

デバイス名 : XCTD
 ブロープタイプ : XCTD-1N
 最大深度[m] : 284.6
 データ数 : 2102

BATHYプローブ : 741
 BATHY処理器 : 49
 深度ステップ : ALL

TSK XBT/XCTD-SYSTEM AL-12 -鉛直分布図印刷- (Ver.1.6.4)

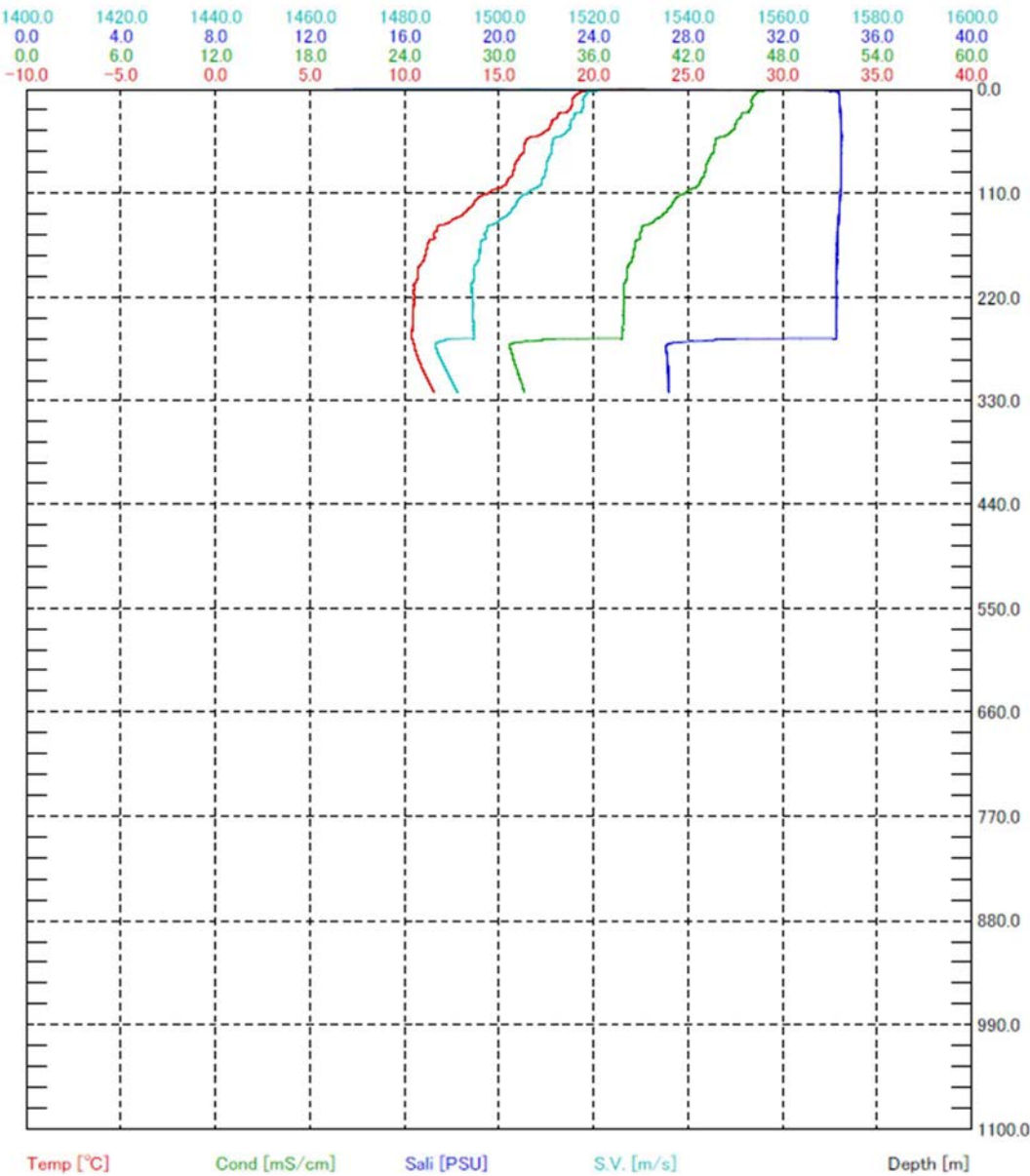


SMD_S (South)

TSK XBT/XCTD-SYSTEM AL-12 Tsurumi-Seiki CO.,Ltd (Ver.1.6.4)

データベース名 : C:¥AL12 Data	デバイス名 : XCTD	BATHYプローブ : 741
データ名 : CTD-202508080356	プローブタイプ : XCTD-1N	BATHY処理器 : 49
データナンバー : 502		
日付 : 2025年08月08日		
時刻 : 03:59:04		
緯度 : 34-38.5257N	最大深度[m] : 321.0	
経度 : 139-02.3380E	データ数 : 2375	深度ステップ : ALL

TSK XBT/XCTD-SYSTEM AL-12 -鉛直分布図印刷- (Ver.1.6.4)



SMD_W (West)

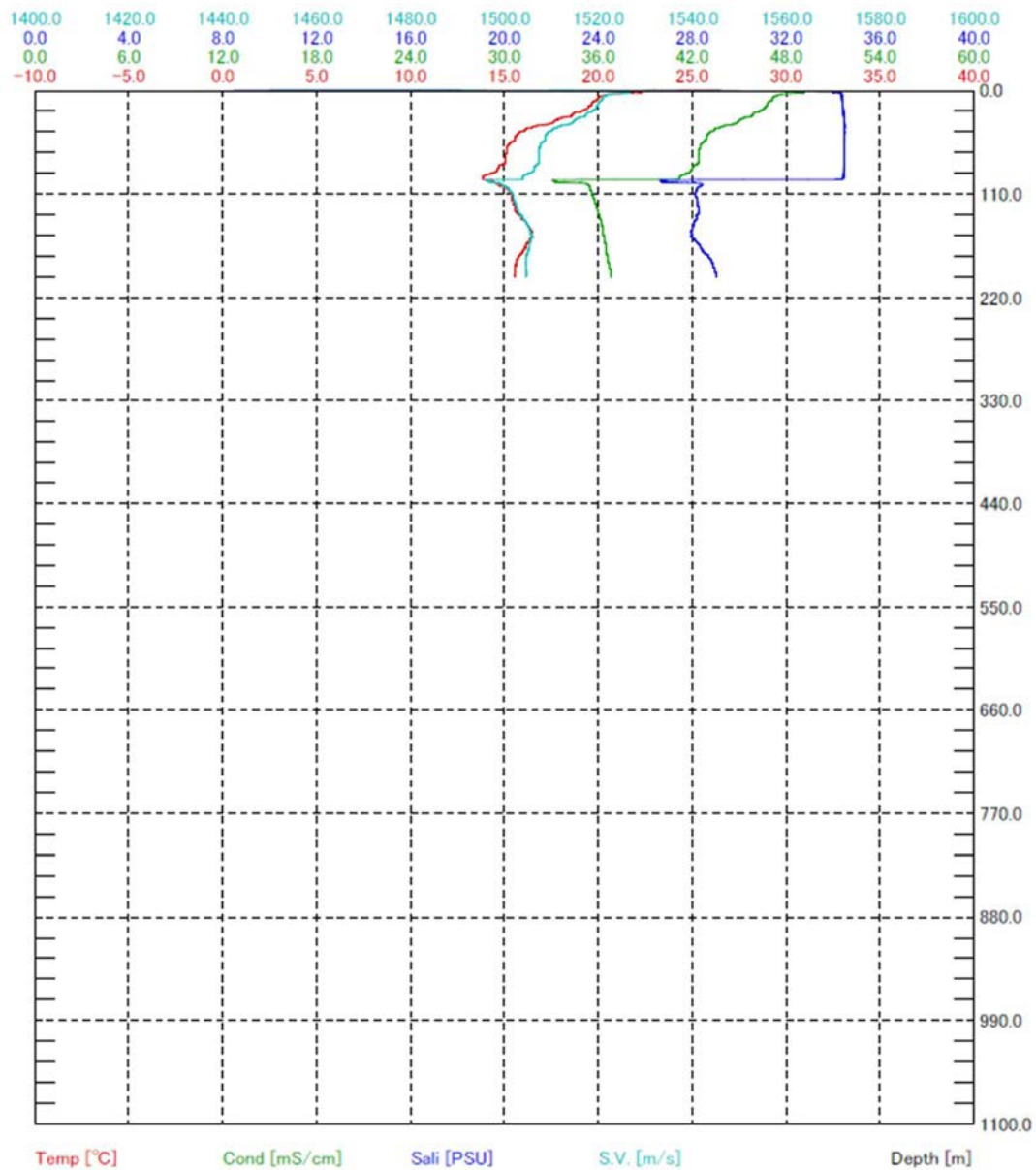
TSK XBT/XCTD-SYSTEM AL-12 Tsurumi-Seiki CO.,Ltd (Ver.1.6.4)

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 データナンバー : 503
 日付 : 2025年08月08日
 時刻 : 04:43:41
 緯度 : 34-40.5008N
 経度 : 139-00.7637E

デバイス名 : XCTD
 プローブタイプ : XCTD-1N
 最大深度[m] : 197.6
 データ数 : 1455

BATHYプローブ : 741
 BATHY処理器 : 49
 深度ステップ : ALL

TSK XBT/XCTD-SYSTEM AL-12 -鉛直分布図印刷- (Ver.1.6.4)



SMD_E (East)

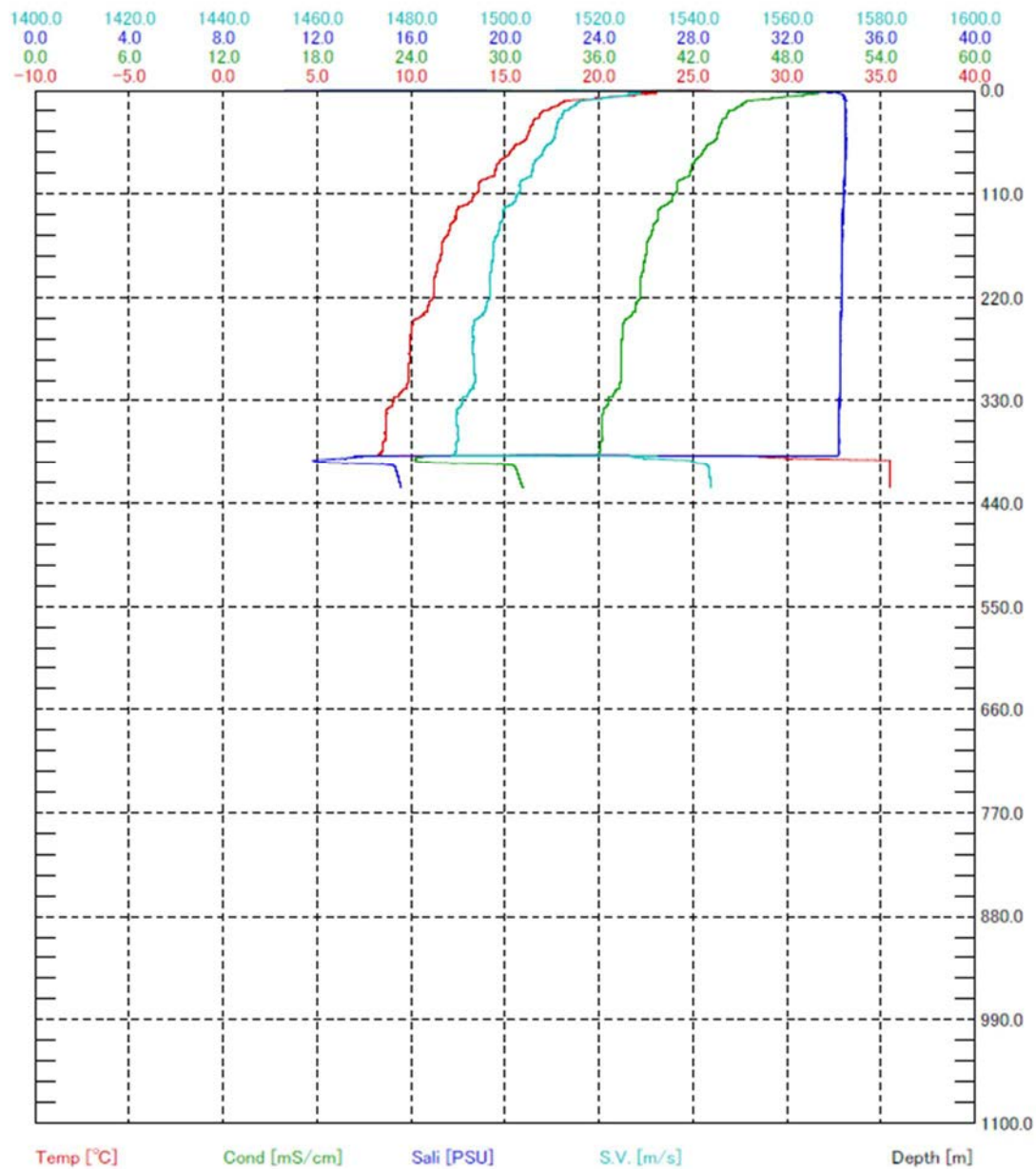
TSK XBT/XCTD-SYSTEM AL-12 Tsurumi-Seiki CO.,Ltd (Ver.1.6.4)

データベース名 : C:\AL12_Data
データ名 : CTD-202508080546
データナンバー : 504
日付 : 2025年08月08日
時刻 : 05:48:33
緯度 : 34-40.5320N
経度 : 139-05.0983E

デバイス名 : XCTD
プローブタイプ : XCTD-1N
最大深度[m] : 423.7
データ数 : 3148

BATHYプローブ : 741
BATHY処理器 : 49
深度ステップ : ALL

TSK XBT/XCTD-SYSTEM AL-12 -鉛直分布図印刷- (Ver.1.6.4)



4.2.13 Investigation of the Dynamics of Macroalgae Deposited on the Deep-sea floor Mayu Ogawa and Shinsuke Kawagucci (JAMSTEC)

Purpose:

To trace the dynamics of macroalgae deposited on the deep-sea floor.

Abstract:

Two cages containing macroalgae were deployed at a depth of 851 m off Hatsushima using the KM-ROV during dive #326 (Fig.4-2-13-1). During dive #334, we confirmed that the cages had been successfully deployed, and observed urchins and shrimp in the surrounding area (Fig.4-2-13-2).

Future Plan:

We will retrieve the deployed macroalgae cages and examine changes in the macroalgae.



Fig. 4-2-13-1 The cage containing macroalgae deployed on the deep-sea floor (dive #326).

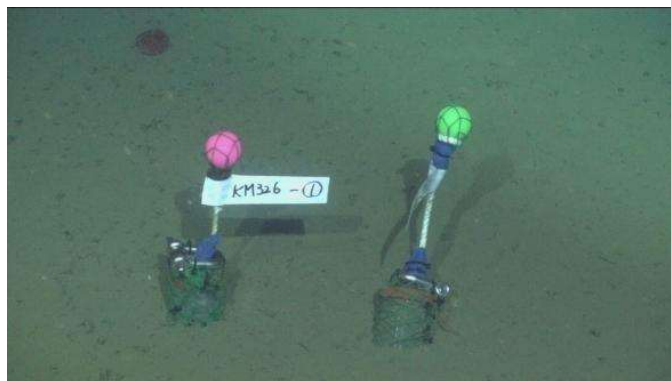


Fig. 4-2-13-2 The cage checked during dive #333.

4.2.14 Larval and juvenile fishes collected in off Aogashima and Myojin knoll

Niina Tani and Hiroshi Miyake (KUSMB)

Purpose:

Collect larval and juvenile fishes from Kuroshio.

Abstract:

The Kuroshio current transport various fish from the East China sea to the coastal areas Japan and function as nursery grounds for larval fishes. The purpose of KM25-07 is to sample larval and juvenile fishes from the off Aogashima and Myojin knoll. Those station samples can be clarified composition of fishes in Kuroshio. The samples were collected by small plankton net. A total of 30 fishes were caught and fixed 5% formalin.

Future plan:

The samples will be identified to the species level, where possible. Larval fish will be divided into preflexion, flexion, and postflexion states. And composition of fishes will be conducted about with samples from other stations where the Kuroshio current flows.



Fig.4-2-14-1 Plankton net



Fig.4-2-14-2 Fishes (Myctophidae sp.)

4.2.15 Taxnomic review of Appendicularians and Vertical distribution of Appendicularians

Tatsuya Tokutake and Hiroshi Miyake (KUSMB)

Taxnomic review of Appendicularians

Purpose:

To review the current taxonomy of Appendicularians, We collect specimens by small plankton net (SPN) for morphological observation and phylogenetic analysis.

Abstract:

Collecting was conduted using SPN attached to a fishing lot from surface to bottom (Max depth 1000m) on August 10, 11, 12, 14, 15, 16 in Aogashima and Suruga bay. Appendicularians were extrtacted from samples for KM25-07 and fixed 3% formalin and 99.5% ethanol. In addition, we kept some species for observation the house.

Future plan:

Based on the collected specimens, we combined the result of morphological observation and genetics analysis to guess the evolutionary relationships of Appendicularians.



Fig.4-2-15-1 Small plankton net (SPN) attached to a fishing lot.

- Notice on Using

This cruise report is a preliminary documentation as of the end of cruise.

This report is not necessarily corrected even if there is any inaccurate description (i.e. taxonomic classifications). This report is subject to be revised without notice. Some data on this report may be raw or unprocessed. If you are going to use or refer the data on this report, it is recommended to ask the Chief Scientist for latest status.

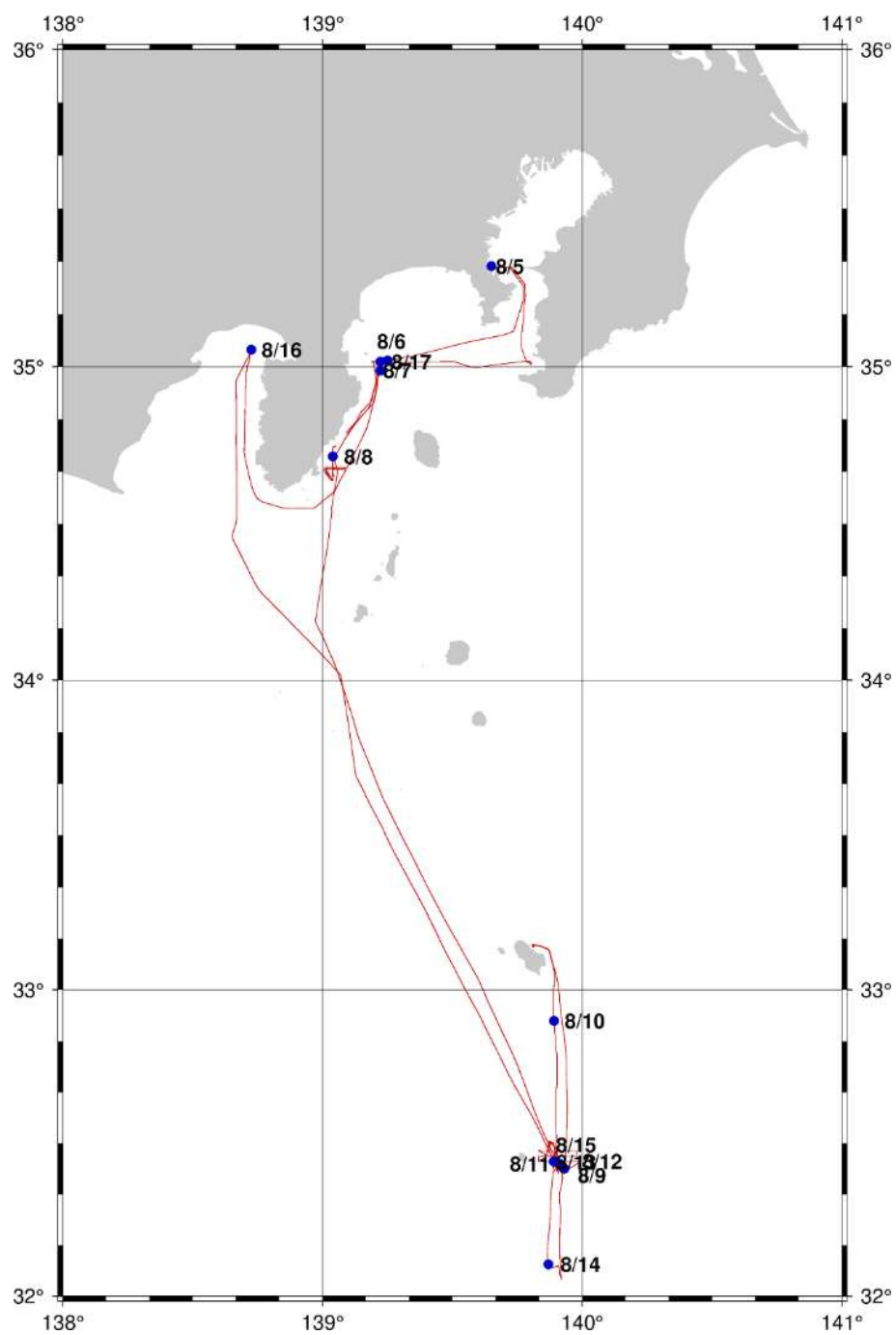
Users of information on this report are requested to submit Publication Report to JAMSTEC.

<https://www.godac.jamstec.go.jp/darwin/en/note.html#report>

E-mail: submit-rv-cruise@jamstec.go.jp

Appendix

I. Ship track

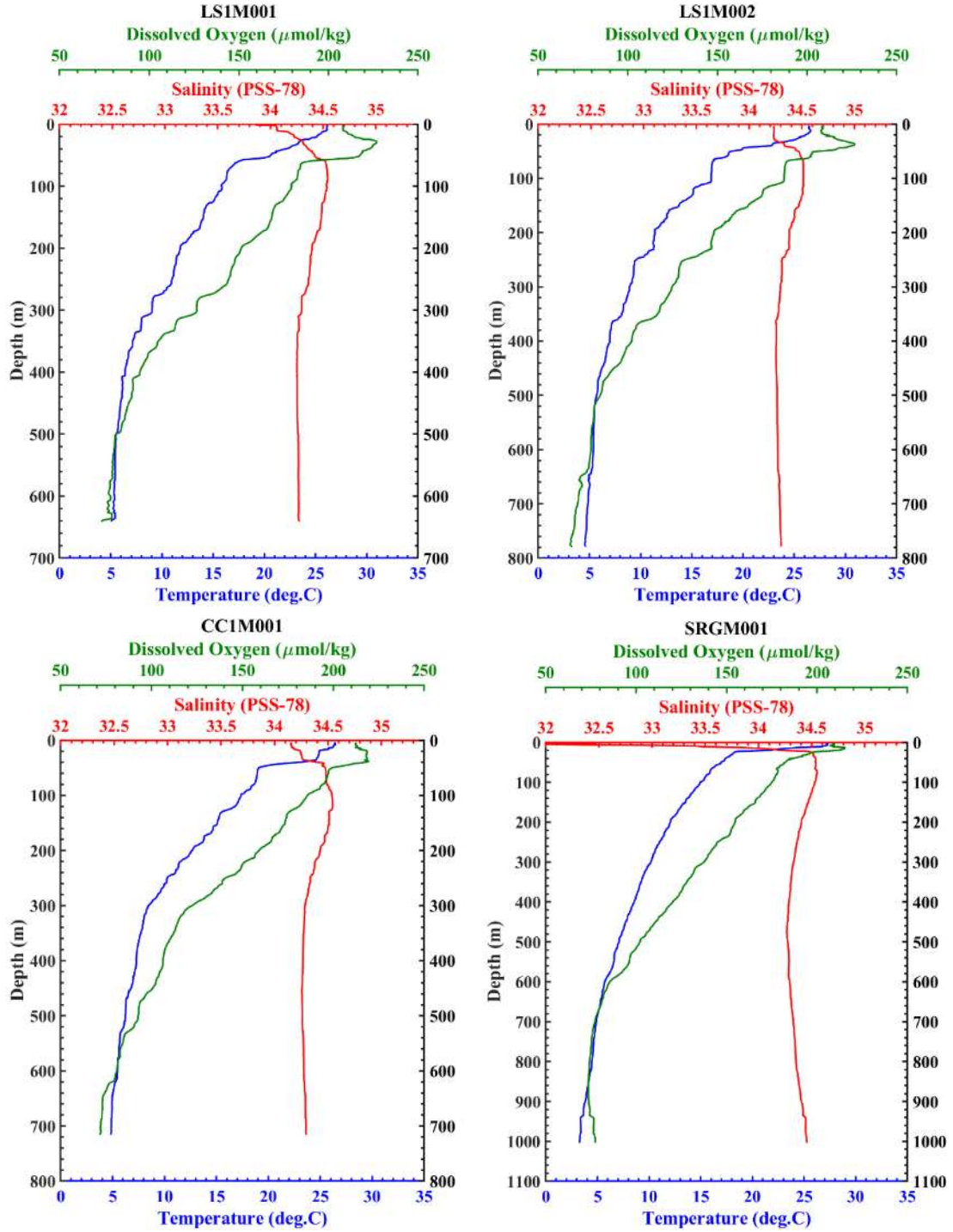


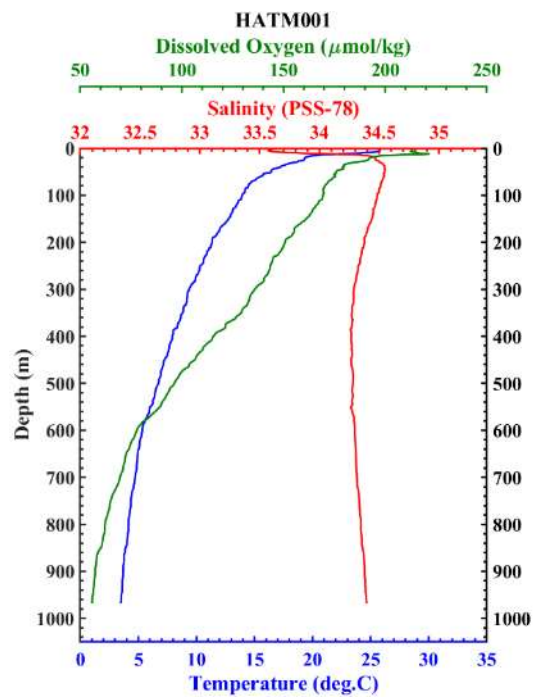
Track charts of the R/V KAIMEI research cruise KM25-07 (Aug. 6th – Aug. 18th, 2025).

II. CTD/DO profiles_ Water Sampler profile and KM-ROV

CTD water sampler profile

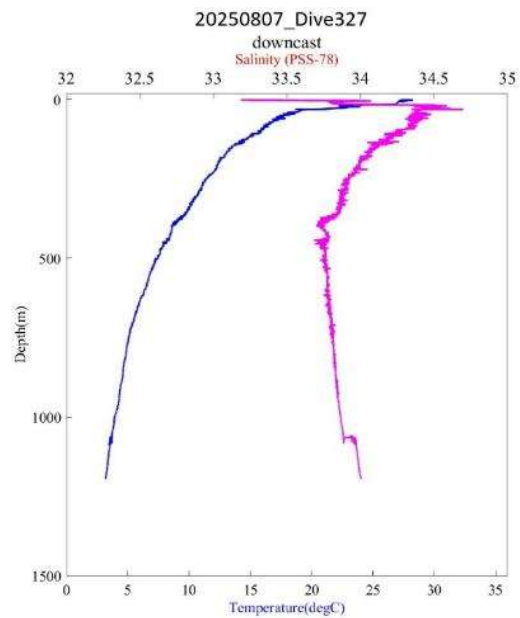
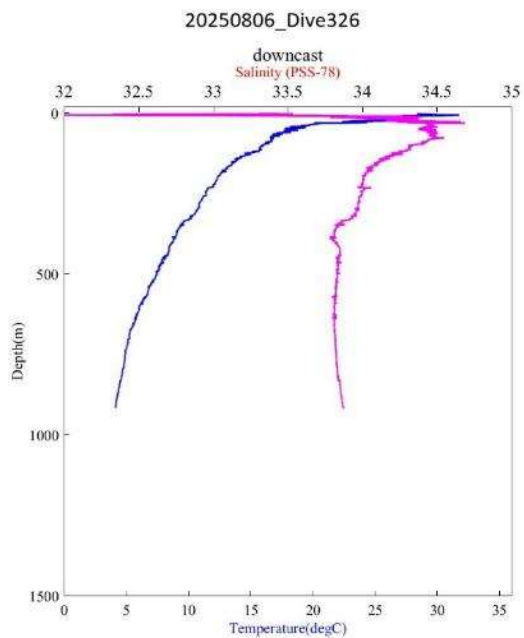
(August 9, 2025 – August 17, 2025, LS1M001 – HATM001)

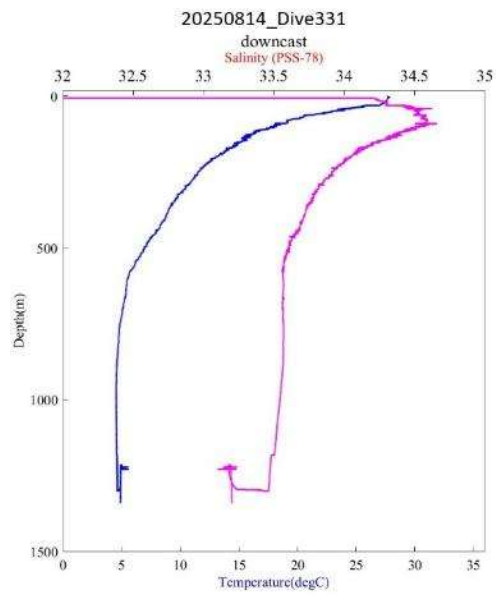
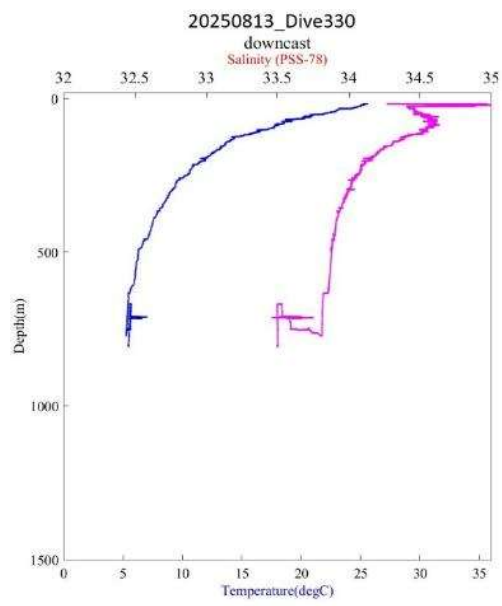
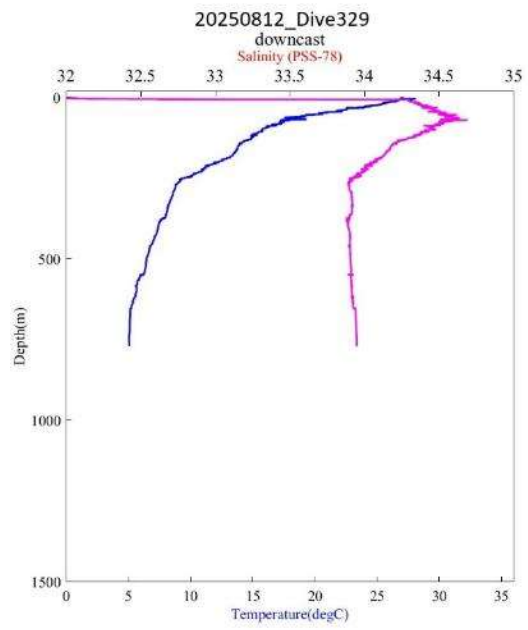
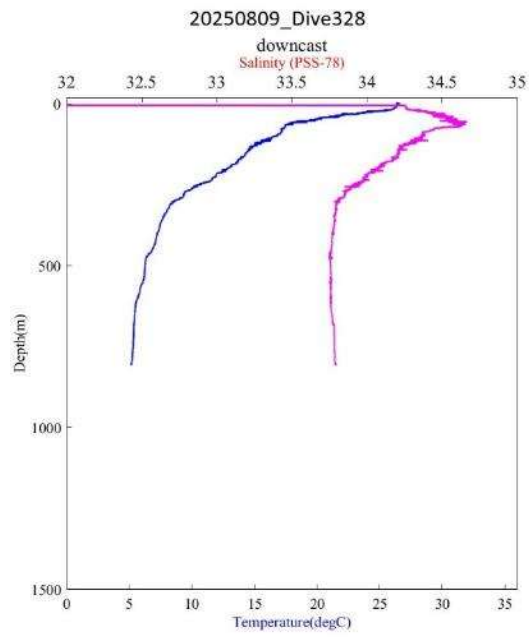


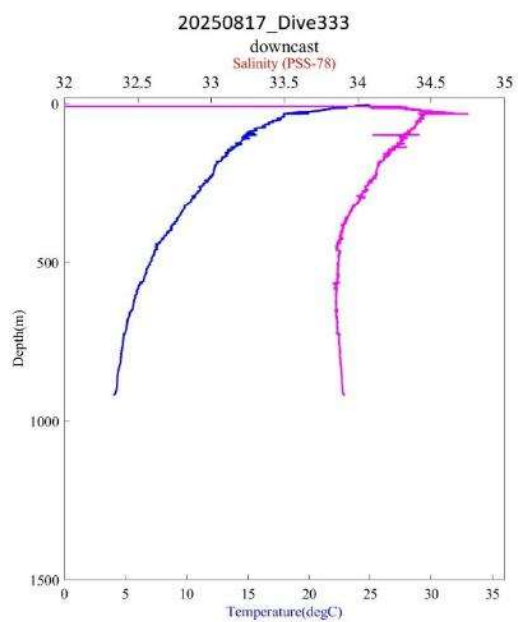
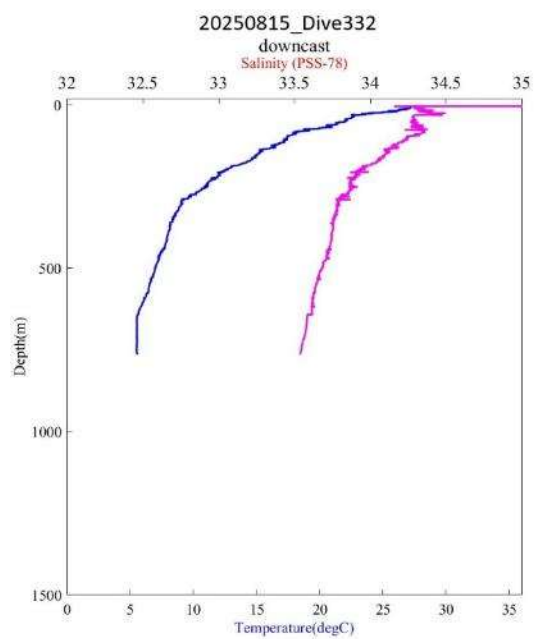


KM-ROV CTD profile

(August 6, 2025 – August 17, 2025. Dive 326 – 333)







III. XBT/XCTD profiles

XBT/XCTD measured water depth, temperature, and conductivity.

Equipment Specification

Digital Converter	TS-MK-130
Hand Launcher	LM-3A
Auto Launcher	AL-12B
Software	MK-150L (for Hand Launcher) AL-12 (for Auto Launcher)

XBT Probe

Temperature Range -2.22 to 35.55 degreeC

Accuracy ± 0.2 degreeC

Depth Range	T-5	1830m	less than 6knot (water speed)
	T-6	460m	less than 15knot (water speed)
	T-7	760m	less than 15knot (water speed)
	T-10	300m	less than 10knot (water speed)
Duration	T-5	291 second	
	T-6	70 second	
	T-7	118 second	
	T-10	48 second	

XCTD Probe

Temperature Range -2.0 to 35.0 degreeC

Accuracy ± 0.2 degreeC

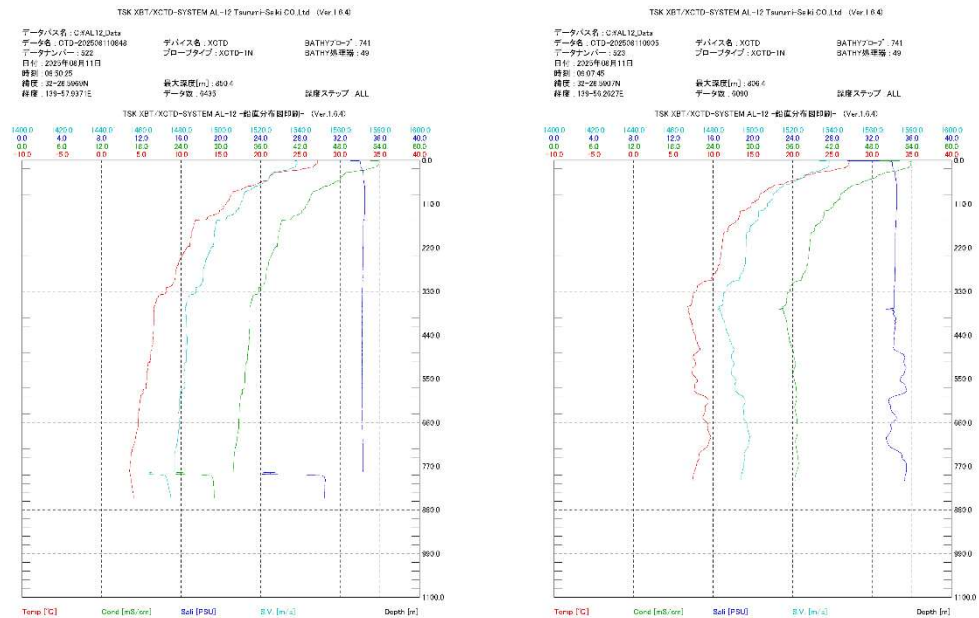
± 0.03 mS/cm (Conductivity)

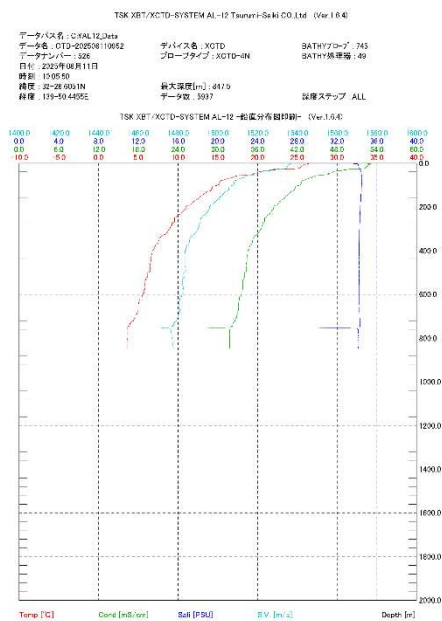
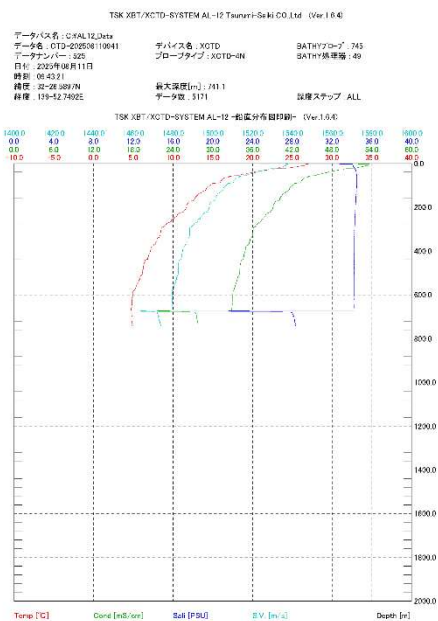
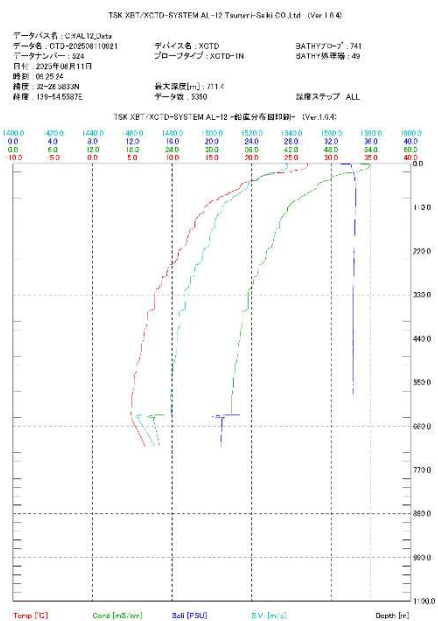
Depth Range	XCTD-1	1000m	less than 12knot (water speed)
	XCTD-2	1850m	less than 3.5knot (water speed)
	XCTD-3	1000m	less than 20knot (water speed)
	XCTD-4	1850m	less than 6knot (water speed)
Duration	XCTD-1	300 second	
	XCTD-2	600 second	
	XCTD-3	200 second	
	XCTD-4	600 second	

Table. XCTD observation stations at the Higashi-Aogashima Knoll

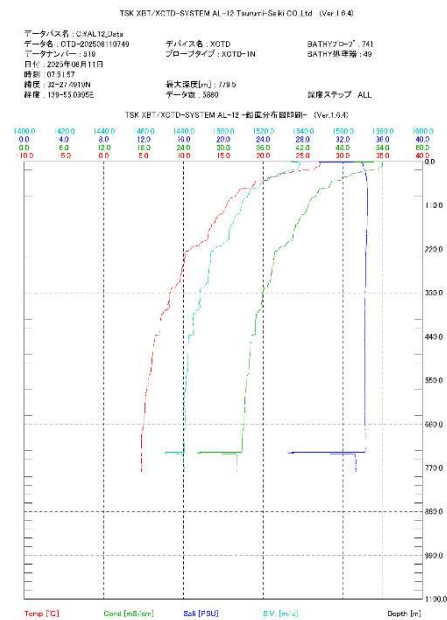
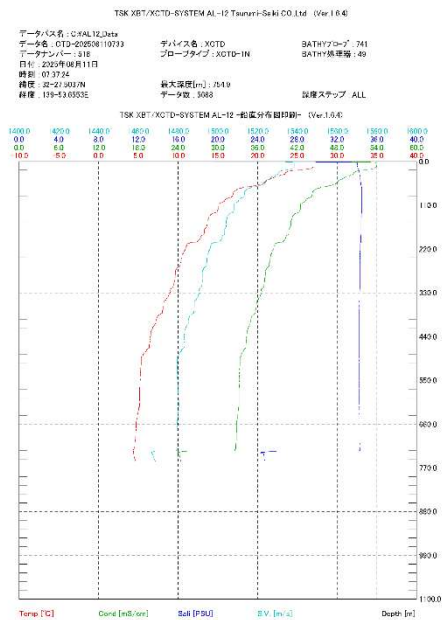
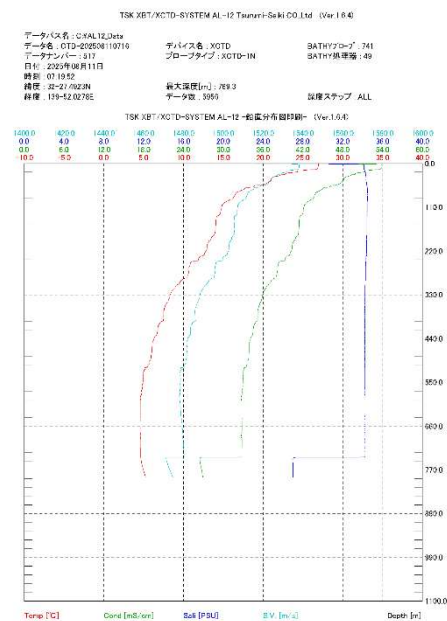
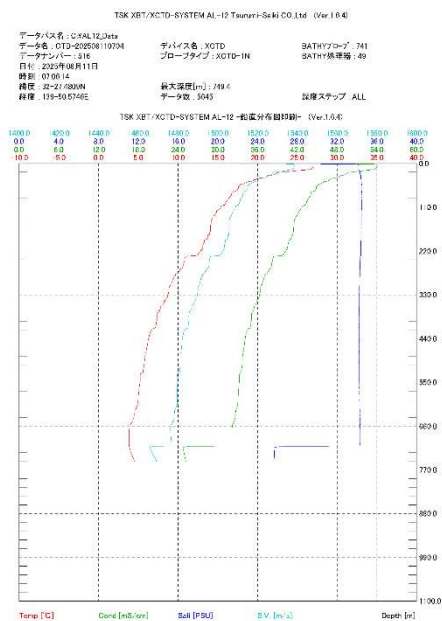
St.		Day and Time(JST)	Lat.	Long.	Depth	Probe	Serial No.
HG_LS		2025/08/11 08:15:51	32:25.7717N	139:53.9406E	814	CT1	25045815
HG_SE		2025/08/11 10:50:39	32:26.1005N	139:54.7606E	745	CT1	25045812
HG12	Southern transect	2025/08/11 14:10:47	32:26.3847N	139:58.9473E	955	CT1	25045814
HG13		2025/08/11 14:29:17	32:26.3970N	139:57.3747E	1472	CT1	25045795
HG14		2025/08/11 14:47:35	32:26.3761N	139:55.7607E	466	CT1	25045796
HG15		2025/08/11 15:01:53	32:26.4195N	139:54.3800E	786	CT1	25045797
HG16		2025/08/11 15:08:03	32:26.3705N	139:53.7874E	756	CT1	25045800
HG17		2025/08/11 15:18:50	32:26.3555N	139:52.7467E	803	CT1	25045799
HG18		2025/08/11 15:33:42	32:26.3885N	139:51.3643E	709	CT1	25045798
HG19		2025/08/11 15:43:47	32:26.3944N	139:50.4446E	674	CT1	25045818
HG06	Central transect	2025/08/11 16:06:14	32:27.4809N	139:50.5746E	724	CT1	25045801
HG07		2025/08/11 16:19:52	32:27.4923N	139:52.0278E	770	CT1	25045817
HG08		2025/08/11 16:37:24	32:27.5037N	139:53.6553E	733	CT1	25045816
HG09		2025/08/11 16:51:57	32:27.4919N	139:55.0395E	737	CT1	25045810
HG10		2025/08/11 17:06:52	32:27.5035N	139:56.4532E	601	CT1	25045813
HG11		2025/08/11 17:23:39	32:27.4937N	139:58.0429E	795	CT1	25045807
HG01	Northern transect	2025/08/11 17:50:25	32:28.5969N	139:57.9371E	786	CT1	25045809
HG02		2025/08/11 18:07:45	32:28.5907N	139:56.2627E	380	CT1	25045808
HG03		2025/08/11 18:25:24	32:28.5833N	139:54.5587E	637	CT1	25045811
HG04		2025/08/11 18:43:21	32:28.5897N	139:52.7492E	666	CT4	25056540
HG05		2025/08/11 19:05:50	32:28.6051N	139:50.4455E	761	CT4	25056541
HG_CC		2025/08/12 12:15:38	32:26.4584N	139:53.3869E	778	CT4	25056545

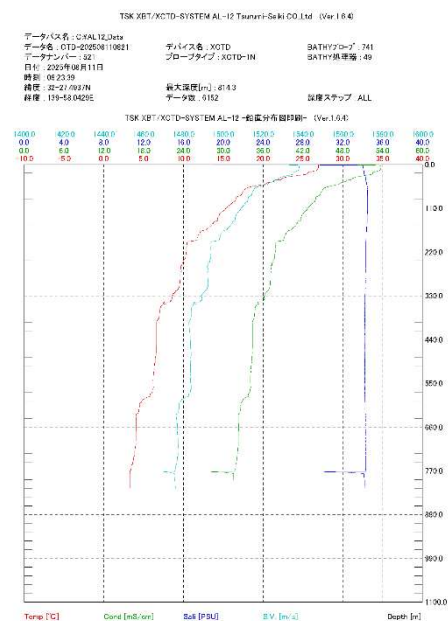
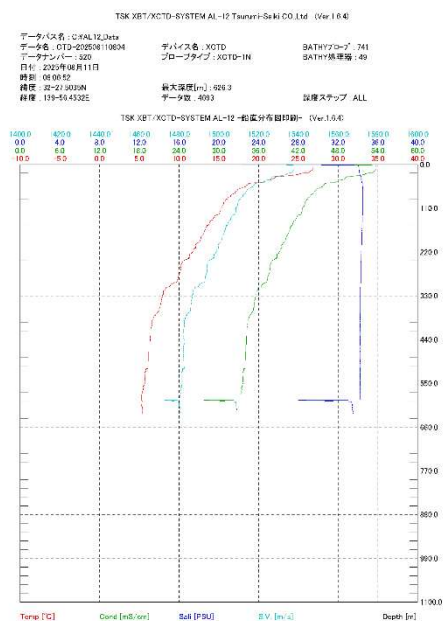
Northern transect



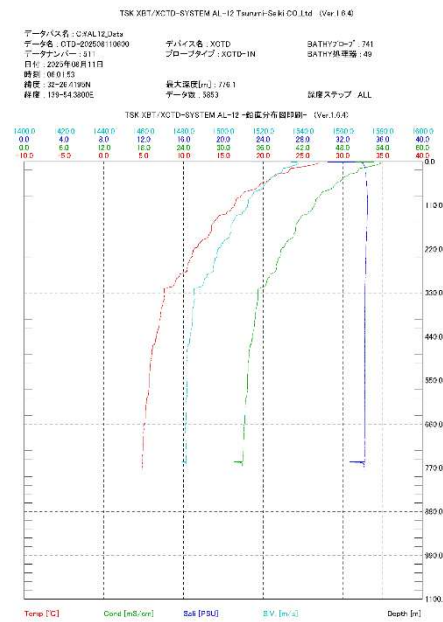
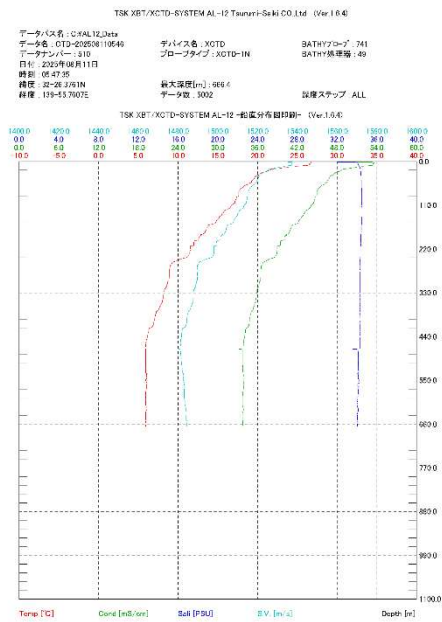
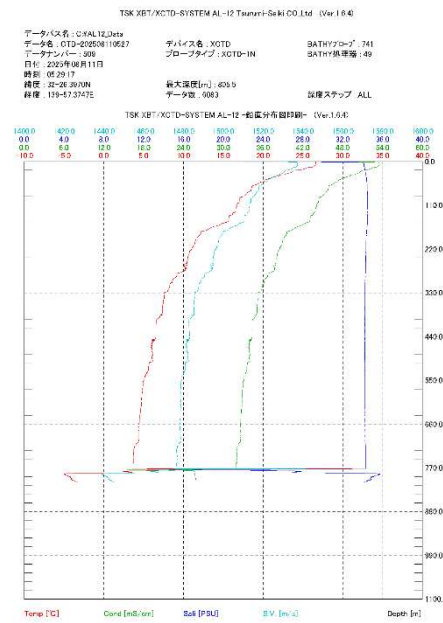
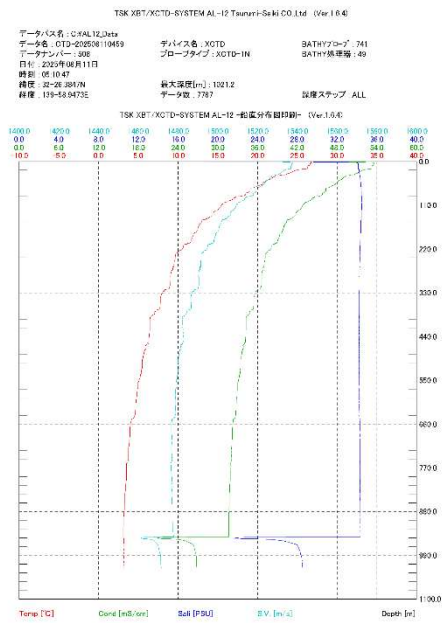


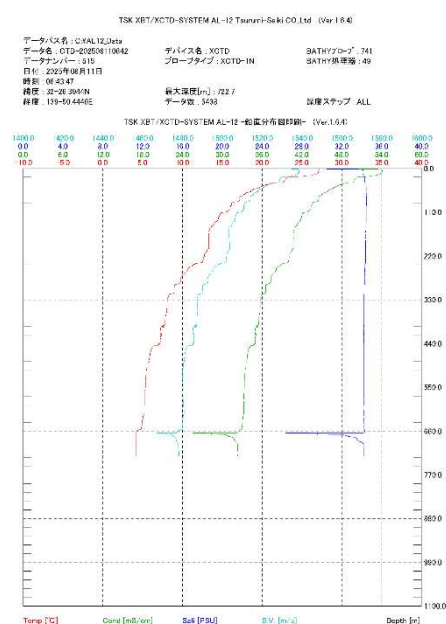
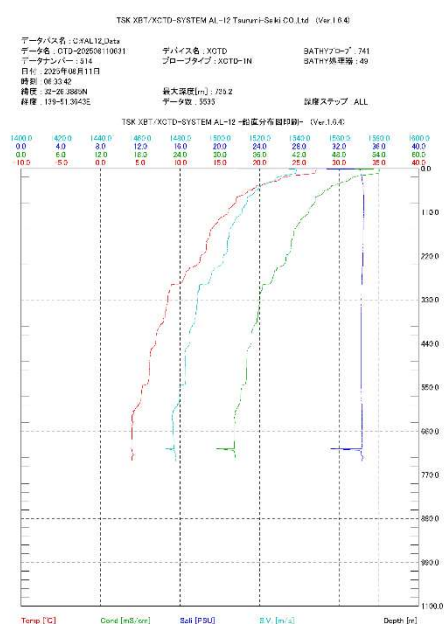
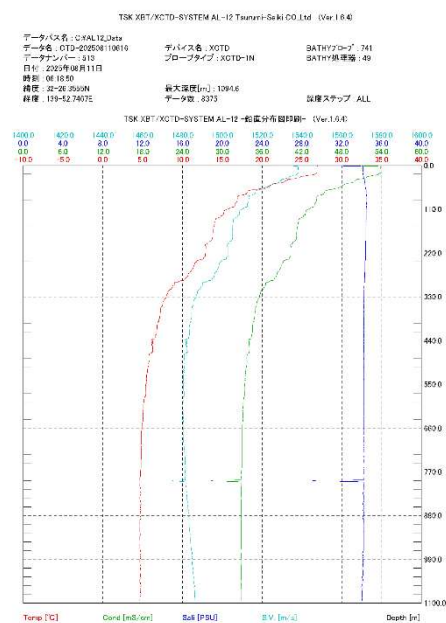
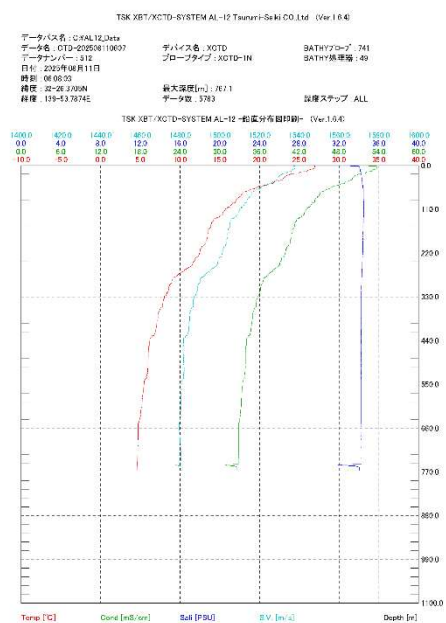
Central transect





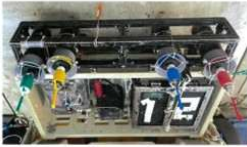
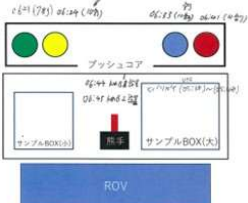
Southern transect





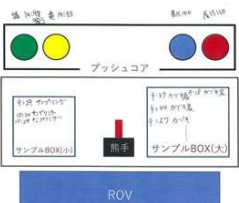
IV. KM-ROV basket information for each dive

Dive #326 (2025/08/06)

ROV

Dive #327 (2025/08/07)

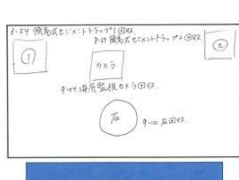
ROV

Dive #328 (2025/08/09)



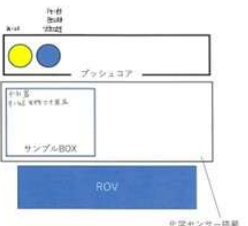

ROV

Dive #329 (2025/08/12)

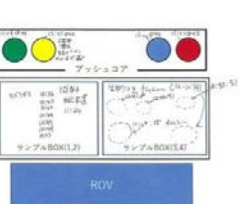
ROV

Dive #330 (2025/08/13)

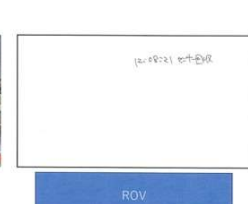
ROV

Dive #331 (2025/08/14)

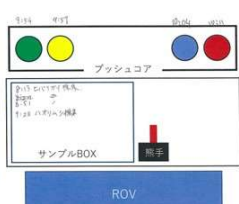
ROV

Dive #332 (2025/08/15)

ROV

Dive #333 (2025/08/17)

ROV

V. Dive Log (Dive326 – Dive333)

<Dive 326>

Dive Log of KM-ROV Dive #326										LOG	Area Name: 相模湾 (初島沖)		2025/08/06					
シートのコピー																		
Time [UTC]	Time [Local]	Vehicle Dep.[m]	Vehicle Pos. Lat		Vehicle Pos. Lon		TMS Dep.[m]	TMS Pos. Lat		TMS Pos. Lon		Vehicle Alt.[m]	Heading (degree)	Description	Remarks			
04:10:37	13:10:37	0	34	- 55.2162	N	138	- 39.1761	E	0	34	- 55.2172	N	138	- 39.1750	E		吊り上げ	
04:14:56	13:14:56	0	34	- 55.2162	N	138	- 39.1761	E	0	34	- 55.2172	N	138	- 39.1750	E		振り出し	
04:17:03	13:17:03	0	34	- 55.2162	N	138	- 39.1761	E	0	34	- 55.2172	N	138	- 39.1750	E		着水	
04:18:41	13:18:41	27	35	- 00.9381	N	139	- 13.4054	E	0	35	- 00.9094	N	139	- 13.3917	E		RamaCam電源ON (48V)	
		879	35	- 00.9348	N	139	- 13.4101	E	0	35	- 00.9357	N	139	- 13.4051	E		TMS分離	
04:43:00	13:43:00																RamaCam OFF	
04:46:30	13:46:30	914	35	- 00.9354	N	139	- 13.4038	E	832	35	- 00.9374	N	139	- 13.4023	E	6.0	274	海況確認
04:48:39	13:48:39	918	35	- 00.9370	N	139	- 13.3974	E	832	35	- 00.9368	N	139	- 13.4023	E	0.0	353	着底報告 (底質: 岩)
04:52:28	13:52:28	918	35	- 00.9329	N	139	- 13.3986	E	819	35	- 00.9361	N	139	- 13.4034	E	2.1	354	TMS深度調整中
04:53:45	13:53:45	918	35	- 00.9371	N	139	- 13.3991	E	806	35	- 00.9367	N	139	- 13.4041	E			RamaCam ON
04:55:40	13:55:40	918	35	- 00.9376	N	139	- 13.3973	E	787	35	- 00.9370	N	139	- 13.4007	E			アンビカルケーブル巻き取り停止
04:56:25	13:56:25	917	35	- 00.9372	N	139	- 13.3970	E	788	35	- 00.9374	N	139	- 13.3986	E	2.3	326	ビークル移動開始
05:00:29	14:00:29	916	35	- 00.9377	N	139	- 13.3855	E	787	35	- 00.9395	N	139	- 13.3869	E	1.1	322	着底
05:01:49	14:01:49	916	35	- 00.9347	N	139	- 13.3862	E	787	35	- 00.9389	N	139	- 13.3868	E			浮上, 向きを変える
05:03:43	14:03:43	916	35	- 00.9369	N	139	- 13.3858	E	787	35	- 00.9401	N	139	- 13.3868	E	1.0	320	着底し, 観察
05:05:39	14:05:39	916	35	- 00.9374	N	139	- 13.3848	E	787	35	- 00.9393	N	139	- 13.3863	E			浮上し, 左側へ回り込む
05:12:22	14:12:22	915	35	- 00.9382	N	139	- 13.3858	E	787	35	- 00.9399	N	139	- 13.3868	E	1.0	321	着底
05:12:59	14:12:59	914	35	- 00.9381	N	139	- 13.3817	E	787	35	- 00.9398	N	139	- 13.3866	E			スラップガンで近づけ, 大きさ確認
05:15:26	14:15:26	914	35	- 00.9379	N	139	- 13.3797	E	787	35	- 00.9392	N	139	- 13.3867	E	1.1	321	スラップガンでセバリガイをサンプリング
05:17:47	14:17:47	914	35	- 00.9381	N	139	- 13.3846	E	787	35	- 00.9397	N	139	- 13.3871	E	1.0	320	スラップガンでセバリガイをサンプリング
05:25:29	14:25:29	914	35	- 00.9381	N	139	- 13.3843	E	787	35	- 00.9391	N	139	- 13.3858	E			サンプリング終了
05:29:04	14:29:04	918	35	- 00.9398	N	139	- 13.3835	E	787	35	- 00.9398	N	139	- 13.3862	E	0.8	350	セバリガイのサンプリングを試みる
05:30:32	14:30:32	914	35	- 00.9381	N	139	- 13.3845	E	787	35	- 00.9393	N	139	- 13.3865	E	0.8	351	スラップガンでセバリガイをサンプリング
05:33:34	14:33:34	914	35	- 00.9389	N	139	- 13.3847	E	787	35	- 00.9395	N	139	- 13.3867	E			スラップガンの噴出口が弱くなったためBOXサンプリングに変更
05:38:12	14:38:12	921	35	- 00.9453	N	139	- 13.3819	E	787	35	- 00.9401	N	139	- 13.3871	E	1.3	352	マニピュレーターでセバリガイをBOX大にサンプリング
05:48:46	14:48:46	914	35	- 00.9384	N	139	- 13.3856	E	787	35	- 00.9399	N	139	- 13.3869	E			サンプリング終了
05:52:56	14:52:56	914	35	- 00.9389	N	139	- 13.3855	E	787	35	- 00.9402	N	139	- 13.3868	E			BOX大閉じる
05:55:52	14:55:52	914	35	- 00.9403	N	139	- 13.3838	E	787	35	- 00.9397	N	139	- 13.3867	E			浮上, 航走再開, 観察開始
06:01:38	15:01:38	879	35	- 00.9466	N	139	- 13.3614	E	746	35	- 00.9440	N	139	- 13.3699	E			複数の魚類を確認
06:08:43	15:08:43	859	35	- 00.9553	N	139	- 13.3345	E	730	35	- 00.9504	N	139	- 13.3531	E			メンダコ確認
06:11:08	15:11:08	859	35	- 00.9575	N	139	- 13.3337	E	730	35	- 00.9526	N	139	- 13.3490	E	0.4	294	着底
06:12:28	15:12:28	859	35	- 00.9582	N	139	- 13.3346	E	730	35	- 00.9524	N	139	- 13.3494	E	0.4	295	スラップガンでメンダコをサンプリング
06:15:08	15:15:08	859	35	- 00.9561	N	139	- 13.3330	E	730	35	- 00.9514	N	139	- 13.3459	E			スラップガンに録画
06:17:08	15:17:08	859	35	- 00.9562	N	139	- 13.3319	E	730	35	- 00.9518	N	139	- 13.3427	E			浮上, 航走再開, 観察開始
		858	35	- 00.9601	N	139	- 13.3324	E	730	35	- 00.9511	N	139	- 13.3426	E	0.0	292	着底
06:21:15	15:21:15	858	35	- 00.9598	N	139	- 13.3328	E	730	35	- 00.9515	N	139	- 13.3424	E			右手で録コアつかむ
06:21:17	15:21:17	858	35	- 00.9598	N	139	- 13.3328	E	730	35	- 00.9515	N	139	- 13.3424	E	0.0	293	緑採泥
06:24:28	15:24:28	858	35	- 00.9605	N	139	- 13.3330	E	729	35	- 00.9513	N	139	- 13.3418	E	0.0	294	黄色採泥
06:29:45	15:29:45	855	35	- 00.9646	N	139	- 13.3277	E	730	35	- 00.9530	N	139	- 13.3413	E	0.0	293	着底
06:31:26	15:31:26	855	35	- 00.9641	N	139	- 13.3277	E	730	35	- 00.9535	N	139	- 13.3383	E			左手で青コアつかむ
06:33:53	15:33:53	855	35	- 00.9634	N	139	- 13.3283	E	730	35	- 00.9568	N	139	- 13.3329	E	0.0	293	青採泥
06:36:06	15:36:06	855	35	- 00.9623	N	139	- 13.3295	E	730	35	- 00.9591	N	139	- 13.3279	E			青採泥終了
06:36:42	15:36:42	855	35	- 00.9635	N	139	- 13.3282	E	730	35	- 00.9580	N	139	- 13.3261	E			浮上, 次の採泥のための移動開始
06:38:13	15:38:13	852	35	- 00.9668	N	139	- 13.3217	E	730	35	- 00.9598	N	139	- 13.3253	E	0.0	294	着底
06:39:17	15:39:17	853	35	- 00.9668	N	139	- 13.3203	E	729	35	- 00.9598	N	139	- 13.3250	E			左手で赤コアつかむ
06:41:08	15:41:08	852	35	- 00.9671	N	139	- 13.3215	E	729	35	- 00.9599	N	139	- 13.3266	E	0.0	292	赤採泥
06:43:08	15:43:08	853	35	- 00.9676	N	139	- 13.3210	E	729	35	- 00.9601	N	139	- 13.3249	E			赤採泥終了
06:44:47	15:44:47	852	35	- 00.9681	N	139	- 13.3204	E	729	35	- 00.9597	N	139	- 13.3256	E	0.0	292	コンプ1設置
06:45:51	15:45:51	853	35	- 00.9665	N	139	- 13.3204	E	730	35	- 00.9596	N	139	- 13.3249	E	0.0	292	コンプ2設置
06:47:15	15:47:15	853	35	- 00.9659	N	139	- 13.3225	E	729	35	- 00.9594	N	139	- 13.3261	E			コンプ設置完了
06:48:46	15:48:46	852	35	- 00.9663	N	139	- 13.3206	E	730	35	- 00.9590	N	139	- 13.3261	E			浮上
06:50:30	15:50:30	852	35	- 00.9686	N	139	- 13.3218	E	730	35	- 00.9600	N	139	- 13.3254	E			コンプ撮影
06:53:15	15:53:15	852	35	- 00.9675	N	139	- 13.3228	E	729	35	- 00.9595	N	139	- 13.3266	E			スラップガンの蓋閉める
06:56:17	15:56:17	851	35	- 00.9678	N	139	- 13.3219	E	729	35	- 00.9600	N	139	- 13.3248	E			浮上開始
07:02:58	16:02:58	730	35	- 00.9601	N	139	- 13.3266	E	727	35	- 00.9599	N	139	- 13.3249	E			ビークル結合
07:05:42	16:05:42	730	35	- 00.9576	N	139	- 13.3263	E	726	35	- 00.9581	N	139	- 13.3255	E			巻き上げ開始
07:24:49	16:24:49	66	35	- 00.9597	N	139	- 13.3254	E	62	35	- 00.9593	N	139	- 13.3256	E			RamaCam停止
07:26:23	16:26:23	36	35	- 00.9608	N	139	- 13.3258	E	30	35	- 00.9389	N	139	- 13.3133	E			(48V OFF)(RamaCam)
07:27:40	16:27:40	25	35	- 00.9559	N	139	- 13.3236	E	30	35	- 00.9336	N	139	- 13.3102	E			回収作業開始
07:30:23	16:30:23	35	35	- 00.9606	N	139	- 13.3258	E	30	35	- 00.9350	N	139	- 13.3112	E	254		海面到着
07:32:14	16:32:14	35	35	- 00.9606	N	139	- 13.3258	E	30	35	- 00.9350	N	139	- 13.3112	E			船上へ揚収

<Dive 327>

Dive Log of KM-ROV Dive #327										LOG	Area Name; 相模湾 (初島沖)	20250807
Time [UTC]	Time [Local]	Vehicle Dep. [m]	Vehicle Pos. Lat	Vehicle Pos. Lon	TMS Dep. [m]	TMS Pos. Lat	TMS Pos. Lon	Vehicle Alt [m]	Heading [degree]	Description	Remarks	
23:04:45	08:04:45	0	35 - 00.9606 N	139 - 13.3258 E	0	35 - 00.9350 N	139 - 13.3112 E			ウィンチ繰り出し		
23:10:43	08:10:43	0	35 - 00.9606 N	139 - 13.3258 E	0	35 - 00.9350 N	139 - 13.3112 E			振り出し		
23:11:14	08:11:14	0	35 - 00.9606 N	139 - 13.3258 E	0	35 - 00.9350 N	139 - 13.3112 E			着水		
23:12:27	08:12:27	0	35 - 00.9606 N	139 - 13.3258 E	0	35 - 00.9350 N	139 - 13.3112 E			Ramcam on		
23:28:14	08:28:14	594	34 - 59.2652 N	139 - 13.3811 E	593	34 - 59.2267 N	139 - 13.3505 E			Ramcam off		
23:32:04	08:32:04	755	34 - 59.2617 N	139 - 13.3845 E	0	34 - 59.2568 N	139 - 13.3762 E			カタクラグ		
23:36:31	08:36:31	943	34 - 59.2645 N	139 - 13.3827 E	941	34 - 59.2665 N	139 - 13.3822 E			くらげ		
23:40:30	08:40:30	959	34 - 59.2608 N	139 - 13.3853 E	953	34 - 59.2645 N	139 - 13.3817 E			TMS分離		
23:42:52	08:42:52	1048	34 - 59.2607 N	139 - 13.3937 E	0	34 - 59.2653 N	139 - 13.3839 E			ヒゲクラグ		
23:44:10	08:44:10	1080	34 - 59.2580 N	139 - 13.3907 E	0	34 - 59.2649 N	139 - 13.3814 E	2.4	255	海底視認		
23:44:57	08:44:57	1086	34 - 59.2596 N	139 - 13.3909 E	0	34 - 59.2652 N	139 - 13.3813 E	2.3	255	着底		
23:46:25	08:46:25	1085	34 - 59.2604 N	139 - 13.3902 E	952	34 - 59.2660 N	139 - 13.3819 E	17.0	255	コンボウアナゴ		
23:51:06	08:51:06	1079	34 - 59.2593 N	139 - 13.3727 E	952	34 - 59.2647 N	139 - 13.3812 E	1.9	310	ヒゲクラグ		
23:55:42	08:55:42	1078	34 - 59.2540 N	139 - 13.3809 E	952	34 - 59.2645 N	139 - 13.3835 E	1.6	210	ヒゲクラグ		
23:56:05	08:56:05	1077	34 - 59.2544 N	139 - 13.3761 E	952	34 - 59.2656 N	139 - 13.3840 E	1.6	211	ヒゲクラグ		
23:59:17	08:59:17	1069	34 - 59.2501 N	139 - 13.3729 E	938	34 - 59.2647 N	139 - 13.3822 E	3.5	211	カザギシンカイヒバリガイ視認		
00:00:15	09:00:15	1069	34 - 59.2490 N	139 - 13.3734 E	938	34 - 59.2640 N	139 - 13.3838 E	3.6	246	右旋開始		
00:09:38	09:09:38	1067	34 - 59.2484 N	139 - 13.3638 E	938	34 - 59.2642 N	139 - 13.3814 E	0.7	157	着底		
00:14:16	09:14:16	1067	34 - 59.2509 N	139 - 13.3651 E	938	34 - 59.2652 N	139 - 13.3825 E	0.8	157	岩ごとのサンプリングを試み中		
00:18:18	09:18:18	1067	34 - 59.2504 N	139 - 13.3674 E	938	34 - 59.2639 N	139 - 13.3835 E	0.8	153	ボックス大にサンプリング		
00:29:27	09:29:27	1066	34 - 59.2483 N	139 - 13.3629 E	938	34 - 59.2632 N	139 - 13.3808 E	1.9	166	貝をつぶしてボックス小へサンプリング		
00:37:21	09:37:21	1067	34 - 59.2493 N	139 - 13.3682 E	0	34 - 59.2638 N	139 - 13.3820 E	1.3	144	ボックス大にサンプリング		
00:44:53	09:44:53	1066	34 - 59.2493 N	139 - 13.3639 E	938	34 - 59.2615 N	139 - 13.3825 E	0.9	121	ボックス大にサンプリング		
00:57:40	09:57:40	1066	34 - 59.2504 N	139 - 13.3561 E	938	34 - 59.2614 N	139 - 13.3857 E	0.6	165	ボックス大にサンプリング		
01:01:16	10:01:16	1067	34 - 59.2515 N	139 - 13.3689 E	939	34 - 59.2605 N	139 - 13.3833 E	0.5	163	スラップガンでサンプリング		
01:09:42	10:09:42	1067	34 - 59.2485 N	139 - 13.3622 E	938	34 - 59.2576 N	139 - 13.3855 E	0.0	165	ヒゲクラグ		
01:20:09	10:20:09	1067	34 - 59.2514 N	139 - 13.3605 E	938	34 - 59.2593 N	139 - 13.3851 E	0.0	140	貝をつぶしてボックス小へサンプリング		
01:29:09	10:29:09	1067	34 - 59.2502 N	139 - 13.3669 E	938	34 - 59.2584 N	139 - 13.3858 E	0.0	140	貝をボックス小へサンプリング		
01:32:16	10:32:16	1066	34 - 59.2502 N	139 - 13.3682 E	938	34 - 59.2578 N	139 - 13.3867 E	0.0	138	ヒバリガイサンプリング終了		
01:37:05	10:37:05	1065	34 - 59.2493 N	139 - 13.3652 E	938	34 - 59.2557 N	139 - 13.3850 E	1.1	139	マッピング作業開始		
01:43:49	10:43:49	1064	34 - 59.2462 N	139 - 13.3628 E	938	34 - 59.2536 N	139 - 13.3837 E	1.6	193	フカシクラグ		
01:47:58	10:47:58	1066	34 - 59.2516 N	139 - 13.3591 E	938	34 - 59.2549 N	139 - 13.3842 E	3.2	160	ヒゲクラグ		
01:48:43	10:48:43	1067	34 - 59.2551 N	139 - 13.3671 E	938	34 - 59.2560 N	139 - 13.3852 E			ヒゲクラグ		
01:50:29	10:50:29	1066	34 - 59.2582 N	139 - 13.3652 E	938	34 - 59.2548 N	139 - 13.3855 E			ヒゲクラグ		
01:52:00	10:52:00	1067	34 - 59.2618 N	139 - 13.3669 E	938	34 - 59.2554 N	139 - 13.3866 E			ヒゲクラグ		
01:53:03	10:53:03	1067	34 - 59.2624 N	139 - 13.3636 E	938	34 - 59.2552 N	139 - 13.3861 E			ヒゲクラグ?		
01:58:37	10:58:37	1079	34 - 59.2633 N	139 - 13.3632 E	938	34 - 59.2544 N	139 - 13.3842 E	2.3	180	航走開始		
02:07:08	11:07:08	1066	34 - 59.2576 N	139 - 13.3644 E	938	34 - 59.2547 N	139 - 13.3868 E	0.7	012	ヒゲクラグ		
02:09:05	11:09:05	1066	34 - 59.2617 N	139 - 13.3720 E	938	34 - 59.2565 N	139 - 13.3857 E	13.3	181	ヒゲクラグ		
02:09:36	11:09:36	1070	34 - 59.2624 N	139 - 13.3722 E	938	34 - 59.2566 N	139 - 13.3853 E	7.8	182	ヒゲクラグ		
02:12:08	11:12:08	1074	34 - 59.2567 N	139 - 13.3705 E	938	34 - 59.2562 N	139 - 13.3844 E	2.2	181	クロクラグ		
02:17:27	11:17:27	1068	34 - 59.2590 N	139 - 13.3768 E	938	34 - 59.2556 N	139 - 13.3845 E	13.0	183	ヒゲクラグ		
02:18:48	11:18:48	1077	34 - 59.2567 N	139 - 13.3790 E	938	34 - 59.2545 N	139 - 13.3848 E	2.7	181	海底視認		
02:19:26	11:19:26	1078	34 - 59.2555 N	139 - 13.3771 E	938	34 - 59.2551 N	139 - 13.3873 E	2.2	180	ヒゲクラグ		
02:22:15	11:22:15	1070	34 - 59.2498 N	139 - 13.3783 E	938	34 - 59.2553 N	139 - 13.3866 E	2.1	181	ヒゲクラグ		
02:23:34	11:23:34	1065	34 - 59.2447 N	139 - 13.3792 E	938	34 - 59.2538 N	139 - 13.3851 E	2.2	180	ヒゲクラグ		
02:26:13	11:26:13	1067	34 - 59.2460 N	139 - 13.3833 E	938	34 - 59.2561 N	139 - 13.3858 E	2.1	088	潜航変更		
02:28:51	11:28:51	1071	34 - 59.2490 N	139 - 13.3841 E	938	34 - 59.2568 N	139 - 13.3850 E	1.4	100	6Kマーカ-視認		
02:34:33	11:34:33	1071	34 - 59.2442 N	139 - 13.3856 E	938	34 - 59.2561 N	139 - 13.3859 E	1.2	034	潜航変更		
02:35:09	11:35:09	1071	34 - 59.2469 N	139 - 13.3814 E	938	34 - 59.2559 N	139 - 13.3840 E	1.4	360	航走開始		
02:38:43	11:38:43	1096	34 - 59.2503 N	139 - 13.3931 E	938	34 - 59.2570 N	139 - 13.3846 E	2.3	181	海底視認		
02:48:01	11:48:01	1067	34 - 59.2464 N	139 - 13.3842 E	938	34 - 59.2553 N	139 - 13.3839 E	7.7	360	ヒゲクラグ		
02:49:16	11:49:16	1067	34 - 59.2459 N	139 - 13.3864 E	938	34 - 59.2563 N	139 - 13.3841 E	13.6	360	ヒゲクラグ		
02:50:16	11:50:16	1067	34 - 59.2505 N	139 - 13.3870 E	938	34 - 59.2579 N	139 - 13.3838 E	11.6	180	潜航変更		
02:50:51	11:50:51	1070	34 - 59.2537 N	139 - 13.3860 E	938	34 - 59.2558 N	139 - 13.3847 E	8.7	178	ヒゲクラグ		
02:51:12	11:51:12	1071	34 - 59.2511 N	139 - 13.3885 E	938	34 - 59.2572 N	139 - 13.3848 E	1.0	181	ヒゲクラグ 海底のメバル科確認		
02:53:54	11:53:54	1077	34 - 59.2523 N	139 - 13.3883 E	938	34 - 59.2556 N	139 - 13.3853 E	2.2	182	ヒゲクラグ		
02:54:45	11:54:45	1074	34 - 59.2511 N	139 - 13.3885 E	938	34 - 59.2571 N	139 - 13.3855 E	1.1	181	ヒゲクラグ		
02:58:00	11:58:00	1066	34 - 59.2402 N	139 - 13.3889 E	938	34 - 59.2565 N	139 - 13.3857 E	3.2	180	コビウセン		
03:16:59	12:16:59	1066	34 - 59.2370 N	139 - 13.3899 E	938	34 - 59.2553 N	139 - 13.3857 E	0.2	180	1065m停止		
03:28:03	12:28:03	1073	34 - 59.2459 N	139 - 13.3966 E	938	34 - 59.2582 N	139 - 13.3877 E	1.3	181	ロープ視認		
03:34:56	12:34:56	1073	34 - 59.2445 N	139 - 13.3935 E	938	34 - 59.2563 N	139 - 13.3864 E	1.3	180	ヒゲクラグ		
03:38:16	12:38:16	1072	34 - 59.2437 N	139 - 13.3939 E	938	34 - 59.2556 N	139 - 13.3875 E	2.7	332	6Kマーカ-視認		
03:39:05	12:39:05	1071	34 - 59.2435 N	139 - 13.3933 E	938	34 - 59.2557 N	139 - 13.3857 E	2.5	309	ヒゲクラグ		
03:41:28	12:41:28	1072	34 - 59.2511 N	139 - 13.3889 E	939	34 - 59.2562 N	139 - 13.3839 E	2.3	095	ヒゲクラグ		
03:44:03	12:44:03	1073	34 - 59.2488 N	139 - 13.3931 E	939	34 - 59.2556 N	139 - 13.3871 E	2.3	121	ヒゲクラグ		
03:56:41	12:56:41	1083	34 - 59.2434 N	139 - 13.4004 E	938	34 - 59.2572 N	139 - 13.3840 E	0.1	238	マーカ-設置		
04:07:14	13:07:14	1085	34 - 59.2478 N	139 - 13.4125 E	938	34 - 59.2577 N	139 - 13.3890 E	2.3	239	海底視認		
04:08:32	13:08:32	1087	34 - 59.2442 N	139 - 13.4112 E	938	34 - 59.2564 N	139 - 13.3908 E	2.3	240	オタマボヤハウス		
04:24:38	13:24:38	1076	34 - 59.2427 N	139 - 13.4129 E	938	34 - 59.2508 N	139 - 13.3953 E	14.0	060	オタマボヤハウス		
04:33:14	13:33:14	1070	34 - 59.2317 N	139 - 13.3989 E	938	34 - 59.2454 N	139 - 13.4016 E	2.0	240	航走停止		
04:42:57	13:42:57	1081	34 - 59.2335 N	139 - 13.4086 E	938	34 - 59.2483 N	139 - 13.4009 E	2.3	239	魚		
04:46:25	13:46:25	1071	34 - 59.2281 N	139 - 13.4024 E	938	34 - 59.2476 N	139 - 13.3995 E	3.7	257	6Kバラスト		
05:01:23	14:01:23	1075	34 - 59.2553 N	139 - 13.3732 E	938	34 - 59.2514 N	139 - 13.3988 E	2.3	190	ヒバリガイコロニー視認		
05:30:08	14:30:08	1073	34 - 59.3937 N	139 - 13.4724 E	938	34 - 59.3899 N	139 - 13.4848 E	1.7	028	魚		
05:36:13	14:36:13	1072	34 - 59.4330 N	139 - 13.4992 E	938	34 - 59.4172 N	139 - 13.5005 E			停船		
05:44:21	14:44:21	1193	34 - 59.4312 N	139 - 13.4935 E	1060	34 - 59.4275 N	139 - 13.5014 E			航走停止		
05:44:34	14:44:34	1193	34 - 59.4262 N	139 - 13.4931 E	1060	34 - 59.4277 N	139 - 13.4999 E	2.7	191	着底		
05:47:11	14:47:11	1195	34 - 59.4297 N	139 - 13.4999 E	1060	34 - 59.4299 N	139 - 13.5047 E	1.7	193	右手で線コアつかむ		
05:48:20	14:48:20	1196	34 - 59.4263 N	139 - 13.4979 E	1060	34 - 59.4254 N	139 - 13.5029 E			線採集		
05:50:30	14:50:30	1196	34 - 59.4294 N	139 - 13.4986 E	1060	34 - 59.4281 N	139 - 13.5009 E			線採集終了		
05:52:48	14:52:48	1195	34 - 59.4260 N	139 - 13.5022 E	1060	34 - 59.4260 N	139 - 13.5061 E			右手で黄色コアつかむ		
05:53:32	14:53:32	1196	34 - 59.4265 N	139 - 13.5008 E	1060	34 - 59.4265 N	139 - 13.5035 E			黄色採集		

<Dive 328>

Dive Log of KM-ROV Dive #328										LOG		Area Name: 東青ヶ島		2025/08/09
シートのコピー														
Time [UTC]	Time [Local]	Vehicle Dep. [m]	Vehicle Pos. Lat	Vehicle Pos. Lon	TMS Dep. [m]	TMS Pos. Lat	TMS Pos. Lon	Vehicle Alt. [m]	Heading [degree]	Description	Remarks			
22:59:00	07:59:00	0	34 - 59.4550	N 139 - 13.4384	E 0	34 - 59.4647	N 139 - 13.4460	E		投入作業開始				
23:05:12	08:05:12	0	34 - 59.4550	N 139 - 13.4384	E 0	34 - 59.4647	N 139 - 13.4460	E		吊り上げ				
23:09:27	08:09:27	0	34 - 59.4550	N 139 - 13.4384	E 0	34 - 59.4647	N 139 - 13.4460	E		振り出し				
23:10:18	08:10:18	0	34 - 59.4550	N 139 - 13.4384	E 0	34 - 59.4647	N 139 - 13.4460	E		着水				
23:11:25	08:11:25	0	34 - 59.4550	N 139 - 13.4384	E 0	34 - 59.4647	N 139 - 13.4460	E		Ramcam 電源オン				
23:16:09	08:16:09	129	32 - 25.9204	N 139 - 53.8772	E 127	32 - 25.9197	N 139 - 53.8758	E		Ramcam 電源オフ				
23:25:42	08:25:42	538	32 - 25.9153	N 139 - 53.9260	E 0	32 - 25.9163	N 139 - 53.9086	E		ステアープガンオン				
23:27:08	08:27:08	597	32 - 25.9158	N 139 - 53.9176	E 296	32 - 25.9169	N 139 - 53.9060	E		Ramcam オン				
23:28:34	08:28:34	656	32 - 25.9129	N 139 - 53.9171	E 651	32 - 25.9149	N 139 - 53.9173	E		カメラクレンジ				
23:29:08	08:29:08	672	32 - 25.9120	N 139 - 53.9169	E 669	32 - 25.9158	N 139 - 53.9169	E		カメラクレンジ				
23:33:53	08:33:53	687	32 - 25.9138	N 139 - 53.9169	E 683	32 - 25.9155	N 139 - 53.9189	E		確認し生物				
23:33:57	08:33:57	688	32 - 25.9161	N 139 - 53.9166	E 683	32 - 25.9188	N 139 - 53.9184	E		TMS 分離				
23:36:01	08:36:01	751	32 - 25.9283	N 139 - 53.9198	E 683	32 - 25.9177	N 139 - 53.9223	E		魚				
23:36:47	08:36:47	779	32 - 25.9293	N 139 - 53.9198	E 683	32 - 25.9183	N 139 - 53.9209	E		何れの生物				
23:37:47	08:37:47	807	32 - 25.9357	N 139 - 53.9171	E 682	32 - 25.9165	N 139 - 53.9187	E	2.7	南近視認				
23:38:14	08:38:14	808	32 - 25.9352	N 139 - 53.9166	E 683	32 - 25.9180	N 139 - 53.9204	E	2.4	着底				
23:39:41	08:39:41	808	32 - 25.9355	N 139 - 53.9171	E 682	32 - 25.9183	N 139 - 53.9196	E	2.1	移動開始				
23:42:08	08:42:08	808	32 - 25.9266	N 139 - 53.9126	E 683	32 - 25.9173	N 139 - 53.9186	E	2.1	音響周知8sに変更				
23:43:08	08:43:08	808	32 - 25.9208	N 139 - 53.9156	E 683	32 - 25.9172	N 139 - 53.9181	E	1.9	3knotで航行				
23:44:02	08:44:02	808	32 - 25.9176	N 139 - 53.9139	E 683	32 - 25.9146	N 139 - 53.9182	E	1.9	エビ				
23:44:55	08:44:55	808	32 - 25.9128	N 139 - 53.9130	E 682	32 - 25.9105	N 139 - 53.9184	E	1.8	エビ				
23:45:44	08:45:44	808	32 - 25.9091	N 139 - 53.9128	E 683	32 - 25.9065	N 139 - 53.9174	E	1.6	魚				
23:46:37	08:46:37	808	32 - 25.9040	N 139 - 53.9146	E 683	32 - 25.9025	N 139 - 53.9180	E	1.5	魚				
23:51:24	08:51:24	808	32 - 25.8866	N 139 - 53.9089	E 682	32 - 25.8761	N 139 - 53.9172	E	1.4	設備物視認				
23:54:28	08:54:28	808	32 - 25.8629	N 139 - 53.9080	E 683	32 - 25.8632	N 139 - 53.9178	E	1.5	ステアープガン停止				
00:04:20	09:04:20	810	32 - 25.8595	N 139 - 53.9046	E 683	32 - 25.8632	N 139 - 53.9184	E	0.0	ADCPの一部をバスケットに回収				
00:05:42	09:05:42	809	32 - 25.8574	N 139 - 53.9044	E 683	32 - 25.8625	N 139 - 53.9159	E	0.0	岩をバスケットに回収				
00:08:50	09:08:50	810	32 - 25.8585	N 139 - 53.9077	E 683	32 - 25.8628	N 139 - 53.9172	E		141	着底			
00:11:41	09:11:41	809	32 - 25.8602	N 139 - 53.9088	E 683	32 - 25.8627	N 139 - 53.9157	E		142	水中録音機にフック着底掛け完了			
00:25:04	09:25:04	810	32 - 25.8645	N 139 - 53.9051	E 682	32 - 25.8629	N 139 - 53.9171	E	0.0	ADCPをバスケットに回収				
00:26:44	09:26:44	809	32 - 25.8544	N 139 - 53.8962	E 683	32 - 25.8568	N 139 - 53.9150	E	0.0	136	エビ			
00:28:21	09:28:21	809	32 - 25.8597	N 139 - 53.9035	E 683	32 - 25.8609	N 139 - 53.9178	E	0.0	133	搬送			
00:30:35	09:30:35	804	32 - 25.8645	N 139 - 53.9032	E 683	32 - 25.8603	N 139 - 53.9185	E	6.7	138	音響周知1sに変更			
00:35:45	09:35:45	677	32 - 25.8587	N 139 - 53.9136	E 0	32 - 25.8601	N 139 - 53.9137	E		199	ビークル結合			
00:36:20	09:36:20	678	32 - 25.8584	N 139 - 53.9121	E 0	32 - 25.8637	N 139 - 53.9121	E		223.0	カメラクレンジ			
00:36:52	09:36:52	677	32 - 25.8581	N 139 - 53.9107	E 334	32 - 25.8649	N 139 - 53.9037	E		197	ステアープガン開始?			
00:39:11	09:39:11	677	32 - 25.8608	N 139 - 53.9111	E 0	32 - 25.8599	N 139 - 53.9097	E			着水上げ開始			
00:41:41	09:41:41	588	32 - 25.8579	N 139 - 53.9134	E 0	32 - 25.8625	N 139 - 53.9059	E			エビ			
00:43:22	09:43:22	517	32 - 25.8556	N 139 - 53.9248	E 0	32 - 25.8540	N 139 - 53.9132	E			500m巻き上げ中			
00:56:37	09:56:37	36	32 - 25.8148	N 139 - 54.0662	E 10	32 - 25.8132	N 139 - 54.0419	E			Ramcam オフ			
00:58:18	09:58:18	36	32 - 25.8109	N 139 - 54.0891	E 10	32 - 25.8132	N 139 - 54.0609	E			回収作業開始			
01:01:12	10:01:12	33	32 - 25.8104	N 139 - 54.0912	E 10	32 - 25.8137	N 139 - 54.0619	E			浮上			
01:11:52	10:11:52	33	32 - 25.8104	N 139 - 54.0912	E 10	32 - 25.8137	N 139 - 54.0619	E			船上揚収完了			

<Dive 329>

Dive Log of KM-ROV Dive #329								LOG	Area Name: 東青ヶ島カルデラ (SEサイト)	2025/08/12	
シートのコピー											
Time [UTC]	Time [Local]	Vehicle Dep.[m]	Vehicle Pos. Lat	Vehicle Pos. Lon	TMS Dep.[m]	TMS Pos. Lat	TMS Pos. Lon	Vehicle Alt [m]	Heading [degree]	Description	Remarks
22:55:58	07:55:58	0	32 - 25.8104 N	139 - 54.0912 E	0	32 - 25.7608 N	139 - 53.8416 E			投入作業開始	
23:00:15	08:00:15	0	32 - 25.8104 N	139 - 54.0912 E	0	32 - 25.7608 N	139 - 53.8416 E			吊り上げ	
23:06:11	08:06:11	0	32 - 25.8104 N	139 - 54.0912 E	0	32 - 25.7608 N	139 - 53.8416 E			振り出し	
23:06:59	08:06:59	0	32 - 25.8104 N	139 - 54.0912 E	0	32 - 25.7608 N	139 - 53.8416 E			着水	
23:07:52	08:07:52	0	32 - 25.8104 N	139 - 54.0912 E	0	32 - 25.7608 N	139 - 53.8416 E			Ramcam on	
23:13:43	08:13:43	173	32 - 26.1784 N	139 - 54.6743 E	0	32 - 26.1796 N	139 - 54.6644 E			Ramcam off	
										着水時からスラップガンオン	
23:23:12	08:23:12	580	32 - 26.1988 N	139 - 54.6713 E	576	32 - 26.2000 N	139 - 54.6736 E			Ramcam on	
23:28:58	08:28:58	659	32 - 26.1895 N	139 - 54.6720 E	651	32 - 26.1913 N	139 - 54.6718 E			TMS分離	
23:32:47	08:32:47	770	32 - 26.1893 N	139 - 54.6771 E	655	32 - 26.1907 N	139 - 54.6718 E			海底視認	
23:33:20	08:33:20	774	32 - 26.1872 N	139 - 54.6754 E	655	32 - 26.1893 N	139 - 54.6713 E			着底	
23:35:36	08:35:36	774	32 - 26.1890 N	139 - 54.6759 E	649	32 - 26.1893 N	139 - 54.6695 E			イベントマーク2に向け航走開始	
23:39:25	08:39:25	765	32 - 26.1942 N	139 - 54.7032 E	643	32 - 26.1924 N	139 - 54.6800 E			1ターナー視認	
23:40:57	08:40:57	764	32 - 26.1964 N	139 - 54.7107 E	640	32 - 26.1945 N	139 - 54.6889 E	1.1	074	設置物確認	
23:46:45	08:46:45	764	32 - 26.1988 N	139 - 54.7102 E	634	32 - 26.1994 N	139 - 54.7056 E		038	簡易式セジメントトラップ1蓋とりつけ	
23:54:55	08:54:55	763	32 - 26.1988 N	139 - 54.7099 E	634	32 - 26.1995 N	139 - 54.7078 E	1.0	048	簡易式セジメントトラップ1をバスケットに回収	
23:59:45	08:59:45	771	32 - 26.2010 N	139 - 54.7095 E	634	32 - 26.2006 N	139 - 54.7052 E	0.2	046	簡易式セジメントトラップ2をバスケットに回収	
00:04:23	09:04:23	767	32 - 26.1999 N	139 - 54.7143 E	634	32 - 26.2005 N	139 - 54.7089 E	0.3	069	海底監視カメラ回収	
00:10:56	09:10:56	764	32 - 26.1999 N	139 - 54.7141 E	634	32 - 26.1984 N	139 - 54.7090 E	0.4	071	石回収	
00:13:19	09:13:19	763	32 - 26.1984 N	139 - 54.7131 E	633	32 - 26.1982 N	139 - 54.7097 E	0.4	071	確認, 762m, 底質砂	
00:14:21	09:14:21	748	32 - 26.2010 N	139 - 54.7102 E	634	32 - 26.1979 N	139 - 54.7091 E	22.4	094	デムーブ視認	
00:19:21	09:19:21	633	32 - 26.1967 N	139 - 54.7092 E	630	32 - 26.1989 N	139 - 54.7057 E			TMS結合	
00:20:42	09:20:42	633	32 - 26.1990 N	139 - 54.7091 E	630	32 - 26.1996 N	139 - 54.7071 E			巻き上げ開始	
00:22:32	09:22:32	574	32 - 26.2019 N	139 - 54.7093 E	571	32 - 26.2013 N	139 - 54.7072 E			ケーブルクダ	
00:22:56	09:22:56	559	32 - 26.2048 N	139 - 54.7095 E	555	32 - 26.2045 N	139 - 54.7086 E			ケーブルクダ	
00:23:32	09:23:32	535	32 - 26.2056 N	139 - 54.7086 E	531	32 - 26.2042 N	139 - 54.7077 E			ケーブルクダ	
00:24:28	09:24:28	498	32 - 26.2030 N	139 - 54.7066 E	497	32 - 26.2016 N	139 - 54.7063 E			500m巻き上げ中	
00:24:48	09:24:48	484	32 - 26.2029 N	139 - 54.7043 E	480	32 - 26.2006 N	139 - 54.7070 E			ケーブルクダ	
00:29:36	09:29:36	291	32 - 26.1968 N	139 - 54.7170 E	288	32 - 26.1974 N	139 - 54.7145 E			海底監視カメラ蓋のはずれ確認	
00:41:05	09:41:05	101	32 - 26.1882 N	139 - 54.7212 E	98	32 - 26.1871 N	139 - 54.7197 E			網をスラップガンで回収	
00:42:48	09:42:48	100	32 - 26.1848 N	139 - 54.7250 E	0	32 - 26.1815 N	139 - 54.7002 E			フレート回収	
00:43:10	09:43:10	101	32 - 26.1832 N	139 - 54.7266 E	0	32 - 26.1813 N	139 - 54.6999 E			海底監視カメラ設置	
00:47:25	09:47:25	100	32 - 26.1811 N	139 - 54.7347 E	96	32 - 26.1797 N	139 - 54.7348 E			巻き上げ再開	
00:47:45	09:47:45	99	32 - 26.1807 N	139 - 54.7348 E	95	32 - 26.1794 N	139 - 54.7352 E			スラップガン停止	
00:49:33	09:49:33	0	32 - 26.1713 N	139 - 54.7059 E	33	32 - 26.1703 N	139 - 54.7387 E			Ramcam off	
00:49:43	09:49:43	37	32 - 26.1694 N	139 - 54.7402 E	32	32 - 26.1683 N	139 - 54.7395 E			ウインチ停止	
00:50:27	09:50:27	36	32 - 26.1662 N	139 - 54.7432 E	33	32 - 26.1651 N	139 - 54.7443 E			回収作業開始	
00:53:22	09:53:22	36	32 - 26.1652 N	139 - 54.7464 E	33	32 - 26.1643 N	139 - 54.7469 E			浮上	
00:58:34	09:58:34	36	32 - 26.1652 N	139 - 54.7464 E	33	32 - 26.1643 N	139 - 54.7469 E			回収完了	

<Dive 330>

Dive Log of KM-ROV Dive #330										LOG	Area Name: 東青ヶ島カルデラ (セントラルコーンサイト)	2025/08/13
Time [UTC]	Time [Local]	Vehicle Dep. [m]	Vehicle Pos. Lat	Vehicle Pos. Lon	TMS Dep. [m]	TMS Pos. Lat	TMS Pos. Lon	Vehicle Alt. [m]	Heading [degree]	Description	Remarks	
23:07:40	08:07:40	0	32 - 26.1652 N	139 - 54.7464 E	0	32 - 26.1643 N	139 - 54.7469 E			投入作業開始		
23:08:01	08:08:01	0	32 - 26.1652 N	139 - 54.7464 E	0	32 - 26.1643 N	139 - 54.7469 E			吊り上げ		
23:11:06	08:11:06	0	32 - 26.1652 N	139 - 54.7464 E	0	32 - 26.1643 N	139 - 54.7469 E			着水		
23:11:14	08:11:14	0	32 - 26.1652 N	139 - 54.7464 E	0	32 - 26.1643 N	139 - 54.7469 E			Ramscam on		
23:22:17	08:22:17	380	32 - 26.3035 N	139 - 53.8882 E	377	32 - 26.3029 N	139 - 53.8871 E			Ramscam off		
23:31:46	08:31:46	637	32 - 26.3147 N	139 - 53.8876 E	634	32 - 26.3169 N	139 - 53.8877 E			Ramscam on		
23:32:51	08:32:51	637	32 - 26.3145 N	139 - 53.8893 E	634	32 - 26.3174 N	139 - 53.8895 E			TMS確認		
23:36:44	08:36:44	775	32 - 26.3149 N	139 - 53.9094 E	633	32 - 26.3182 N	139 - 53.8894 E			海底視認		
23:36:53	08:36:53	776	32 - 26.3134 N	139 - 53.9094 E	633	32 - 26.3181 N	139 - 53.8905 E			着底、底質砂		
23:38:41	08:38:41	776	32 - 26.3144 N	139 - 53.9075 E	630	32 - 26.3174 N	139 - 53.8886 E		317	軌道開始		
23:40:48	08:40:48	771	32 - 26.3270 N	139 - 53.8984 E	633	32 - 26.3183 N	139 - 53.8893 E		298	310度方向に200m移動		
23:46:17	08:46:17	768	32 - 26.3421 N	139 - 53.8732 E	633	32 - 26.3303 N	139 - 53.8694 E	1.9	280	チムニー確認		
00:13:17	09:13:17	756	32 - 26.3714 N	139 - 53.8400 E	633	32 - 26.3553 N	139 - 53.8183 E	0.3	099	化学センサー設置		
00:20:32	09:20:32	757	32 - 26.3700 N	139 - 53.8391 E	632	32 - 26.3554 N	139 - 53.8195 E			化学センサー設置完了		
00:27:34	09:27:34	756	32 - 26.3696 N	139 - 53.8418 E	633	32 - 26.3550 N	139 - 53.8195 E	0.3	000	スラープガンでコア採取		
00:31:45	09:31:45	756	32 - 26.3711 N	139 - 53.8427 E	633	32 - 26.3562 N	139 - 53.8197 E	0.3	358	岩ボックスに採取		
00:34:07	09:34:07	757	32 - 26.3702 N	139 - 53.8399 E	633	32 - 26.3559 N	139 - 53.8182 E		12.0	スラープガンでコア採取		
00:34:53	09:34:53	756	32 - 26.3710 N	139 - 53.8409 E	633	32 - 26.3560 N	139 - 53.8196 E	0.4	11.0	スラープガンでコア採取		
00:39:11	09:39:11	756	32 - 26.3725 N	139 - 53.8428 E	633	32 - 26.3561 N	139 - 53.8206 E	0.3	012	スラープガンで生物サンプリング		
00:43:05	09:43:05	756	32 - 26.3708 N	139 - 53.8420 E	633	32 - 26.3534 N	139 - 53.8199 E	0.5	011	生物付き岩石をボックスに採取		
00:46:58	09:46:58	756	32 - 26.3718 N	139 - 53.8406 E	634	32 - 26.3534 N	139 - 53.8195 E	0.6	011	スラープガン停止		
00:58:36	09:58:36	754	32 - 26.3621 N	139 - 53.8456 E	633	32 - 26.3533 N	139 - 53.8196 E	1.1	069	スラープガン採取		
01:06:16	10:06:16	754	32 - 26.3654 N	139 - 53.8467 E	633	32 - 26.3543 N	139 - 53.8204 E	1.0	068	スラープガンペリガイ採取		
01:10:54	10:10:54	753	32 - 26.3643 N	139 - 53.8485 E	633	32 - 26.3575 N	139 - 53.8240 E	0.8	066	スラープガンコア採取		
01:12:09	10:12:09	754	32 - 26.3654 N	139 - 53.8452 E	633	32 - 26.3536 N	139 - 53.8196 E	0.7	064	スラープガン収集終了		
01:14:27	10:14:27	754	32 - 26.3601 N	139 - 53.8461 E	633	32 - 26.3532 N	139 - 53.8216 E		044	チゴダラ科確認		
01:28:37	10:28:37	730	32 - 26.3601 N	139 - 53.8557 E	596	32 - 26.3537 N	139 - 53.8236 E		014	スラープガン収集開始		
01:32:45	10:32:45	728	32 - 26.3606 N	139 - 53.8553 E	596	32 - 26.3549 N	139 - 53.8230 E		337	スラープガン収集終了		
01:38:04	10:38:04	717	32 - 26.3591 N	139 - 53.8554 E	595	32 - 26.3537 N	139 - 53.8235 E		084	チムニー直上ブルーム確認		
01:46:57	10:46:57	714	32 - 26.3619 N	139 - 53.8585 E	596	32 - 26.3528 N	139 - 53.8229 E		069	ラムカムブルーム調査開始		
02:00:05	11:00:05	714	32 - 26.3655 N	139 - 53.8602 E	582	32 - 26.3544 N	139 - 53.8257 E		069	ラムカム計測終了		
02:12:21	11:12:21	713	32 - 26.3568 N	139 - 53.8538 E	583	32 - 26.3603 N	139 - 53.8528 E		028	測線2本目開始		
02:18:45	11:18:45	713	32 - 26.3592 N	139 - 53.8651 E	582	32 - 26.3619 N	139 - 53.8552 E		296	深度709mに上昇		
02:21:39	11:21:39	711	32 - 26.3625 N	139 - 53.8498 E	583	32 - 26.3630 N	139 - 53.8556 E		075	深度711mに到達		
02:27:46	11:27:46	713	32 - 26.3577 N	139 - 53.8512 E	583	32 - 26.3592 N	139 - 53.8561 E			測線の目目開始		
02:30:16	11:30:16	713	32 - 26.3553 N	139 - 53.8590 E	583	32 - 26.3608 N	139 - 53.8561 E		315	深度712m		
02:31:13	11:31:13	715	32 - 26.3596 N	139 - 53.8608 E	582	32 - 26.3609 N	139 - 53.8588 E		313	測線7本目開始		
02:33:11	11:33:11	714	32 - 26.3619 N	139 - 53.8459 E	583	32 - 26.3610 N	139 - 53.8566 E		074	深度713m		
02:33:57	11:33:57	715	32 - 26.3624 N	139 - 53.8461 E	583	32 - 26.3617 N	139 - 53.8561 E		082	測線8本目開始		
02:36:00	11:36:00	715	32 - 26.3537 N	139 - 53.8624 E	583	32 - 26.3573 N	139 - 53.8566 E		318	深度712m		
02:40:53	11:40:53	714	32 - 26.3564 N	139 - 53.8521 E	583	32 - 26.3602 N	139 - 53.8565 E		010	ブルーム内計測開始		
02:44:14	11:44:14	714	32 - 26.3584 N	139 - 53.8570 E	582	32 - 26.3628 N	139 - 53.8614 E		010	深度712.5m		
02:48:11	11:48:11	715	32 - 26.3542 N	139 - 53.8488 E	583	32 - 26.3614 N	139 - 53.8577 E			シャドウグラフ終了		
03:00:14	12:00:14	715	32 - 26.3542 N	139 - 53.8524 E	582	32 - 26.3591 N	139 - 53.8598 E		094	ブルーム計測終了		
03:05:52	12:05:52	715	32 - 26.3577 N	139 - 53.8453 E	582	32 - 26.3570 N	139 - 53.8624 E		090	測線9本目開始(712m)		
03:07:40	12:07:40	715	32 - 26.3571 N	139 - 53.8559 E	583	32 - 26.3628 N	139 - 53.8603 E			9本目終了、回頭		
03:11:37	12:11:37	715	32 - 26.3640 N	139 - 53.8649 E	583	32 - 26.3597 N	139 - 53.8609 E		269	計測終了		
03:12:09	12:12:09	715	32 - 26.3603 N	139 - 53.8595 E	582	32 - 26.3594 N	139 - 53.8611 E		269	10本目開始(713m)		
03:13:28	12:13:28	715	32 - 26.3562 N	139 - 53.8399 E	583	32 - 26.3613 N	139 - 53.8583 E			10本目終了、右回頭		
03:16:59	12:16:59	712	32 - 26.3598 N	139 - 53.8456 E	583	32 - 26.3608 N	139 - 53.8612 E			回頭中		
03:17:53	12:17:53	713	32 - 26.3601 N	139 - 53.8514 E	582	32 - 26.3599 N	139 - 53.8620 E		084	11本目開始		
03:18:41	12:18:41	712	32 - 26.3545 N	139 - 53.8583 E	582	32 - 26.3590 N	139 - 53.8612 E			11本目終了、右回頭		
03:21:19	12:21:19	712	32 - 26.3612 N	139 - 53.8639 E	582	32 - 26.3588 N	139 - 53.8617 E		267	深度調整		
03:22:38	12:22:38	710	32 - 26.3578 N	139 - 53.8619 E	583	32 - 26.3583 N	139 - 53.8610 E		269	12本目開始		
03:24:18	12:24:18	710	32 - 26.3522 N	139 - 53.8416 E	582	32 - 26.3586 N	139 - 53.8617 E			12本目終了、右回頭		
03:25:17	12:25:17	710	32 - 26.3534 N	139 - 53.8442 E	582	32 - 26.3598 N	139 - 53.8613 E			ランダーへ軌道開始の姿勢整える、水深670mへ		
03:29:51	12:29:51	673	32 - 26.3520 N	139 - 53.8469 E	551	32 - 26.3580 N	139 - 53.8633 E		166	ランダーへ軌道開始		
03:37:45	12:37:45	672	32 - 26.2742 N	139 - 53.8531 E	551	32 - 26.3297 N	139 - 53.8629 E		161	クロカミリクダ確認		
04:43:46	13:43:46	807	32 - 25.8096 N	139 - 53.8425 E	674	32 - 25.7967 N	139 - 53.8494 E	2.2	176	海底確認		
04:48:19	13:48:19	808	32 - 25.7667 N	139 - 53.8413 E	681	32 - 25.7749 N	139 - 53.8508 E	1.9	182	ランダー確認		
04:54:51	13:54:51	807	32 - 25.7654 N	139 - 53.8463 E	680	32 - 25.7687 N	139 - 53.8556 E	2.0	181	山北カメラ光確認		
04:56:01	13:56:01	807	32 - 25.7654 N	139 - 53.8390 E	680	32 - 25.7695 N	139 - 53.8530 E	1.9	181	探照灯確認		
05:06:33	14:06:33	806	32 - 25.7667 N	139 - 53.8506 E	680	32 - 25.7684 N	139 - 53.8560 E			回頭		
05:07:57	14:07:57	807	32 - 25.7682 N	139 - 53.8573 E	680	32 - 25.7684 N	139 - 53.8563 E	2.1	087	軌道開始		
05:09:37	14:09:37	809	32 - 25.7665 N	139 - 53.8623 E	680	32 - 25.7677 N	139 - 53.8594 E		087	底質確認		
05:12:15	14:12:15	809	32 - 25.7684 N	139 - 53.8592 E	680	32 - 25.7692 N	139 - 53.8584 E		087	コアサンプル(黄)採掘		
05:14:46	14:14:46	809	32 - 25.7674 N	139 - 53.8590 E	680	32 - 25.7695 N	139 - 53.8557 E		068	コアサンプル(黄)捨て		
05:17:20	14:17:20	809	32 - 25.7666 N	139 - 53.8556 E	680	32 - 25.7705 N	139 - 53.8524 E		068	軌道開始		
05:18:42	14:18:42	809	32 - 25.7707 N	139 - 53.8647 E	681	32 - 25.7708 N	139 - 53.8548 E		073	着底		
05:20:29	14:20:29	809	32 - 25.7700 N	139 - 53.8678 E	681	32 - 25.7703 N	139 - 53.8537 E		077	コアサンプル(黄)採掘		
05:22:15	14:22:15	809	32 - 25.7695 N	139 - 53.8660 E	681	32 - 25.7701 N	139 - 53.8536 E		071	コアサンプル(黄)回収		
05:22:49	14:22:49	809	32 - 25.7698 N	139 - 53.8695 E	680	32 - 25.7690 N	139 - 53.8560 E		071	左へ移動		
05:27:39	14:27:39	810	32 - 25.7704 N	139 - 53.8637 E	680	32 - 25.7707 N	139 - 53.8517 E		066	コアサンプル(青)採掘		
05:28:38	14:28:38	809	32 - 25.7711 N	139 - 53.8665 E	680	32 - 25.7708 N	139 - 53.8528 E		059	コアサンプル(青)回収(コアが途中で落ちる)		
05:29:57	14:29:57	809	32 - 25.7701 N	139 - 53.8655 E	681	32 - 25.7701 N	139 - 53.8523 E		057	コアサンプル(青)再度採掘(コアが途中で落ちる)		
05:33:11	14:33:11	810	32 - 25.7740 N	139 - 53.8659 E	680	32 - 25.7715 N	139 - 53.8520 E		051	コアサンプル(青)再度採掘		
05:35:22	14:35:22	809	32 - 25.7747 N	139 - 53.8673 E	680	32 - 25.7714 N	139 - 53.8498 E		054	移動		
05:38:09	14:38:09	810	32 - 25.7652 N	139 - 53.8447 E	680	32 - 25.7716 N	139 - 53.8510 E		224	ランダーから数メートル離れて着底		
05:38:55	14:38:55	809	32 - 25.7644 N	139 - 53.8412 E	680	32 - 25.7711 N	139 - 53.8497 E		224	コアサンプル(青)再度採掘		
05:41:18	14:41:18	809	32 - 25.7645 N	139 - 53.8460 E	680	32 - 25.7719 N	139 - 53.8508 E		214	左へ移動		
05:42:20	14:42:20	809	32 - 25.7650 N	139 - 53.8463 E	680	32 - 25.7715 N	139 - 53.8519 E		222	コアサンプル(青)再度採掘		
05:43:39	14:43:39	809	32 - 25.7643 N	139 - 53.8447 E	680	32 - 25.7709 N	139 - 53.8513 E		226	コアサンプル(青)回収		
05:47:12	14:47:12	809	32 - 25.7636 N	139 - 53.8419 E	681	32 - 25.7720 N	139 - 53.8508 E		226	離底		
05:52:21	14:52:21	672	32 - 25.7687 N	139 - 53.8495 E	668	32 - 25.7690 N	139 - 53.8494 E		231	浮上開始		

<Dive 331>

Dive Log of KM-ROV Dive #331										LOG		Area Name:		2025/8
シートのコピー														
Time [UTC]	Time [Local]	Vehicle Dep. [m]	Vehicle Pos. Lat	Vehicle Pos. Lon	TMS Dep. [m]	TMS Pos. Lat	TMS Pos. Lon	Vehicle Alt. [m]	Heading [degree]	Description	Remarks			
23:02:45	08:02:45	0	32 - 25.7905 N	139 - 53.8803 E	0	32 - 25.7696 N	139 - 53.8372 E			投入作業開始				
23:07:37	08:07:37	0	32 - 25.7905 N	139 - 53.8803 E	0	32 - 25.7696 N	139 - 53.8372 E			吊り上げ				
23:12:45	08:12:45	0	32 - 25.7905 N	139 - 53.8803 E	0	32 - 25.7696 N	139 - 53.8372 E			振り出し				
23:13:20	08:13:20	0	32 - 25.7905 N	139 - 53.8803 E	0	32 - 25.7696 N	139 - 53.8372 E			着水				
23:14:17	08:14:17	0	32 - 25.7905 N	139 - 53.8803 E	0	32 - 25.7696 N	139 - 53.8372 E			Ramcam on				
23:44:26	08:44:26	1186	32 - 06.3088 N	139 - 52.1433 E	1182	32 - 06.3075 N	139 - 52.1466 E			ウインチ停止				
23:46:38	08:46:38	1187	32 - 06.3058 N	139 - 52.1428 E	1183	32 - 06.3050 N	139 - 52.1448 E			TMS確認				
23:49:35	08:49:35	1305	32 - 06.3001 N	139 - 52.1529 E	0	32 - 06.3037 N	139 - 52.1465 E			海底確認				
23:50:28	08:50:28	1305	32 - 06.3017 N	139 - 52.1520 E	1182	32 - 06.3055 N	139 - 52.1449 E			着底、底質岩				
23:52:02	08:52:02	1306	32 - 06.3011 N	139 - 52.1502 E	1182	32 - 06.3050 N	139 - 52.1424 E	3.7	119	航走開始				
23:54:33	08:54:33	1303	32 - 06.2980 N	139 - 52.1602 E	1182	32 - 06.3052 N	139 - 52.1445 E	1.6	123	6Kマーカー確認				
00:00:34	09:00:34	1301	32 - 06.2961 N	139 - 52.1616 E	1169	32 - 06.3025 N	139 - 52.1551 E	1.3	091	ナムニー接近				
00:37:40	09:37:40	1233	32 - 06.2369 N	139 - 52.1511 E	1104	32 - 06.2488 N	139 - 52.1531 E	2.8	198	ナムニー確認				
00:42:17	09:42:17	1233	32 - 06.2337 N	139 - 52.1488 E	1103	32 - 06.2456 N	139 - 52.1530 E	1.3	174	スラップガンセバリガイ採集				
00:54:18	09:54:18	1232	32 - 06.2305 N	139 - 52.1508 E	1103	32 - 06.2415 N	139 - 52.1557 E	3.2	173	スラップガンセバリガイ採集				
01:06:28	10:06:28	1232	32 - 06.2297 N	139 - 52.1505 E	1103	32 - 06.2411 N	139 - 52.1557 E	2.5	177	スラップガン詰まり解消				
01:08:03	10:08:03	1230	32 - 06.2294 N	139 - 52.1472 E	1103	32 - 06.2405 N	139 - 52.1531 E	5.6	173.0	パイロット交代				
01:10:25	10:10:25	1232	32 - 06.2302 N	139 - 52.1459 E	1103	32 - 06.2403 N	139 - 52.1537 E	0.4	173.0	カニの喧嘩確認				
01:11:57	10:11:57	1233	32 - 06.2322 N	139 - 52.1504 E	1102	32 - 06.2411 N	139 - 52.1557 E	0.1	175	セバリガイ採取開始				
01:17:12	10:17:12	1233	32 - 06.2330 N	139 - 52.1512 E	1103	32 - 06.2413 N	139 - 52.1561 E			スラップガン詰まり解消				
01:19:40	10:19:40	1233	32 - 06.2308 N	139 - 52.1526 E	1102	32 - 06.2408 N	139 - 52.1566 E	2.2	173	カニ集合				
01:24:46	10:24:46	1232	32 - 06.2298 N	139 - 52.1486 E	1103	32 - 06.2399 N	139 - 52.1555 E			スラップガン詰まり				
01:27:00	10:27:00	1233	32 - 06.2333 N	139 - 52.1468 E	1103	32 - 06.2421 N	139 - 52.1533 E			スラップガン詰まりのどめ刺した可能性				
01:39:25	10:39:25	1233	32 - 06.2321 N	139 - 52.1484 E	1103	32 - 06.2408 N	139 - 52.1553 E			マニピュレーターでセバリガイ採集				
01:57:44	10:57:44	1233	32 - 06.2321 N	139 - 52.1502 E	1103	32 - 06.2422 N	139 - 52.1564 E	2.7	174	スラップガンセバリガイ採集				
02:03:32	11:03:32	1233	32 - 06.2329 N	139 - 52.1484 E	1102	32 - 06.2415 N	139 - 52.1562 E			スラップガン中カメ確認				
02:11:27	11:11:27	1233	32 - 06.2310 N	139 - 52.1517 E	1103	32 - 06.2412 N	139 - 52.1587 E	2.1	173	スラップガン終了				
02:15:51	11:15:51	1233	32 - 06.2304 N	139 - 52.1511 E	1103	32 - 06.2405 N	139 - 52.1573 E	2.1	173	セバリガイサンプリング終了				
02:18:18	11:18:18	1233	32 - 06.2316 N	139 - 52.1513 E	1103	32 - 06.2403 N	139 - 52.1566 E			パイロット交代				
02:15:01	11:15:01	1231	32 - 06.2324 N	139 - 52.1475 E	1102	32 - 06.2405 N	139 - 52.1576 E	2.6	198	2番に移動開始				
02:16:28	11:16:28	1228	32 - 06.2272 N	139 - 52.1475 E	1103	32 - 06.2380 N	139 - 52.1563 E	2.1	196	白色域・セバリガイコロニー確認				
02:17:45	11:17:45	1226	32 - 06.2286 N	139 - 52.1488 E	1103	32 - 06.2412 N	139 - 52.1564 E	2.3	194	微粒子取込装置確認				
02:19:16	11:19:16	1225	32 - 06.2246 N	139 - 52.1474 E	1103	32 - 06.2407 N	139 - 52.1591 E	0.9	194	微粒子取込装置ズーム確認				
02:20:56	11:20:56	1225	32 - 06.2242 N	139 - 52.1478 E	1103	32 - 06.2411 N	139 - 52.1585 E	0.5	195	微粒子取込装置付近に着底				
02:24:17	11:24:17	1225	32 - 06.2243 N	139 - 52.1492 E	1103	32 - 06.2413 N	139 - 52.1588 E	0.5	194	微粒子取込装置ボックス1,2に回収				
02:26:34	11:26:34	1226	32 - 06.2231 N	139 - 52.1461 E	1102	32 - 06.2394 N	139 - 52.1561 E	0.5	194	スーパースーパーボール出す				
02:48:48	11:48:48	1225	32 - 06.2231 N	139 - 52.1490 E	1102	32 - 06.2380 N	139 - 52.1567 E			バスケット回収(左手で押さえる)				
02:48:56	11:48:56	1226	32 - 06.2224 N	139 - 52.1467 E	1102	32 - 06.2383 N	139 - 52.1600 E	0.5	194	ナムニー探査開始				
02:55:46	11:55:46	1226	32 - 06.2254 N	139 - 52.1513 E	1102	32 - 06.2381 N	139 - 52.1577 E	0.3	196	ナムニー前に着底				
03:12:14	12:12:14	1225	32 - 06.2234 N	139 - 52.1486 E	1102	32 - 06.2413 N	139 - 52.1582 E			196	岩石ボックス, 1に回収			
03:23:35	12:23:35	1225	32 - 06.2215 N	139 - 52.1495 E	1102	32 - 06.2367 N	139 - 52.1580 E				岩石ボックス, 1にナムニー採取			
03:40:35	12:40:35	1225	32 - 06.2213 N	139 - 52.1516 E	1102	32 - 06.2388 N	139 - 52.1596 E				ナムニーサンプリング			
03:49:50	12:49:50	1224	32 - 06.2205 N	139 - 52.1507 E	1102	32 - 06.2380 N	139 - 52.1595 E				ナムニー大きく崩壊			
03:41:33	12:41:33	1224	32 - 06.2181 N	139 - 52.1518 E	1102	32 - 06.2368 N	139 - 52.1593 E	1.6	235		ボックス, 1に回収			
03:42:41	12:42:41	1225	32 - 06.2224 N	139 - 52.1518 E	1102	32 - 06.2373 N	139 - 52.1611 E	1.5	235		ボックス, 1に岩石回収(崩壊した一部)			
03:43:51	12:43:51	1225	32 - 06.2221 N	139 - 52.1528 E	1101	32 - 06.2384 N	139 - 52.1614 E	1.5	235		ボックス, 1に岩石回収(崩壊した一部)			
03:44:29	12:44:29	1225	32 - 06.2222 N	139 - 52.1530 E	1102	32 - 06.2387 N	139 - 52.1607 E	1.5	235		3,4バスケット裏を拭いて収納			
03:45:59	12:45:59	1224	32 - 06.2214 N	139 - 52.1512 E	1101	32 - 06.2370 N	139 - 52.1610 E	1.3	234		ナムニーサンプリング終了			
03:46:31	12:46:31	1225	32 - 06.2222 N	139 - 52.1524 E	1101	32 - 06.2381 N	139 - 52.1598 E	2.1	234		コアサンプリングエリアに向かって航走開始			
03:59:25	12:59:25	1219	32 - 06.2772 N	139 - 52.1031 E	1099	32 - 06.2602 N	139 - 52.1452 E			326	ハラス			
04:01:59	13:01:59	1219	32 - 06.2855 N	139 - 52.0945 E	1099	32 - 06.2691 N	139 - 52.1362 E			326	クロックラゲ			
04:25:59	13:25:59	1344	32 - 06.3133 N	139 - 52.0753 E	1210	32 - 06.3236 N	139 - 52.0908 E			0.4	148 着底			
04:26:44	13:26:44	1345	32 - 06.3186 N	139 - 52.0769 E	1211	32 - 06.3266 N	139 - 52.0896 E			0.4	147 緑コア採取			
04:33:10	13:33:10	1344	32 - 06.3143 N	139 - 52.0740 E	1210	32 - 06.3222 N	139 - 52.0896 E			0.4	147 黄色コアに小石が混入			
04:35:02	13:35:02	1344	32 - 06.3146 N	139 - 52.0791 E	1211	32 - 06.3245 N	139 - 52.0905 E			0.3	147 黄色コア採取			
04:36:54	13:36:54	1342	32 - 06.3131 N	139 - 52.0768 E	1211	32 - 06.3244 N	139 - 52.0871 E			2.1	150 離底・移動			
04:40:06	13:40:06	1337	32 - 06.3093 N	139 - 52.0855 E	1210	32 - 06.3253 N	139 - 52.0901 E			0.3	149 着底			
04:42:29	13:42:29	1337	32 - 06.3069 N	139 - 52.0843 E	1210	32 - 06.3245 N	139 - 52.0908 E			0.3	152 青色コア採取			
04:45:49	13:45:49	1336	32 - 06.3070 N	139 - 52.0795 E	1211	32 - 06.3248 N	139 - 52.0861 E			2.1	149 離底・移動			
04:47:34	13:47:34	1335	32 - 06.3046 N	139 - 52.0875 E	1210	32 - 06.3256 N	139 - 52.0884 E			0.4	150 着底			
04:51:15	13:51:15	1337	32 - 06.3095 N	139 - 52.0848 E	1211	32 - 06.3243 N	139 - 52.0879 E			0.5	144 赤色コア採取			
05:03:05	14:03:05	1337	32 - 06.3118 N	139 - 52.0860 E	1211	32 - 06.3262 N	139 - 52.0847 E			0.4	141 離底			
05:08:41	14:08:41	1209	32 - 06.3250 N	139 - 52.0853 E	1206	32 - 06.3256 N	139 - 52.0860 E				ビークル結合			
05:10:02	14:10:02	1174	32 - 06.3259 N	139 - 52.0882 E	1170	32 - 06.3253 N	139 - 52.0912 E				ROV巻き上げ開始			
05:39:23	14:39:23	46	32 - 06.0279 N	139 - 52.3769 E	32	32 - 06.0186 N	139 - 52.3479 E				RamCam電源OFF(48V)			
05:40:25	14:40:25	35	32 - 05.9913 N	139 - 52.3660 E	32	32 - 05.9923 N	139 - 52.3660 E				回収作業開始			
05:42:51	14:42:51	35	32 - 05.9913 N	139 - 52.3660 E	32	32 - 05.9923 N	139 - 52.3660 E				海面に浮上			
05:45:05	14:45:05	35	32 - 05.9913 N	139 - 52.3660 E	32	32 - 05.9923 N	139 - 52.3660 E				船上に揚収			

<Dive 332>

Dive Log of KM-ROV Dive #332								シートのコピー		LOG		Area Name:		2025/8	
Time [UTC]	Time [Loca]	Vehicle Dep [m]	Vehicle Pos. Lat	Vehicle Pos. Lon	TMS Dep [m]	TMS Pos. Lat	TMS Pos. Lon	Vehicle Alt [m]	Heading [degree]	Description	Remarks				
02:00:23	11:00:23	0	32 - 05.9913 N	139 - 52.3660 E	0	32 - 25.5694 N	139 - 53.8360 E			1段入作業開始					
02:04:08	11:04:08	0	32 - 05.9913 N	139 - 52.3660 E	0	32 - 25.5694 N	139 - 53.8360 E			吊り上げ					
02:08:50	11:08:50	0	32 - 05.9913 N	139 - 52.3660 E	0	32 - 25.5694 N	139 - 53.8360 E			着水					
02:11:09	11:11:09	24	32 - 26.4082 N	139 - 53.7815 E	0	32 - 26.7903 N	139 - 53.7128 E			RamaCam on					
02:35:02	11:35:02	646	32 - 26.3275 N	139 - 53.8870 E	642	32 - 26.3286 N	139 - 53.8884 E			TMS離脱					
02:41:07	11:41:07	764	32 - 26.3324 N	139 - 53.8780 E	642	32 - 26.3295 N	139 - 53.8828 E	1.8	328	海底確認					
02:44:23	11:44:23	767	32 - 26.3329 N	139 - 53.8777 E	642	32 - 26.3291 N	139 - 53.8848 E	1.6	284	軌道開始					
02:52:37	11:52:37	763	32 - 26.3430 N	139 - 53.8514 E	641	32 - 26.3335 N	139 - 53.8638 E	0.9	342	320度方向移動開始					
02:59:46	11:59:46	755	32 - 26.3665 N	139 - 53.8425 E	642	32 - 26.3469 N	139 - 53.8437 E	2.2	351	設置位置確認					
03:00:31	12:00:31	755	32 - 26.3709 N	139 - 53.8428 E	641	32 - 26.3485 N	139 - 53.8416 E	2.0	352	停止					
03:02:40	12:02:40	754	32 - 26.3725 N	139 - 53.8441 E	642	32 - 26.3498 N	139 - 53.8399 E	1.7	352	着底場所確認(熱水の有無)・着底					
03:04:40	12:04:40	755	32 - 26.3714 N	139 - 53.8437 E	642	32 - 26.3497 N	139 - 53.8414 E			037 設置位置付近のカニをサンプリングをトライ(失敗)					
03:07:00	12:07:00	755	32 - 26.3717 N	139 - 53.8410 E	642	32 - 26.3497 N	139 - 53.8393 E			031 センサー右アームでつかむ					
03:08:21	12:08:21	755	32 - 26.3716 N	139 - 53.8419 E	642	32 - 26.3505 N	139 - 53.8393 E	29.0		設置位置回収完了					
03:16:55	12:16:55	756	32 - 26.3728 N	139 - 53.8399 E	642	32 - 26.3659 N	139 - 53.8395 E			038 確認					
03:19:32	12:19:32	718	32 - 26.3738 N	139 - 53.8450 E	642	32 - 26.3704 N	139 - 53.8418 E			715m浮上中					
03:22:23	12:22:23	640	32 - 26.3668 N	139 - 53.8429 E	635	32 - 26.3674 N	139 - 53.8424 E			ROV結合					
03:23:15	12:23:15	638	32 - 26.3661 N	139 - 53.8447 E	634	32 - 26.3661 N	139 - 53.8431 E			スラップガンスタート30m深まで					
03:24:15	12:24:15	637	32 - 26.3656 N	139 - 53.8439 E	634	32 - 26.3660 N	139 - 53.8415 E			巻き上げ開始・浮上予定時刻12:40					
03:40:39	12:40:39	36	32 - 26.2294 N	139 - 53.9320 E	31	32 - 26.2178 N	139 - 53.9551 E			RamaCam off					
03:41:36	12:41:36	36	32 - 26.2117 N	139 - 53.9426 E	0	32 - 26.2304 N	139 - 53.9679 E			回収作業開始					
03:44:11	12:44:11	26	32 - 26.2043 N	139 - 53.9525 E	0	32 - 26.2205 N	139 - 53.9736 E			海面に浮上					
03:46:29	12:46:29	26	32 - 26.2043 N	139 - 53.9525 E	0	32 - 26.2205 N	139 - 53.9736 E			回収完了					

<Dive 333>

Dive Log of KM-ROV Dive #333										シートのコピー		LOG	Area Name: 初島沖		2025/08/17
Time [UTC]	Time [Local]	Vehicle Dep. [m]	Vehicle Pos. Lat	Vehicle Pos. Lon	TMS Dep. [m]	TMS Pos. Lat	TMS Pos. Lon	Vehicle Alt. [m]	Heading [degree]	Description	Remarks				
21:56:06	06:56:06	0	32 -	26.2043 N	139 -	53.9525 E	0	32 -	26.2205 N	139 -	53.9736 E				
22:01:14	07:01:14	0	32 -	26.2043 N	139 -	53.9525 E	0	32 -	26.2205 N	139 -	53.9736 E				
22:07:50	07:07:50	0	32 -	26.2043 N	139 -	53.9525 E	0	32 -	26.2205 N	139 -	53.9736 E				
22:08:22	07:08:22	0	32 -	26.2043 N	139 -	53.9525 E	0	32 -	26.2205 N	139 -	53.9736 E				
22:22:26	07:22:26	478	35 -	00.9307 N	139 -	13.4055 E	476	35 -	00.9305 N	139 -	13.4067 E				
22:34:02	07:34:02	821	35 -	00.9286 N	139 -	13.4064 E	818	35 -	00.9326 N	139 -	13.4069 E				
22:36:19	07:36:19	901	35 -	00.9364 N	139 -	13.4093 E	817	35 -	00.9333 N	139 -	13.4069 E				
22:36:31	07:36:31	909	35 -	00.9343 N	139 -	13.4090 E	817	35 -	00.9324 N	139 -	13.4069 E				
22:37:52	07:37:52	920	35 -	00.9377 N	139 -	13.4081 E	818	35 -	00.9335 N	139 -	13.4064 E				
22:38:03	07:38:03	920	35 -	00.9364 N	139 -	13.4090 E	817	35 -	00.9327 N	139 -	13.4066 E				
22:41:51	07:41:51	919	35 -	00.9358 N	139 -	13.4083 E	786	35 -	00.9313 N	139 -	13.4062 E	5.5	270	位置へ向け航走開始	
22:45:18	07:45:18	915	35 -	00.9348 N	139 -	13.3883 E	787	35 -	00.9319 N	139 -	13.4037 E	3.2	271	セバリアガコロニー視認, 作業開始	
22:44:42	07:44:42	916	35 -	00.9360 N	139 -	13.3837 E	784	35 -	00.9318 N	139 -	13.3906 E	1.1	324	着底	
22:57:01	07:57:01	915	35 -	00.9353 N	139 -	13.3833 E	784	35 -	00.9321 N	139 -	13.3893 E	1.3	326	古田メジャーで大きさ確認中	
22:58:12	07:58:12	915	35 -	00.9374 N	139 -	13.3829 E	781	35 -	00.9302 N	139 -	13.3894 E	1.1	326	（ハバリ）がレステープガンで採取開始	
23:13:48	08:13:48	916	35 -	00.9377 N	139 -	13.3838 E	785	35 -	00.9317 N	139 -	13.3910 E	2.7	337	ボックスメニセバリアガイ回収	
23:51:40	08:51:40	911	35 -	00.9388 N	139 -	13.3942 E	781	35 -	00.9314 N	139 -	13.3901 E	1.1	327.0	ボックスメニセバリアガイ回収	
00:26:50	09:26:50	912	35 -	00.9432 N	139 -	13.3852 E	781	35 -	00.9310 N	139 -	13.3906 E	0.9	281.0	ボックスメニセバリアガイ回収	
00:34:02	09:34:02	906	35 -	00.9437 N	139 -	13.3835 E	784	35 -	00.9316 N	139 -	13.3906 E	3.8	301	6番（ハバリ）航走開始	
00:41:05	09:41:05	876	35 -	00.9520 N	139 -	13.3639 E	759	35 -	00.9412 N	139 -	13.3718 E	5.5	288	セクタラダ, メバル科, 鯛科	
00:42:55	09:42:55	870	35 -	00.9526 N	139 -	13.3565 E	742	35 -	00.9425 N	139 -	13.3657 E	2.0	288	メバル科, 甲殻類	
00:44:18	09:44:18	867	35 -	00.9533 N	139 -	13.3528 E	737	35 -	00.9452 N	139 -	13.3615 E	1.2	291	サメ類	
00:44:53	09:44:53	865	35 -	00.9545 N	139 -	13.3489 E	737	35 -	00.9455 N	139 -	13.3600 E	2.6	292	クロクラダ	
00:46:20	09:46:20	864	35 -	00.9576 N	139 -	13.3469 E	737	35 -	00.9494 N	139 -	13.3556 E		291	メンダゴ	
00:48:17	09:48:17	864	35 -	00.9577 N	139 -	13.3435 E	737	35 -	00.9527 N	139 -	13.3491 E		291	メンダゴ採取	
00:48:50	09:48:50	864	35 -	00.9560 N	139 -	13.3443 E	737	35 -	00.9520 N	139 -	13.3471 E		291	ハウス	
00:51:07	09:51:07	864	35 -	00.9579 N	139 -	13.3447 E	737	35 -	00.9553 N	139 -	13.3428 E		291	着底	
00:53:04	09:53:04	864	35 -	00.9566 N	139 -	13.3446 E	737	35 -	00.9546 N	139 -	13.3413 E		291	緑コア採取	
00:54:05	09:54:05	864	35 -	00.9574 N	139 -	13.3439 E	738	35 -	00.9551 N	139 -	13.3403 E		291	緑コア回収	
00:56:07	09:56:07	864	35 -	00.9572 N	139 -	13.3447 E	737	35 -	00.9547 N	139 -	13.3412 E		291	黄色コア採取	
00:57:03	09:57:03	865	35 -	00.9569 N	139 -	13.3435 E	737	35 -	00.9535 N	139 -	13.3406 E		289	黄色コア回収	
00:59:41	09:59:41	860	35 -	00.9622 N	139 -	13.3405 E	737	35 -	00.9549 N	139 -	13.3424 E	1.7	281	ハウス	
01:03:38	10:03:38	861	35 -	00.9612 N	139 -	13.3413 E	738	35 -	00.9533 N	139 -	13.3422 E	0.9	289	青コア採取	
01:04:36	10:04:36	862	35 -	00.9612 N	139 -	13.3406 E	738	35 -	00.9534 N	139 -	13.3419 E	0.9	290	青コア回収	
01:10:35	10:10:35	858	35 -	00.9645 N	139 -	13.3349 E	738	35 -	00.9537 N	139 -	13.3411 E	0.9	279	赤コア採取	
01:11:28	10:11:28	858	35 -	00.9648 N	139 -	13.3352 E	737	35 -	00.9544 N	139 -	13.3425 E	0.9	279	赤コア回収	
01:26:21	10:26:21	852	35 -	00.9689 N	139 -	13.3192 E	738	35 -	00.9596 N	139 -	13.3293 E	0.7	232	ステープガン着	
01:28:20	10:28:20	851	35 -	00.9703 N	139 -	13.3210 E	737	35 -	00.9608 N	139 -	13.3311 E			ステープガン停止	
01:30:20	10:30:20	842	35 -	00.9631 N	139 -	13.3246 E	737	35 -	00.9625 N	139 -	13.3276 E			着底	
01:33:41	10:33:41	738	35 -	00.9582 N	139 -	13.3321 E	734	35 -	00.9582 N	139 -	13.3305 E			巻き上げ開始	
01:53:46	10:53:46	37	35 -	00.9624 N	139 -	13.3316 E	28	35 -	00.9473 N	139 -	13.3116 E		268	揚収作業開始	
01:57:19	10:57:19	37	35 -	00.9624 N	139 -	13.3317 E	28	35 -	00.9437 N	139 -	13.3068 E			水面到達	
02:05:15	11:05:15	37	35 -	00.9624 N	139 -	13.3317 E	28	35 -	00.9437 N	139 -	13.3068 E			揚収作業完了	



With the days spent together in my heart, this voyage comes to an end.
But the voyage of life goes on.
Even in times of hardship and pain, I want to keep moving forward with a
smile.
Thank you.