

2024/2025 Annual Cruise Report of the *T/V Nansei-maru*

Takafumi Azuma*, Ken-ichiro Nishi

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Abstract

To facilitate the effective use of *T/V Nansei-maru*, we will report on the annual activities of the vessel from April 2024 to March 2025. Seventy-five (75) cruises were conducted by *T/V Nansei-maru*. The total number of cruise days was 138 days (118 days of training voyage, 6 days of Freshman seminar, 4 days of typhoon evacuation voyage, and 10 days of bottom paint work and the number of participants was 766 persons.

Introduction

T/V Nansei-maru was constructed in 2002 for the purpose of conducting practical training and observations of navigation, fishing vessel operation, fisheries, marine environment observations, and resource biology surveys. *T/V Nansei-maru* is based at the Ogawa Pier in Kagoshima Port. Its activities are conducted in areas that cover Kagoshima Bay, the Satsuma-Osumi Peninsula coasts, and the archipelagic waters in Kagoshima Prefecture, including Tanegashima, Yakushima, Tokara Islands, and the Koshiki Islands.

Specifications of the main shipboard instruments

This section provides general information on specifications of the main shipboard instruments employed during oceanographic observations and sample collections.

A Conductivity-Temperature-Depth Profiler System with a 12-position Carousel Multiple Sampler (CTD-CMS) is employed for hydrographic observations using sensors for conductivity, temperature, pressure (SBE 19plus: Sea-Bird Electronics, Inc.) and altimeter (Benthos PSA-916D: Teledyne Benthos, Inc.). Niskin bottles (2.5L) are attached to the CMS for collecting depth-stratified water samples.

For monitoring bathymetry and underwater substrates, *T/V Nansei-maru* has two different sonar instruments, first an Acoustic Doppler Current Profiler (Ocean Surveyor ADCP: Teledyne-RD Instruments, Inc.) and second a Scientific Echo Sounder (KFC3000: KAIJO). Available working frequencies

are 75 kHz for the Acoustic Doppler Current Profiler (ADCP) and 38 and 120 kHz for the Scientific Echo Sounder (SES). ADCP and SES are used for measuring water current velocities over a certain depth range, and for monitoring bathymetry and underwater substrate classification, respectively.

A North Pacific Standard (NORPAC) net is used for collecting zooplankton samples. The mouth diameter is 0.45 m, and its mesh openings are 0.1 mm. A flowmeter (Rigo Co., Ltd.) is mounted in the mouth of the frame of the net to register the volume of water that has passed through it.

An Ocean Research Institute (ORI) net is employed for collecting zooplankton and fish larvae samples. The mouth diameter is 0.45 m, and its mesh openings are 0.335 mm. A flowmeter (Rigo Co., Ltd.) is also mounted for the same purpose.

Core, Dredge and Grab samplers are used for collecting bottom mud and benthic organisms. The Core sampler is a G.S. type Core sampler (ASYURA) (Rigo Co., Ltd.). The Grab sampler is a Smith-Mcintyre bottom sampler (Rigo Co., Ltd.). The Grab and Core samplers are deployed from the port-side of the vessel located on the working deck. A Niino-type Dredge sampler (Rigo Co., Ltd.) is also employed, which is obliquely towed from the afterdeck.

A Larva Catch (LC) net is a large-scale fishing gear that can be used in the permitted water areas. Instead of otter boards (expansion boards) at the mouth of the net, it is equipped with

¹ Nansei-maru, Faculty of Fisheries, Kagoshima University, Shimoarata 4-50-20, Kagoshima 890-0056, Japan.

* Corresponding Author, Email: azuma@fish.kagoshima-u.ac.jp

parakites (kites) that are used to widen the mouth of the net through its resistance during trawling. The ramp door on the stern deck of the ship is opened to deploy this trawl net.

Overview of cruises

T/V Nansei-maru conducted 75 cruises from April 2024 to March 2025 (Table 1). The Total number of the cruise days was 138 days and the number of participants was 766 persons. In the fiscal year 2024, *T/V Nansei-maru* navigated from Kagoshima Bay to the vicinity of Takara Island, one of the Tokara Islands (Fig.1). Other faculties and universities included in the cruises are listed as follows:

- Graduate School of Science and Engineering, Kagoshima University
- Faculty of Science, Kagoshima University
- International Center for Island Studies, Kagoshima University
- Nagoya University
- Tokyo University of Marine Science and Technology
- Hokkaido University
- Kochi University
- Kitasato University

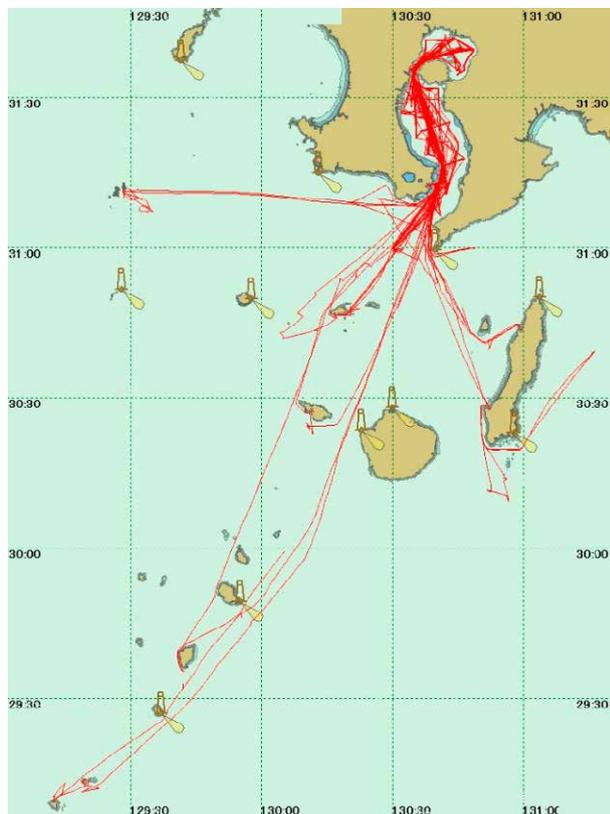


Fig. 1. Cruise tracks of *T/V Nansei-maru* during April 2024 to March 2025. Process and create electronic navigational charts (newpec) using the Japan Hydrographic Association's data.

- Prefectural University of Kumamoto
- Nihon University

Lists of publications

This section provides information on published articles relating to the observations carried out using *T/V Nansei-maru* in the period from April 2024 to March 2025.

- Kodama, M., Mukaida, Y., Hosoki, T.K., Makino, F., Azuma, T. (2024). A new species of the genus *Podoceroopsis* Boeck, 1861 (Crustacea: Amphipoda: Photidae) from Kagoshima Bay, Japan. *Plankton and Benthos Research*, **19** (3) : 141–152.
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- Kodama, M., Yamazaki, R., Hayakawa, J., Murata, G., Tomikawa, K., Kawamura, T., Kume, G., Kobari, T. (2024). Feeding ecology of the urchin symbiont *Dactylopleustes yoshimurai* (Amphipoda) revealed by DNA metabarcoding. *Marine Biology*, **171**: 190.
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Table 1. Cruise information on T/V Nansei-maru during April 2024 to March 2025.

Cruise ID	Period		Days	Number of persons			Major objectives
	Start	End		SC/PR*	ST*	OP*	
NS24- 1	Apr 06	Apr 07	2		11		Freshman seminar
NS24- 2	Apr 10	Apr 10	1	1	4		Hydrographic observation and Biological sample collection
NS24- 3	Apr 12	Apr 12	1	2	4	2	Fishing gear operation and Resource Survey
NS24- 4	Apr 13	Apr 14	2	1	12		Freshman seminar
NS24- 5	Apr 18	Apr 18	1		2	11	Biological sample collection
NS24- 6	Apr 19	Apr 19	1	1	7	2	Fishing gear operation and Resource Survey
NS24- 7	Apr 20	Apr 21	2		11		Freshman seminar
NS24- 8	May 09	May 11	3	1	2	6	Hydrographic observation and Biological sample collection
NS24- 9	May 14	May 15	2	1	4		Hydrographic observation
NS24- 10	May 16	May 16	1	1	5		Hydrographic observation and Biological sample collection
NS24- 11	May 17	May 17	1	2	7	1	Fishing gear operation and Resource Survey
NS24- 12	May 22	May 24	3	2	6		Biological sample collection
NS24- 13	Jun 01	Jun 02	2	2	9	3	Hydrographic observation and Biological sample collection
NS24- 14	Jun 05	Jun 05	1	1	6		Hydrographic observation and Biological sample collection
NS24- 15	Jun 06	Jun 06	1		2	11	Hydrographic observation and Biological sample collection
NS24- 16	Jun 10	Jun 13	4	1	3	7	Fishing gear operation
NS24- 17.1	Jun 14	Jun 14	1	1	3	6	Hydrographic observation and Biological sample collection
NS24- 17.2	Jun 15	Jun 15	1	1	5	3	Hydrographic observation and Biological sample collection
NS24- 17.3	Jun 16	Jun 16	1	1	6	2	Hydrographic observation and Biological sample collection
NS24- 18	Jun 20	Jun 20	1	1	5		Fishing gear operation
NS24- 19	Jun 21	Jun 21	1	2	5	1	Fishing gear operation and Resource Survey
NS24- 20	Jul 02	Jul 02	1		3	7	Underwater equipment recovery
NS24- 21	Jul 06	Jul 07	2		8	2	Biological sample collection
NS24- 22	Jul 08	Jul 11	4	1	6	8	Biological sample collection
NS24- 23	Jul 16	Jul 16	1	1	6	2	Fishing gear operation and Resource Survey
NS24- 24	Jul 18	Jul 18	1	1	6	1	Fishing gear operation and Resource Survey
NS24- 25	Jul 21	Jul 21	1	1	4		Open to the public
NS24- 26	Jul 22	Jul 22	1	1	2		Ship Maneuvering Training
NS24- 27	Jul 24	Jul 24	1	1	4		Hydrographic observation and Biological sample collection
NS24- 28	Jul 27	Jul 27	1		4	4	Ship Maneuvering Training
NS24- 29	Aug 05	Aug 08	4		14		Biological sample collection
NS24- 30	Aug 09	Aug 09	1		0	13	Hydrographic observation and Biological sample collection
NS24- 31	Aug 20	Aug 20	1		7	1	Hydrographic observation
NS24- 32	Aug 21	Aug 21	1	2	7	2	Fishing gear operation
NS24- 33	Aug 26	Aug 26	1	1	4		Ship Maneuvering Training
NS24- 34	Aug 27	Aug 30	4		0		Typhoon evacuation
NS24- 35	Aug 31	Sep 01	2	3	5		Hydrographic observation
NS24- 36	Sep 03	Sep 03	1	1	3		Hydrographic observation
NS24- 37	Sep 06	Sep 07	2	2	9	3	Fishing gear operation and Resource Survey
NS24- 38	Sep 08	Sep 11	4		1	7	Biological sample collection
NS24- 39	Sep 12	Sep 12	1	2	4	1	Fishing gear operation and Resource Survey
NS24- 40	Sep 17	Sep 18	2	1	2	11	Hydrographic observation and Biological sample collection
NS24- 41	Sep 25	Sep 25	1	1	6	1	Hydrographic observation and Biological sample collection
NS24- 42	Sep 27	Sep 30	4	1	11		Biological sample collection
NS24- 43	Oct 01	Oct 03	3	1	2	9	Biological sample collection
NS24- 44	Oct 04	Oct 05	2	2	13	1	Hydrographic observation and Biological sample collection
NS24- 45	Oct 08	Oct 10	3	1	4	2	Biological sample collection
NS24- 46	Oct 17	Oct 17	1		7		Fishing gear operation
NS24- 47	Oct 18	Oct 18	1	1	8	1	Fishing gear operation and Resource Survey
NS24- 48	Oct 22	Oct 22	1		2	13	Hydrographic observation and Biological sample collection
NS24- 49	Oct 23	Oct 23	1	1	7	1	Fishing gear operation and Resource Survey
NS24- 50	Oct 30	Oct 30	1	1	9		Hydrographic observation and Biological sample collection
NS24- 51	Nov 21	Nov 21	1	1	7		Hydrographic observation and Biological sample collection
NS24- 52	Nov 22	Nov 22	1	2	6	1	Fishing gear operation and Resource Survey
NS24- 53	Nov 26	Nov 27	2	1	3		Hydrographic observation
NS24- 54	Nov 28	Nov 29	2	1	8		Biological sample collection
NS24- 55	Dec 06	Dec 06	1		2	11	Hydrographic observation and Biological sample collection
NS24- 56	Dec 09	Dec 09	1	1	3	7	Hydrographic observation and Biological sample collection
NS24- 57	Dec 11	Dec 11	1		9		Ship Maneuvering Training
NS24- 58	Dec 13	Dec 13	1	2	6	1	Fishing gear operation and Resource Survey
NS24- 59	Dec 19	Dec 19	1	2	12	1	Hydrographic observation and Biological sample collection
NS24- 60.1	Dec 20	Dec 20	1	1	4	6	Hydrographic observation and Biological sample collection
NS24- 60.2	Dec 21	Dec 21	1	1	5	6	Hydrographic observation and Biological sample collection
NS24- 60.3	Dec 22	Dec 22	1	1	7	2	Hydrographic observation and Biological sample collection
NS24- 61	Dec 25	Dec 25	1		3		Ship Maneuvering Training
NS24- 62	Jan 09	Jan 09	1	1	3		Hydrographic observation
NS24- 63	Jan 22	Jan 22	1	1	5		Hydrographic observation and Biological sample collection
NS24- 64	Jan 23	Jan 23	1	1	4	2	Fishing gear operation and Resource Survey
NS24- 65	Jan 24	Jan 24	1	1	4	2	Fishing gear operation and Resource Survey
NS24- 66	Feb 10	Feb 10	1		4		Hydrographic observation and Biological sample collection
NS24- 67	Feb 12	Feb 13	2	1	4		Hydrographic observation
NS24- 68	Feb 18	Feb 18	1	2	6	2	Fishing gear operation and Resource Survey
NS24- 69	Feb 19	Feb 23	5	3	9	3	Hydrographic observation and Biological sample collection
NS24- 70	Feb 26	Feb 28	3	3	7	4	Hydrographic observation and Biological sample collection
NS24- 71	Mar 03	Mar 03	1		4	7	Underwater equipment installation
NS24- 72	Mar 06	Mar 06	1		0	13	Hydrographic observation and Biological sample collection
NS24- 73	Mar 11	Mar 11	1	2	5		Fishing gear operation and Resource Survey
NS24- 74.1	Mar 13	Mar 14	2	2	10	1	Hydrographic observation and Biological sample collection
NS24- 74.2	Mar 17	Mar 17	1	2	10	1	Hydrographic observation and Biological sample collection
NS24- 74.3	Mar 19	Mar 20	2	3	10	1	Hydrographic observation and Biological sample collection
NS24- 75	Mar 27	Mar 27	1	1	6		Hydrographic observation
	Nov 06	Nov 15	10				Bottom painting work

* SC/PR: Scientist/Professor, ST: Student, OP: Other person

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