



CRUISE REPORT ON RESEARCH ACTIVITIES

M.V.SEAFDEC 2 Cruise No. 13-7/2005

23 July– 16 August 2005

**Human Resources Development on Marine Capture Fisheries in the
BIMP-EAGA Region**

TD/RP/91

This report is based on preliminary data

For readers who may need data in the report, please contact to:

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Cruise report on Research Activity

1. Cruise Summary

Vessel name: MV.SEAFDEC2
Cruise no.: 13-7/2005 **Leg no:** -
Duration: 23 July-16 August 2005 (19 days)
Project Title:
Objective: Training for Human Resources Development (HRD) on marine Capture Fisheries in the BIMP-EAGA Region
Covered water: East coast of Palawan Island, the Philippines
 Latitude 08°50'.00 N-09°50'.00N
 Longitude 118°00'.00 E-119°01'.00 E
Port of call: Puerto Princeasa Palawan, the Philippines
Main activity:

1. Practice on demersal fish samplings in the un-trawlable ground (Continental shelf and rocky grounds) using Bottom Vertical Long-line (BVL) and Trap fishing gear
2. Practice on demersal fish samplings using Bottom trawl for distribution, composition and abundance of demersal fishes study
3. Oceanographic practice using ICTD
4. Practice on plankton and larvae collection using Bongo net
5. Practice on water and sediment samplings for heavy metal analysis
6. Gravity core sampling at Honda bay

2. List of researcher and ship staff

Ship personnel

| No. | Position | Name |
|-----|--------------------------|-----------------------------|
| 1 | Captain | Mr. Tossaporn Sukhapindha |
| 2 | Chief engineer | Mr. Veerachai Chettasumon |
| 3 | Second officer | Mr. Suren Pruksarat |
| 4 | Third officer | Mr. Somphote Vudthipanyo |
| 5 | Apprentice navigator | Mr. Anurak Loog-on |
| 6 | Second engineer | Mr. Komson Sangphuek |
| 7 | Boatswain | Mr. Vudthirat Vudthipanyo |
| 8 | Steerman | Mr. Pradit Kui-prasert |
| 9 | Steerman | Mr. Tana Rungjoy |
| 10 | Able seaman | Mr. Somkiat Phetrasatien |
| 11 | Fitter | Mr. Vallop Phimroom |
| 12 | Oiler | Mr. Plew Shodok |
| 13 | Oiler | Mr. Boontarin Wara-in |
| 14 | Cook | Mr. Saichol Kornnoom |
| 15 | Ship's boy | Mr. Phaithoon Sriratanaphon |
| 16 | Assist. Master fisherman | Mr. Aussawin Buachuay |

SEAFDEC Researchers

| No. | Position | Name |
|-----|------------------------|-------------------------|
| 16 | Deputy Chief of MFRDMD | Dr. Yoshinobu Konishi |
| 17 | Chief/Scientist | Mr. Isara Chanrachkij |
| 18 | Researcher | Mr. Narong Ruangsivakul |
| 19 | Assist. Researcher | Mr. Sukchai Arnupapboon |
| 20 | Assist. Researcher | Mr. Nakaret Yasook |

DOF/Philippines and Brunei Darussalam Researchers

| No. | Position | Name |
|-----|-------------------------------|--------------------------------------|
| 21 | Researcher/ Philippines | Mr. Valeriana Borja |
| 22 | Researcher/ Philippines | Mr. Homerto Riomaslos |
| 23 | Researcher/ Philippines | Mr. Joseph Christopher Rayos |
| 24 | Researcher/ Philippines | Mr. Archiel Rodriguez |
| 25 | Researcher/ Philippines | Mr. Rey Parangui |
| 26 | Researcher/ Philippines | Mr. Ahadulla Sajili |
| 27 | Researcher/ Philippines | Mr. Bayani Anthomy Gapuz |
| 88 | Researcher/ Philippines | Mr. Joe Villanueva |
| 99 | Researcher/ Philippines | Mr. Ambutong Pautong |
| 30 | Researcher/ Philippines | Mr. Ruderick Galang |
| 31 | Researcher/ Philippines | Lcdr. Ulysses Gonzaga |
| 32 | Researcher/ Philippines | Lt. Louie Razan |
| 33 | Researcher/ Brunei Darussalam | Mr. Aclb Hamid Bin Haji Zinin/Zainin |

3. Observation Summary

Oceanographic survey summary

Sixteen oceanographic stations along East coast of Palawan Island, Philippines were conducted through these cruises. Each station conducted with 2 main activities including physical and biological oceanographic survey. The equipments that were used in each station and data file name were shown in table no. 1.

ICTD (SeaBird 911)

M.V.SEAFFDEC 2, ICTD systems equipped with three main sensors for conductivity, temperature and depth and four auxiliary sensors for dissolved oxygen, pH, chlorophyll fluorometer and PAR. The ICTD was deployed from the sea surface to approximately 10 m. above sea bottom with constant velocity 0.5 m/s and retrieved to the surface at a similar speed.

All ICTD data were average into every 1 meter interval. Data in each station were divided into down cast and upper cast. Profile of temperature, salinity, dissolve oxygen, pH and fluorescence chlorophyll-a in each station are shown in **Apx. I**.



Fig. 1 Deploying of ICTD

During retrieving iCTD, Carousel water sample (Niskin Bottles) which is a part of CTD system were used to collect water samples from standard depth. Water sample in each depth was divided into two parts. The first part; it(60 ml.) was filter through Whatman GFC filter paper and stored in the freezer at -40 °C for nutrient analysis (nitrite, nitrate, phosphate and silicate) at SEAFDEC/Training Department laboratory later, all samples will be analyzed as soon as possible. Then the result will be sent to Philippine national coordinator. For second part; 1 litter of water sample was filtered through mesh size of 20 um for phyto-planktonic identification.

***Remark1:** Profiles of most physical oceanographic data were plotted from down cast. Due to oxygen data showing a bit of irregular pattern (Apx. II), thus Oxygen data could not be used until the problem is solve (early indications is that problem may be cause from converting process)*

***Remark2:** TD was operated at some stations where sea condition was unfavorable and the iCTD was unable to be operated.*

Thermosalinograph with Fluorometer (TSG-Fluorometer)

TSG – Fluorometer were operated during MV.SEAFDEC2 was sailing along the cruise track. The system was designed to continuously record three parameters including temperature, salinity and fluorescence chlorophyll-a, at approximately 5 meters below the sea surface. The data were average every 6 second. Operating summary is shown in **table 2**.

Bongo net equipped with flowmeter:

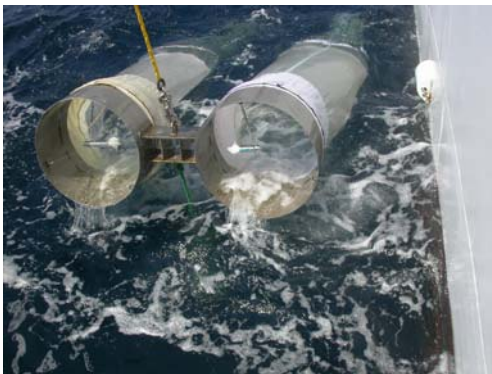


Fig. 2 Bongo net operation

Plankton net consisted of zoo plankton and larvae net with mesh size of 330 µm and 500 µm, respectively. They were attached to 60 cm. diameter bongo frames. A flow meter was attached at the aperture of net to measure the water volume passing through the net.

Quality of water (m³) per one flow meter revolution in front of zooplankton was 0.0336 rpm³, and Quality of water (m³) per one flow meter revolution in front of larvae was 0.0094 rpm³ in all station.

At each station an oblique tow of the bongo net was made with the ship speed 1-2 knots approximately. Angel of towing cable was maintained at 60° angle. This could be achieved by regulating the speed of vessel speed. (FAO manual recommended that cable

angle must be kept at 45° but SEAFDEC's bongo net cannot followed this manual as the centre part casing of SEAFDEC's bongo net do not have swivel mechanism). The depth of operations was from surface to 10-15 m above the sea bottom, with speed of 0.3 m/s for releasing and retrieving. The samples were preserved in 10% buffered formalin and seawater immediately.

Remark: this operation method was derived from discussion with Dr. Yoshinobu Konishi, Deputy Chief of Marine Fishery Resources Development and Management Department, SEAFDEC on the 25 July 2005 onboard M.V. SEAFDEC 2.

Piston core sample

Piston core is a kind of free gravity type drop system core sampler, with pilot bottom sample. It is use for collecting a depth profile of sediment. However it cannot be deployed due to unfavorable sea condition.

Smith McIntyre grab

Smith McIntyre grab was operated at two stations where sea condition were favorable. Sediment sampling was kept in a plastic bottle and refrigerated for heavy metal study.



Fig. 3 Smith McIntyre grab

Table 1. Partial detail of oceanographic survey stations of cruise no.13-7/2005

| St. No. (SEAFDEC) | St. No. (Philippines) | Date | Time (Philippines) | Latitude | Longitude | Oceanographic instruments | | | | Bottom Depth (m) | Remark |
|----------------------|--------------------------|-----------|-----------------------|------------|-------------|---------------------------|----|--------------------|------|------------------------|--------|
| | | | | | | SBE CTD | TD | Smith- Mcintyre | Core | | |
| 01 | 01 | 25-Jul-05 | 09:50 | 09_48.21 N | 118_53.41 E | x | - | - | x | 52 | |
| 02 | 02 | 25-Jul-05 | 12:45 | 09_48.91 N | 119_00.14 E | x | - | x | - | 47 | |
| 03 | 04 | 26-Jul-05 | 09:01 | 09_14.92 N | 118_43.98 E | x | - | - | - | 110 | |
| 04 | 05 | 27-Jul-05 | 08:00 | 09_15.26 N | 118_35.42 E | x | - | - | - | 45 | |
| 05 | 06 | 28-Jul-05 | 07:30 | 09_11.10 N | 118_31.40 E | x | - | - | - | 55 | |
| 06 | 07 | 28-Jul-05 | 12:30 | 09_10.45 N | 118_40.21 E | x | - | - | - | 57 | |
| 07 | 08 | 29-Jul-05 | 07:53 | 09_06.86 N | 118_35.64 E | x | - | - | - | 690 | |
| 08 | 09 | 29-Jul-05 | 15:25 | 09_06.99 N | 118_27.03 E | x | - | - | - | 46 | |
| 09 | 11 | 30-Jul-05 | 06:10 | 09_02.58 N | 118_18.47 E | x | - | - | - | 36 | |
| 10 | 10 | 30-Jul-05 | 07:33 | 09_07.06 N | 118_20.17 E | x | - | - | - | 42 | |
| 11 | 03 | 2-Aug-05 | 13:32 | 09_41.45 N | 119_00.25 E | x | - | x | - | 51 | |
| 12 | 12 | 3-Aug-05 | 07:50 | 09_01.07 N | 118_25.45 E | - | x | - | - | 100 | |
| 13 | 13 | 3-Aug-05 | 15:20 | 08_58.19 N | 118_20.57 E | - | x | - | - | 51 | |
| 14 | 14 | 4-Aug-05 | 08:02 | 08_59.79 N | 118_13.37 E | x | - | - | - | 27 | |
| 15 | 15 | 4-Aug-05 | 13:07 | 08_55.47 N | 118_06.78 E | x | - | - | - | 102 | |
| 16 | 16 | 5-Aug-05 | 07:20 | 08_58.69 N | 118_21.71 E | - | x | - | - | 71 | |

Table 2. Operation summary of Thermosalinograph with Fluorometer (TSG-Fluorometer)

| Operation number | Date | File name | route track | remark |
|------------------|-----------|-------------|------------------------------------|--------------------|
| 1 | 25-Jul-05 | - | - | No time to operate |
| 2 | 25-Jul-05 | 20050725(1) | From St.02(Phi02) - Princeasa port | |
| 3 | 26-Jul-05 | 20050726(1) | From St.03(Phi04) - St.04(Phi05) | |
| 4 | 27-Jul-05 | 20050727(1) | From St.04(Phi05) - St.05(Phi06) | |
| 5 | 28-Jul-05 | 20050728(1) | From St.05(Phi06) - St.06(Phi07) | |
| 6 | 28-Jul-05 | 20050728(2) | From St.06(Phi07) - St.07(Phi08) | |
| 7 | 29-Jul-05 | 20050729(1) | From St.07(Phi08) - St.08(Phi09) | |
| 8 | 29-Jul-05 | 20050729(2) | From St.08(Phi09) - St.09(Phi10) | |
| 9 | 30-Jul-05 | 20050730(1) | From St.09(Phi11) - St.10(Phi10) | |
| 10 | 30-Jul-05 | 20050730(2) | From St.10(Phi10) - Princeasa port | |
| 11 | 2-Aug-05 | 20050802(1) | From St.11(Phi03) - St.12(Phi12) | |
| 12 | 3-Aug-05 | 20050803(1) | From St.12(Phi12) - St.13(Phi13) | |
| 13 | 3-Aug-05 | - | - | No time to operate |
| 14 | 4-Aug-05 | 20050804(1) | From St.14(Phi14) - St.15(Phi15) | |
| 15 | 4-Aug-05 | 20050804(2) | From St.15(Phi15) - St.16(Phi16) | |
| 16 | 6-Aug-05 | 20050806(1) | From St.16(Phi16) - Princeasa port | |

Fishing survey summary

In this survey was operated 2 kinds of fishing gear are Bottom Vertical Longline and Trap. The partial detail of fishing survey is shown in table 2 and 3 respectively.

Bottom Vertical Longline

In this survey, bottom vertical longline was operated 11 stations. The partial detail of bottom vertical longline fishing survey is shown in Table 3.



Fig. 4 Catch from bottom vertical longline

Trap

This survey was operated trap fishing in 6 stations. The partial detail of trap fishing survey is shown in Table 4.

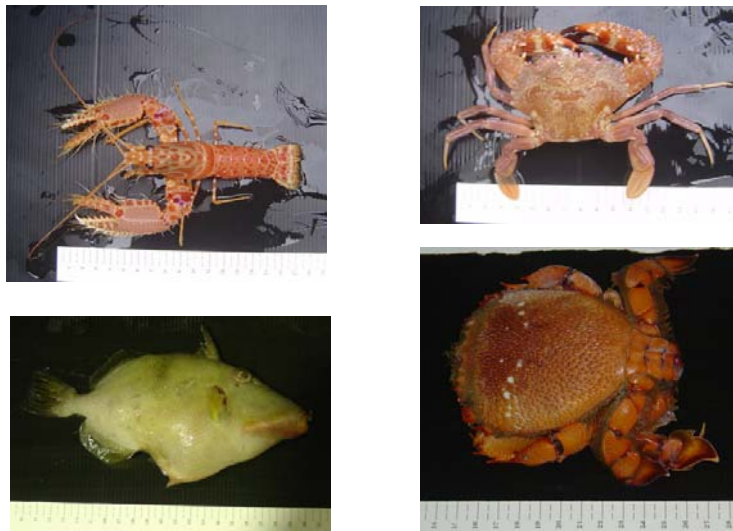


Fig. 5 Catch from trap

Table 3. Partial detail of Bottom Vertical Longline fishing survey of cruise no.13-7/2005

| St. no. | Operation no. | | Shooting | | Hauling | | Total hook number | Immersion time | Total catch | |
|---------|---------------|-----------|--------------|--------------|--------------|--------------|-------------------|------------------|-------------|-------------|
| | | | Start | Finish | Start | Finish | | | No. (pcs.) | Weight (kg) |
| 04 | 01 | Date | 26/7/2005 | 26/7/2005 | 26/7/2005 | 27/7/2005 | 720 | 2 hrs 28 min | 11 | 7.45 |
| | | Time | 1102 | 1140 | 1434 | 1540 | | | | |
| | | Latitude | 09°15'.90 N | 09°14'.41 N | 09°15'.70 N | 09°14'.50 N | | | | |
| | | Longitude | 118°43'.80 E | 118°44'.10 E | 118°43'.80 E | 118°44'.40 E | | | | |
| 05 | 02 | Date | 27/7/2005 | 27/7/2005 | 27/7/2005 | 27/7/2005 | 684 | 3 hrs 3 min | 7 | 2.63 |
| | | Time | 0540 | 0610 | 0913 | 1005 | | | | |
| | | Latitude | 09°16'.36 N | 09°15'.21 N | 09°16'.40 N | 09°15'.30 N | | | | |
| | | Longitude | 118°41'.10 E | 118°40'.20 E | 118°40'.90 E | 118°40'.32 E | | | | |
| 06 | 03 | Date | 28/7/2005 | 28/7/2005 | 28/7/2005 | 28/7/2005 | 666 | 3 hrs 15 min | 2 | 1.90 |
| | | Time | 0615 | 0645 | 0930 | 1025 | | | | |
| | | Latitude | 09°09'.28 N | 09°10'.84 N | 09°10'.60 N | 09°09'.35 N | | | | |
| | | Longitude | 118°30'.13 E | 118°30'.60 E | 118°30'.60 E | 118°31'.83 E | | | | |
| 07 | 04 | Date | 28/7/2005 | 28/7/2005 | 28/7/2005 | 28/7/2005 | 720 | 3 hrs 3 min | 7 | 4.03 |
| | | Time | 1415 | 1445 | 1748 | 1855 | | | | |
| | | Latitude | 09°10'.10 N | 09°09'.80 N | 09°10'.14 N | 09°09'.96 N | | | | |
| | | Longitude | 118°41'.30 E | 118°39'.80 E | 118°41'.38 E | 118°40'.14 E | | | | |
| 08 | 05 | Date | 29/7/2005 | 29/7/2005 | 29/7/2005 | 29/7/2005 | 720 | 2 hrs 20 min | 17 | 3.84 |
| | | Time | 0637 | 0710 | 0930 | 1047 | | | | |
| | | Latitude | 09°06'.64 N | 09°05'.53 N | 09°06'.70 N | 09°05'.67 N | | | | |
| | | Longitude | 118°35'.52 E | 118°34'.30 E | 118°35'.39 E | 118°34'.22 E | | | | |
| 09 | 06 | Date | 29/7/2005 | 29/7/2005 | 29/7/2005 | 29/7/2005 | 720 | 3 hrs 21 min | 13 | 10.94 |
| | | Time | 1429 | 1514 | 1750 | 1915 | | | | |
| | | Latitude | 09°06'.30 N | 09°06'.90 N | 09°06'.96 N | 09°06'.40 N | | | | |
| | | Longitude | 118°25'.30 E | 118°25'.90 E | 118°26'.82 E | 118°25'.43 E | | | | |
| 12 | 07 | Date | 3/8/2005 | 3/8/2005 | 3/8/2005 | 3/8/2005 | 720 | 2 hrs 55 min | 9 | 6.19 |
| | | Time | 0639 | 0710 | 1005 | 1110 | | | | |
| | | Latitude | 09°02'.86 N | 09°01'.72 N | 09°02'.85 N | 09°01'.80 N | | | | |
| | | Longitude | 118°25'.66 E | 118°24'.88 E | 118°25'.83 E | 118°25'.00 E | | | | |
| 13 | 08 | Date | 3/8/2005 | 3/8/2005 | 3/8/2005 | 3/8/2005 | 720 | 2 hrs 35 min | 14 | 14.25 |
| | | Time | 1328 | 1400 | 1635 | 1826 | | | | |
| | | Latitude | 09°00'.00 N | 08°59'.30 N | 09°00'.00 N | 08°59'.55 N | | | | |
| | | Longitude | 118°22'.30 E | 118°20'.90 E | 118°22'.30 E | 118°21'.46 E | | | | |
| 14 | 09 | Date | 4/8/2005 | 4/8/2005 | 4/8/2005 | 4/8/2005 | 648 | 3 hrs 20 min | 11 | 16.26 |
| | | Time | 0538 | 0610 | 0930 | 1035 | | | | |
| | | Latitude | 08°58'.98 N | 08°57'.97 N | 08°59'.00 N | 08°58'.10 N | | | | |
| | | Longitude | 118°14'.02 E | 118°15'.30 E | 118°14'.10 E | 118°15'.20 E | | | | |
| 15 | 10 | Date | 4/8/2005 | 4/8/2005 | 4/8/2005 | 4/8/2005 | 648 | 3 hrs 11 min | 6 | 1.36 |
| | | Time | 1228 | 1255 | 1606 | 1757 | | | | |
| | | Latitude | 08°56'.80 N | 08°55'.50 N | 08°56'.80 N | 08°55'.80 N | | | | |
| | | Longitude | 118°07'.40 E | 118°06'.70 E | 118°07'.50 E | 118°06'.90 E | | | | |
| 16 | 11 | Date | 5/8/2005 | 5/8/2005 | 5/8/2005 | 5/8/2005 | 648 | 25 hrs 45 min | N/R* | N/R* |
| | | Time | 0534 | 0607 | 0752 | 0907 | | | | |
| | | Latitude | 08°57'.66 N | 08°57'.02 N | 08°57'.90 N | 08°57'.50 N | | | | |
| | | Longitude | 118°22'.03 E | 118°20'.75 E | 118°22'.00 E | 118°21'.20 E | | | | |

* The method for experimentation failed not suited for analysis.

Table 4. Partial detail of Trap fishing survey of cruise no.13-7/2005

| Station no. | Operation no. | | Shooting | | Hauling | | Total no. of trap | Immersion time | Total catch | |
|-------------|---------------|-----------|--------------|--------------|--------------|--------------|-------------------|------------------|--------------|--------------|
| | | | Start | Finish | Start | Finish | | | No. (pcs.) | Weight (kg) |
| 04 | 01 | Date | 26/7/2005 | 26/7/2005 | 26/7/2005 | 26/7/2005 | 100 | 3 hrs 59 min | 22 | 7.78 |
| | | Time | 1030 | 1057 | 1556 | 1645 | | | | |
| | | Latitude | 09°14'.50 N | 09°15'.92 N | 09°15'.70 N | 09°14'.50 N | | | | |
| | | Longitude | 118°43'.65 E | 118°43'.60 E | 118°43'.60 E | 118°43'.80 E | | | | |
| 05 | 02 | Date | 26/7/2005 | 26/7/2005 | 27/7/2005 | 27/7/2005 | 100 | 12 hrs 20 min | 22 | 0.31 |
| | | Time | 1805 | 1825 | 0645 | 0735 | | | | |
| | | Latitude | 09°15'.14 N | 09°15'.81 N | 09°15'.70 N | 09°15'.20 N | | | | |
| | | Longitude | 118°35.30 E | 118°36'.41 E | 118°36'.52 E | 118°35'.25 E | | | | |
| 06 | 03 | Date | 28/7/2005 | 28/7/2005 | 28/7/2005 | 28/7/2005 | 100 | 4 hrs 36 min | No catch* | No catch* |
| | | Time | 0520 | 0550 | 1043 | 1135 | | | | |
| | | Latitude | 09°09'.30 N | 09°10'.67 N | 09°10'.63 N | 09°09'.40 N | | | | |
| | | Longitude | 118°31.40 E | 118°31'.82 E | 118°31'.89 E | 118°31'.50 E | | | | |
| 08 | 04 | Date | 29/7/2005 | 29/7/2005 | 29/7/2005 | 29/7/2005 | 60 | 5 hrs 1 min | No catch | No catch |
| | | Time | 0547 | 0604 | 1105 | 1145 | | | | |
| | | Latitude | 09°07'.00 N | 09°06'.58 N | 09°07'.14 N | 09°06'.70 N | | | | |
| | | Longitude | 118°32.65 E | 118°33'.25 E | 118°32'.51 E | 118°33'.20 E | | | | |
| 14 | 05 | Date | 3/8/2005 | 3/8/2005 | 4/8/2005 | 4/8/2005 | 60 | 10 hrs 20 min | 10 | 0.29 |
| | | Time | 1933 | 1950 | 0630 | 0715 | | | | |
| | | Latitude | 08°59'.94 N | 08°59'.90 N | 09°00'.00 N | 08°59'.90 N | | | | |
| | | Longitude | 118°14.19 E | 118°15'.17 E | 118°15'.10 E | 118°14'.20 E | | | | |
| 15 | 06 | Date | 4/8/2005 | 4/8/2005 | 6/8/2005 | 6/8/2005 | 62 | 35 hrs | N/R** | N/R** |
| | | Time | 1848 | 1900 | 0600 | 0710 | | | | |
| | | Latitude | 08°56'.98 N | 08°56'.20 N | 08°57'.04 N | 08°56'.60 N | | | | |
| | | Longitude | 118°20.27 E | 118°19'.74 E | 118°20'.31 E | 118°20'.00 E | | | | |

* Main line cut

** The method for experimentation failed not suited for analysis

Fig. 6 Cruise track map: cruise no.13-7/2005

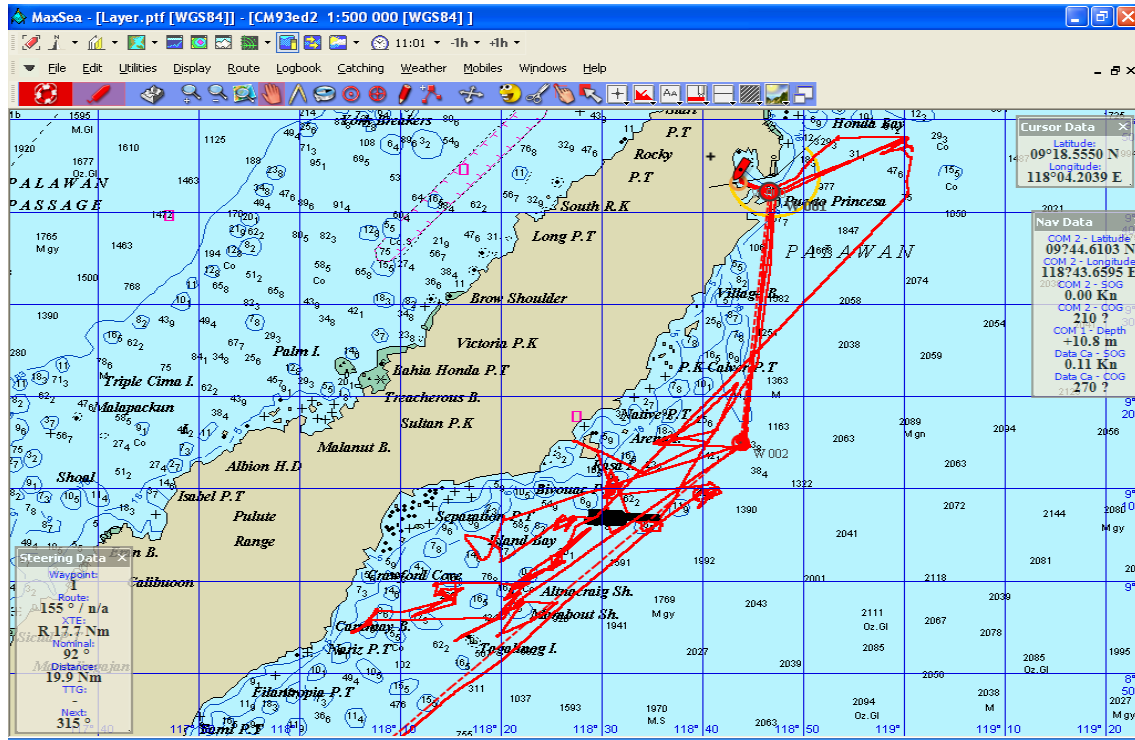


Fig. 7 Cruise track map at Station 1-3: cruise no.13-7/2005

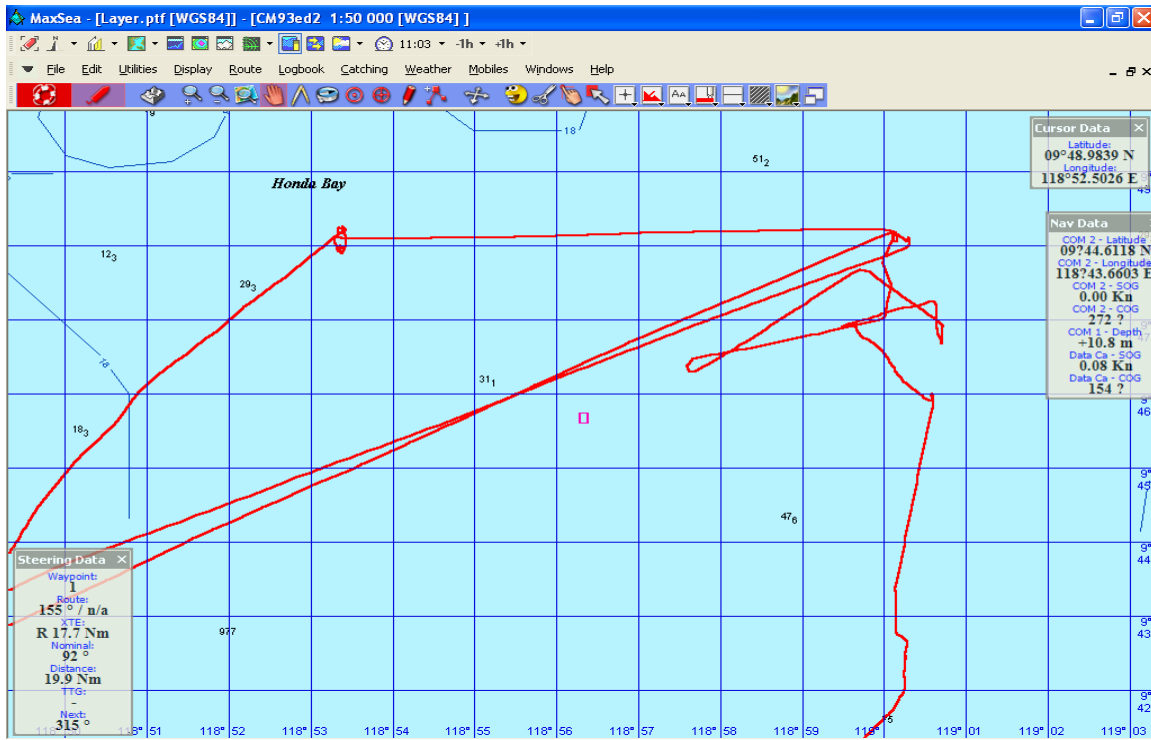


Fig. 8 Cruise track map at Station 4 -16: cruise no.13-7/2005

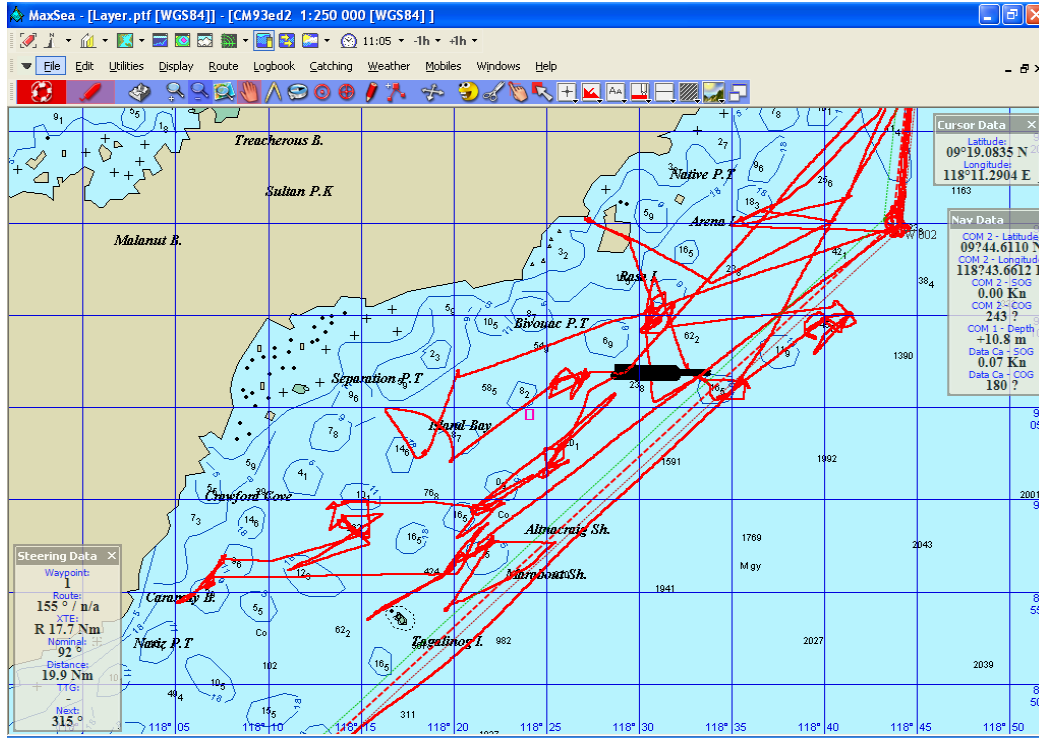
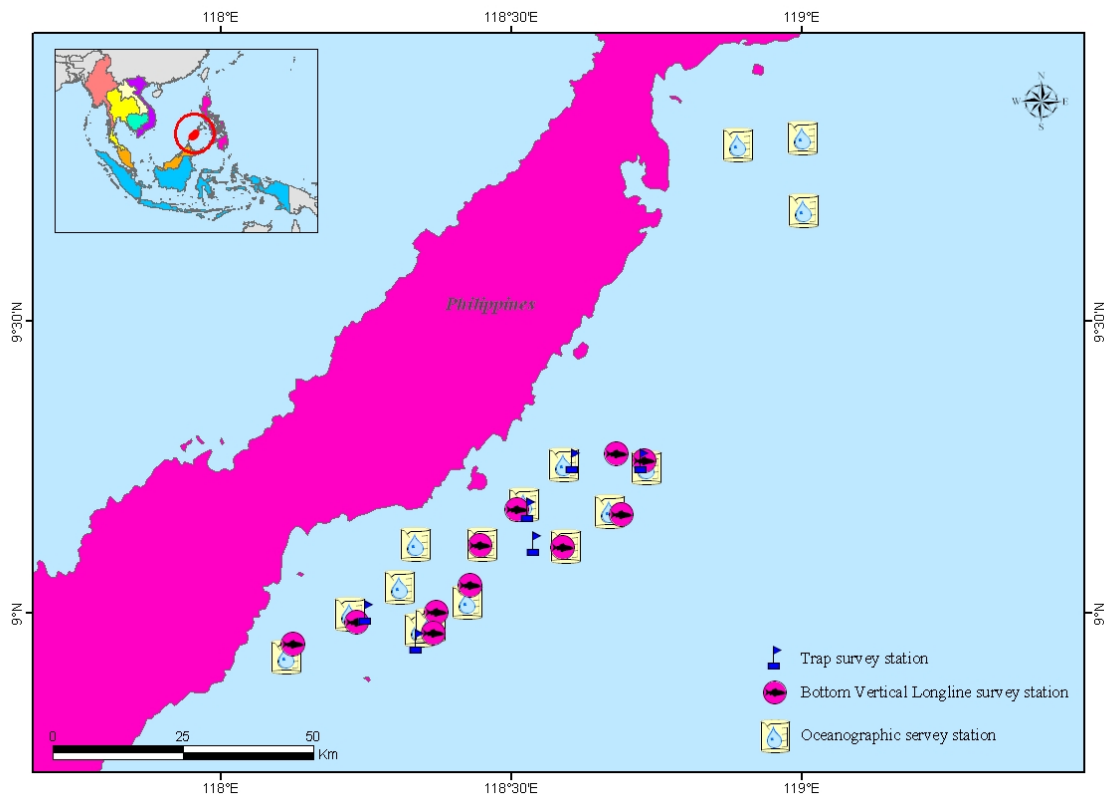
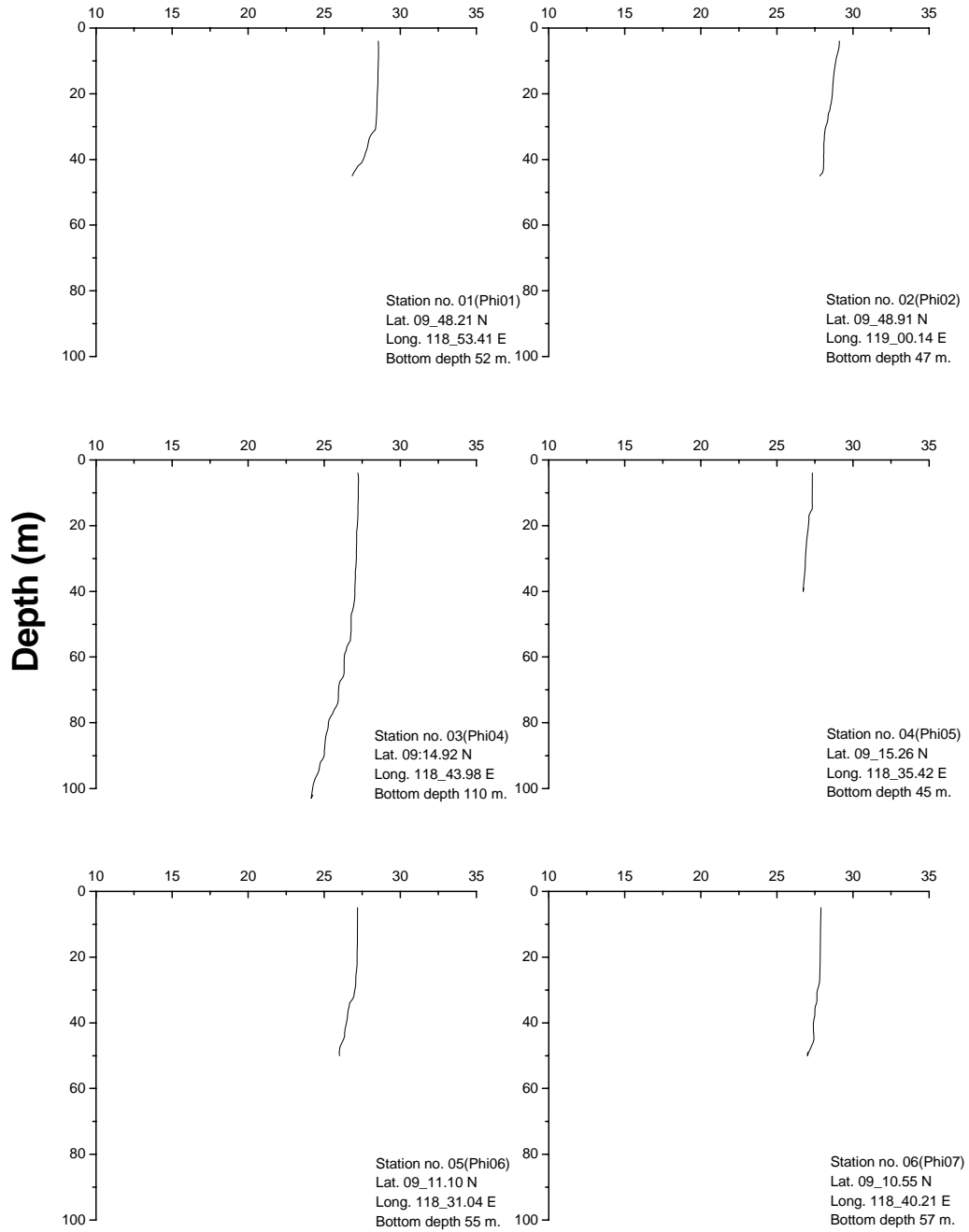


Fig. 9 Oceanographic and fishing survey stations of cruise no.13-7/2005

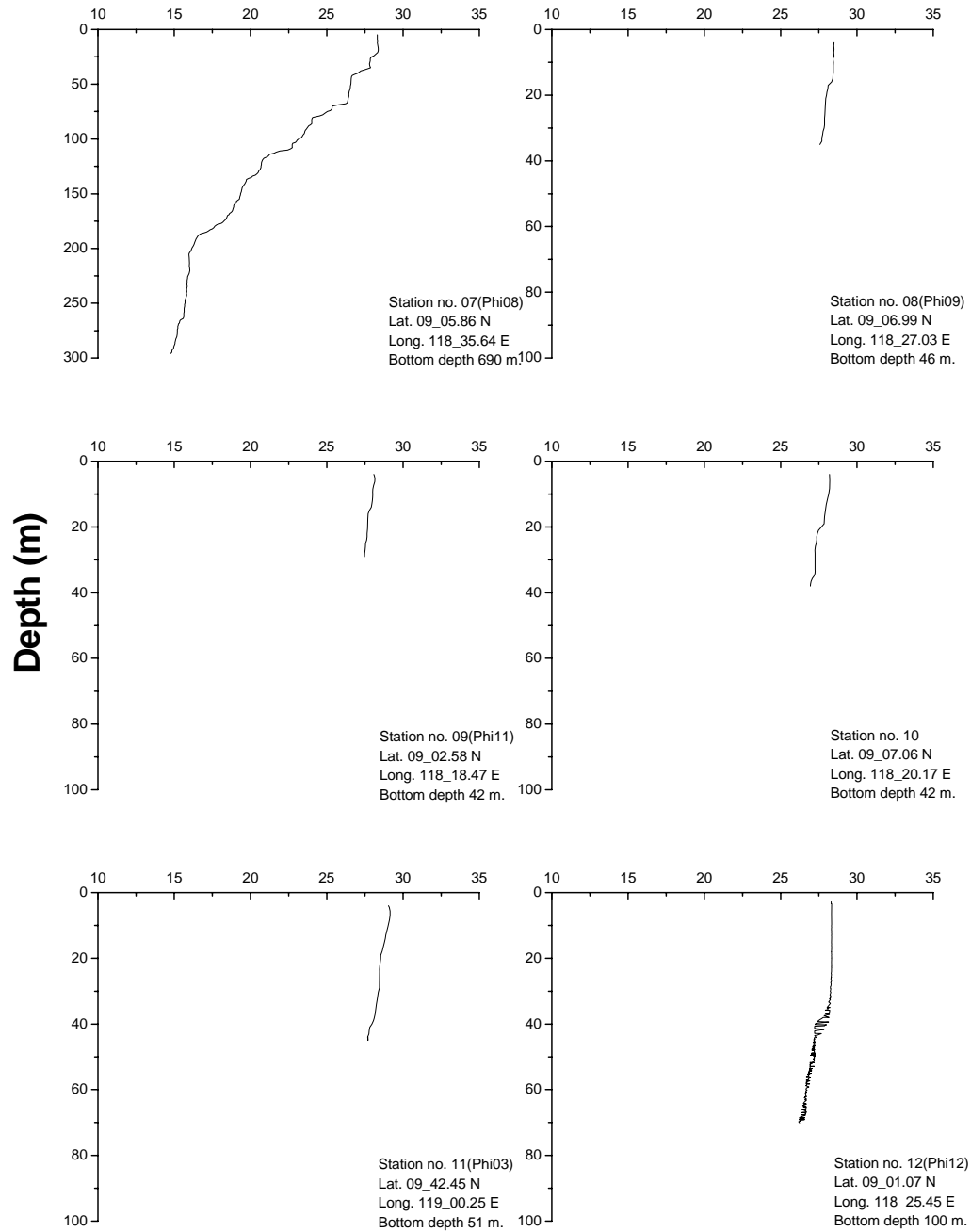


Appendix I

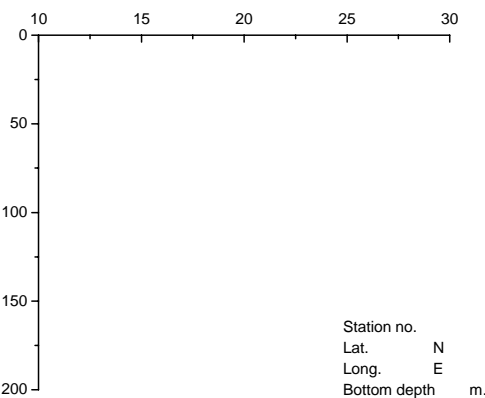
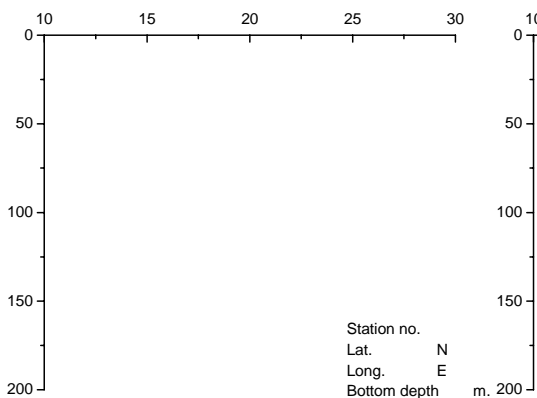
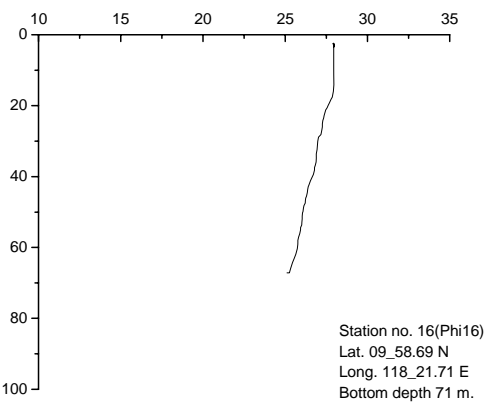
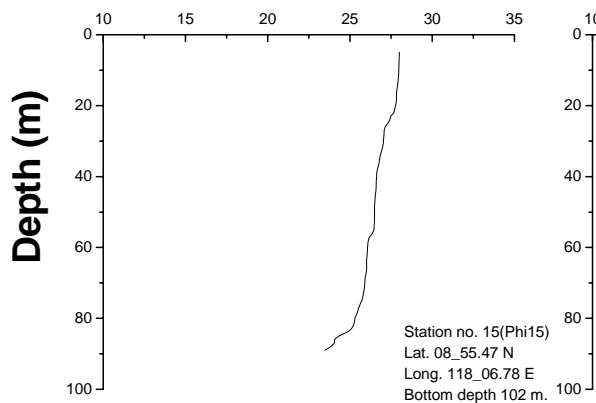
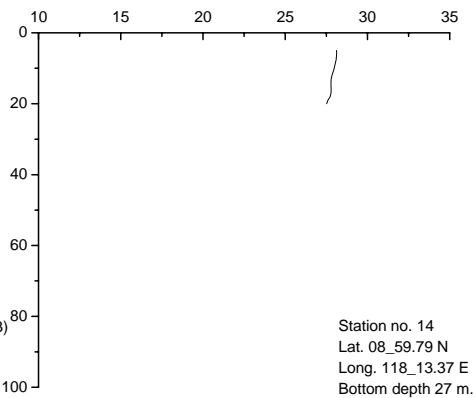
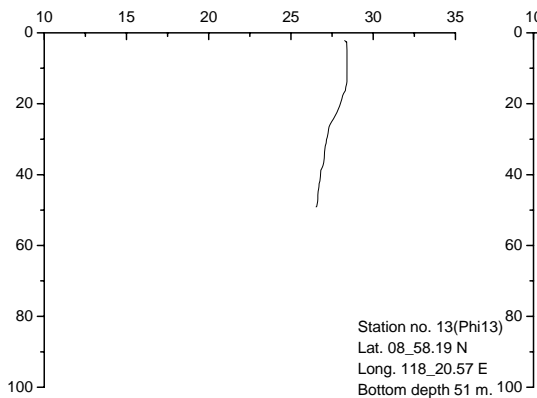
Temperature (°C)



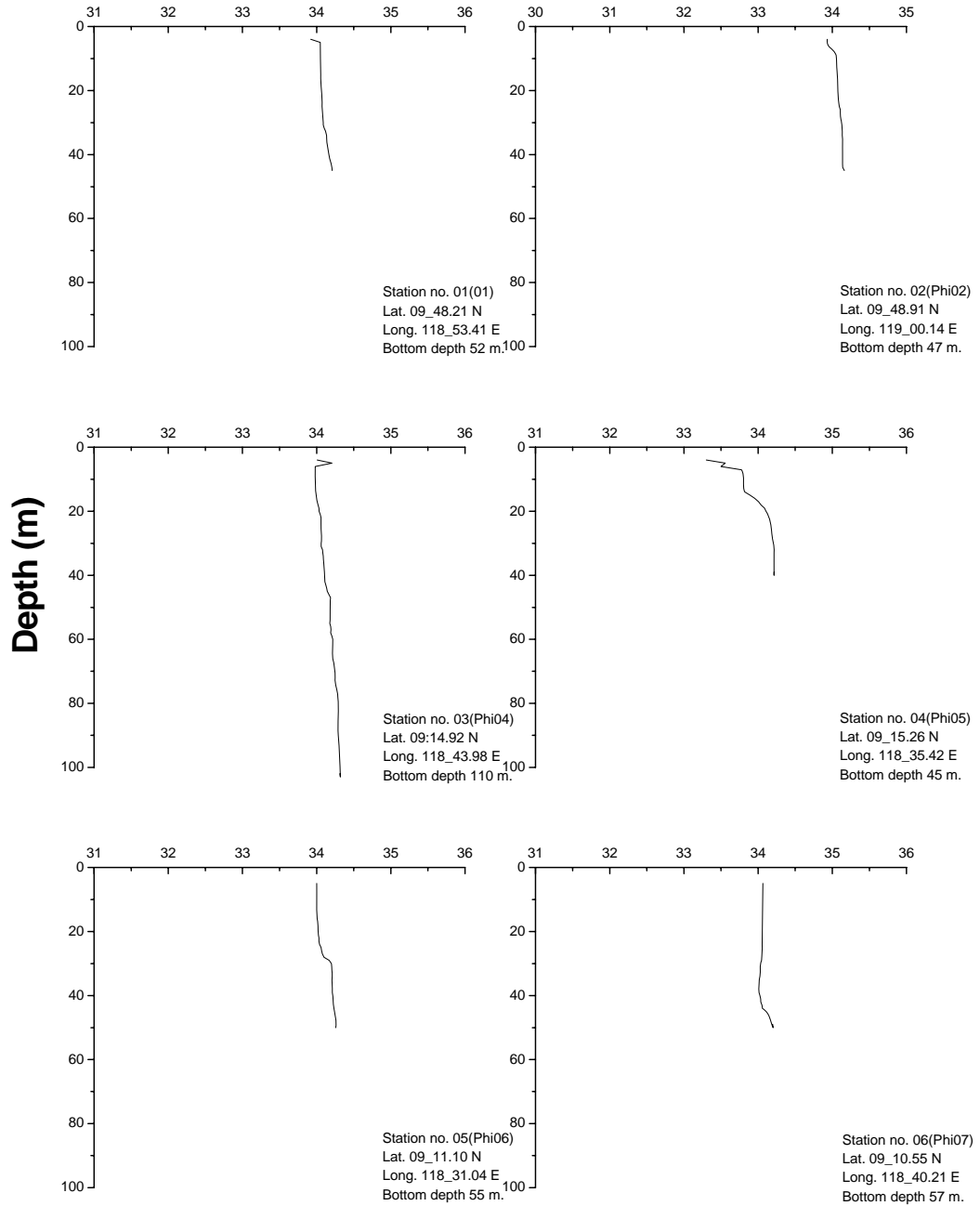
Temperature (°C)



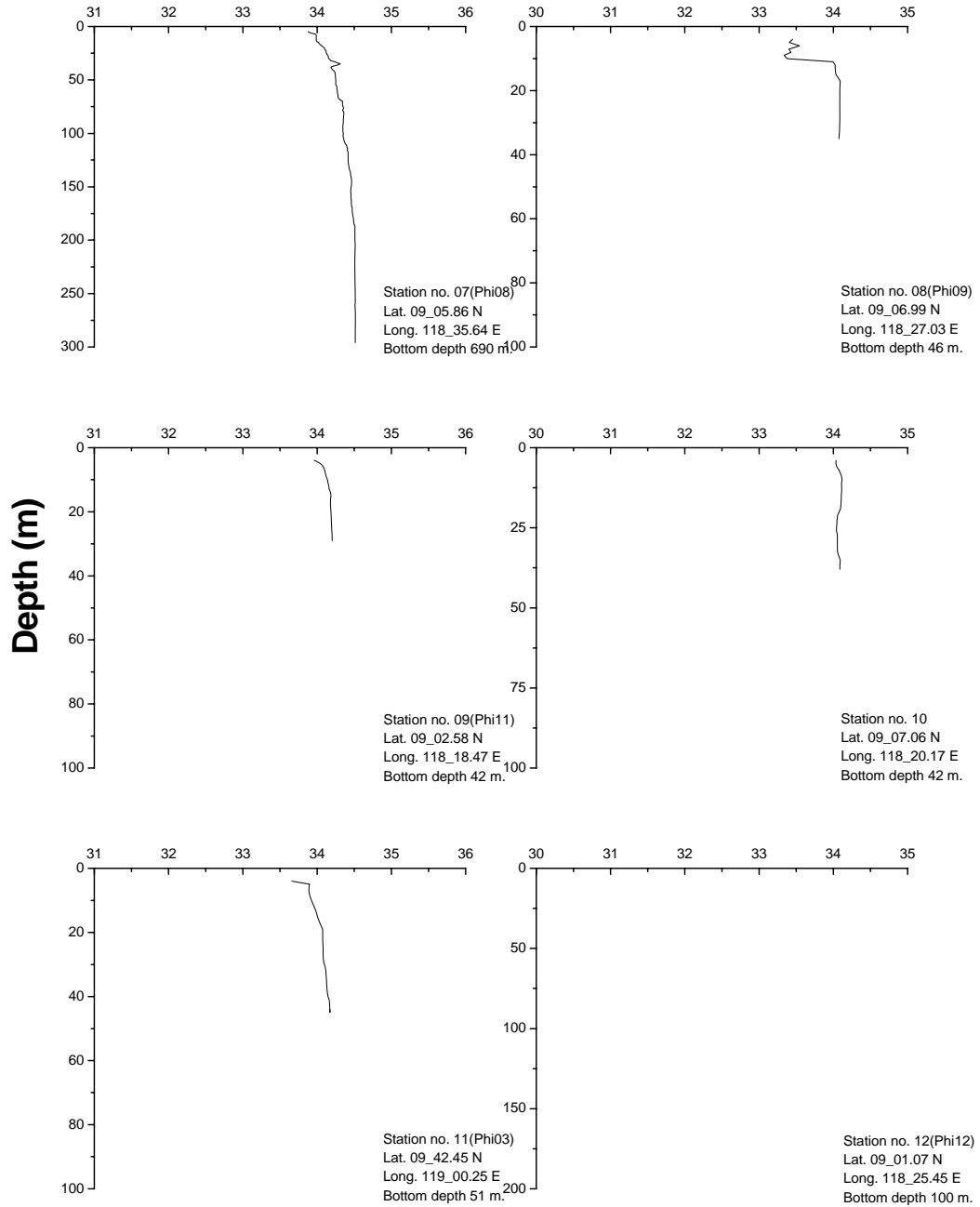
Temperature (°C)



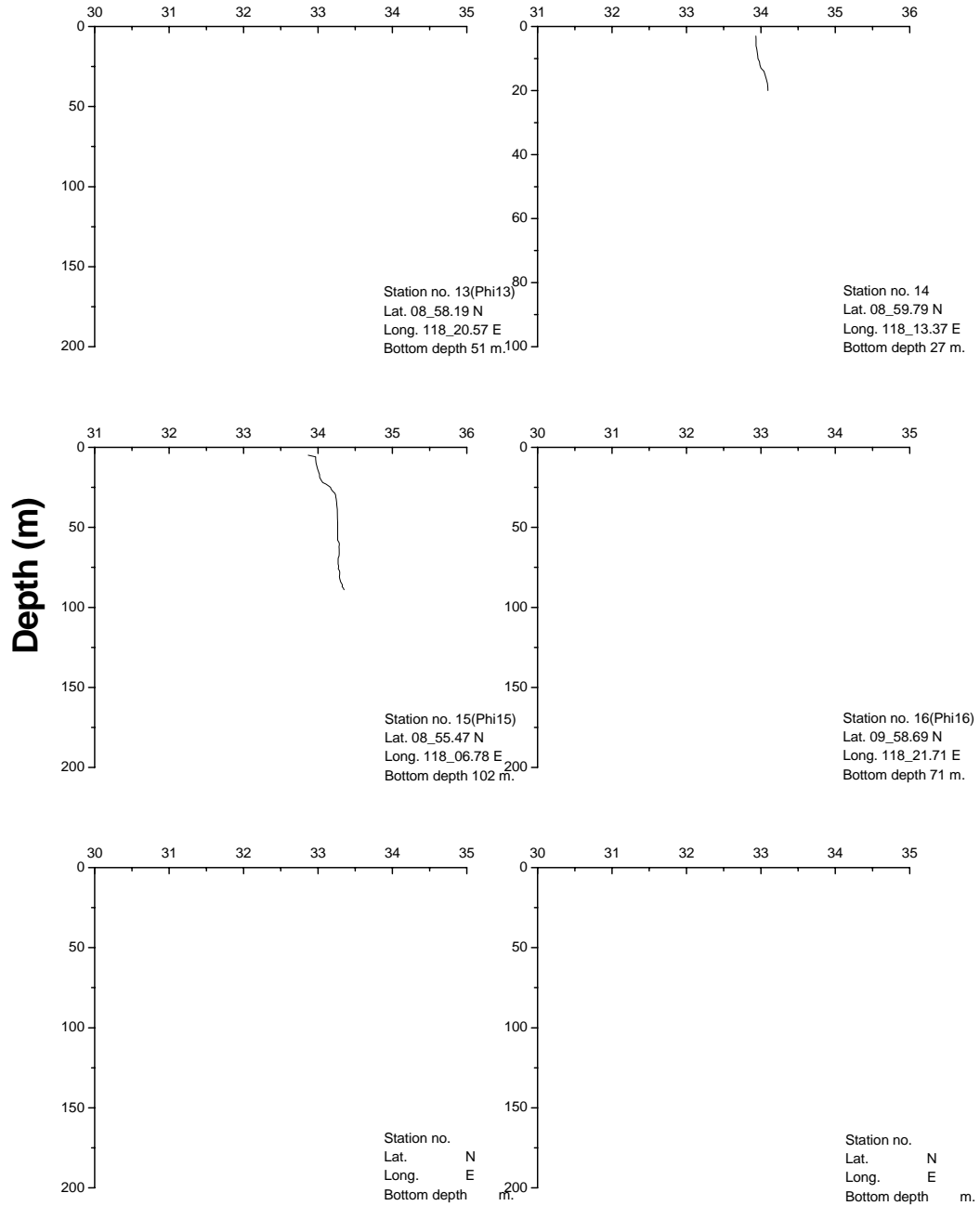
Salinity (PSU)



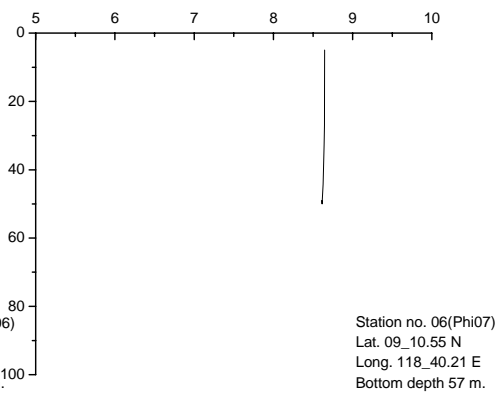
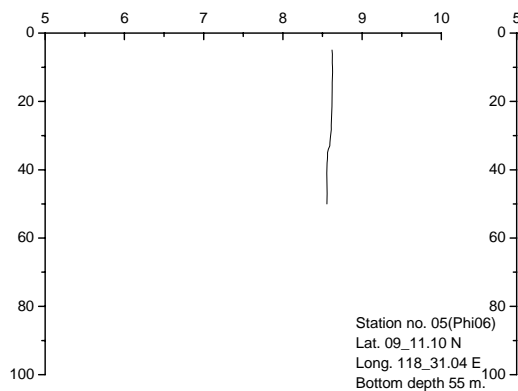
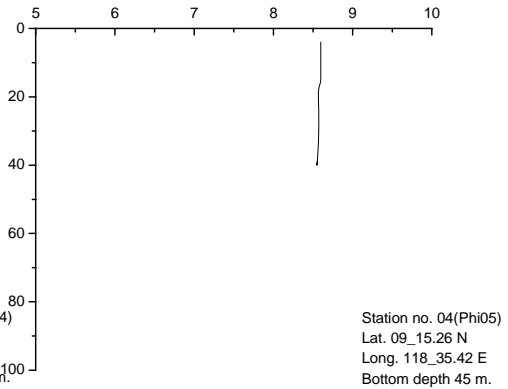
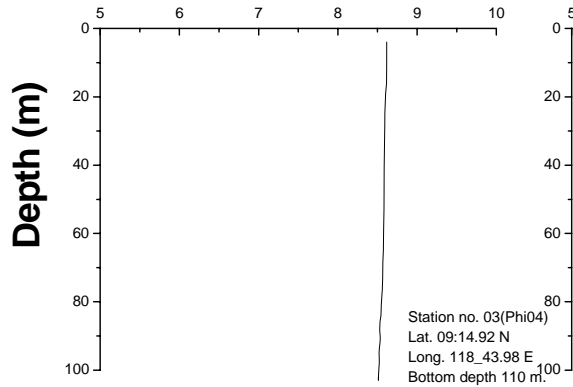
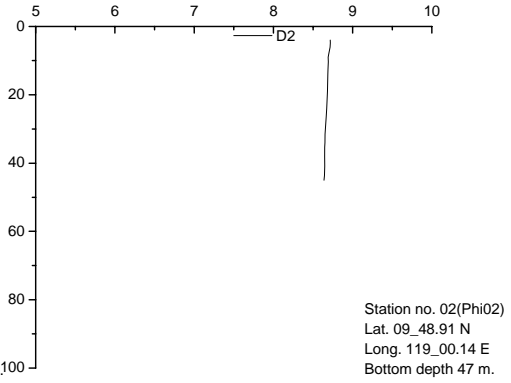
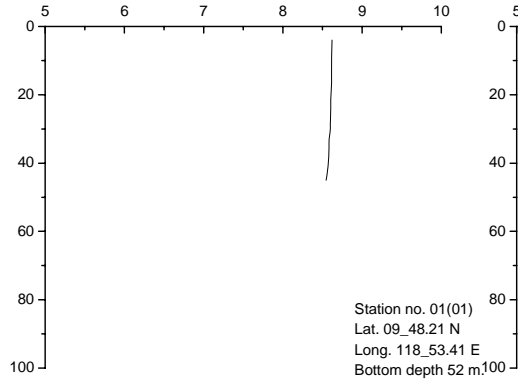
Salinity (PSU)



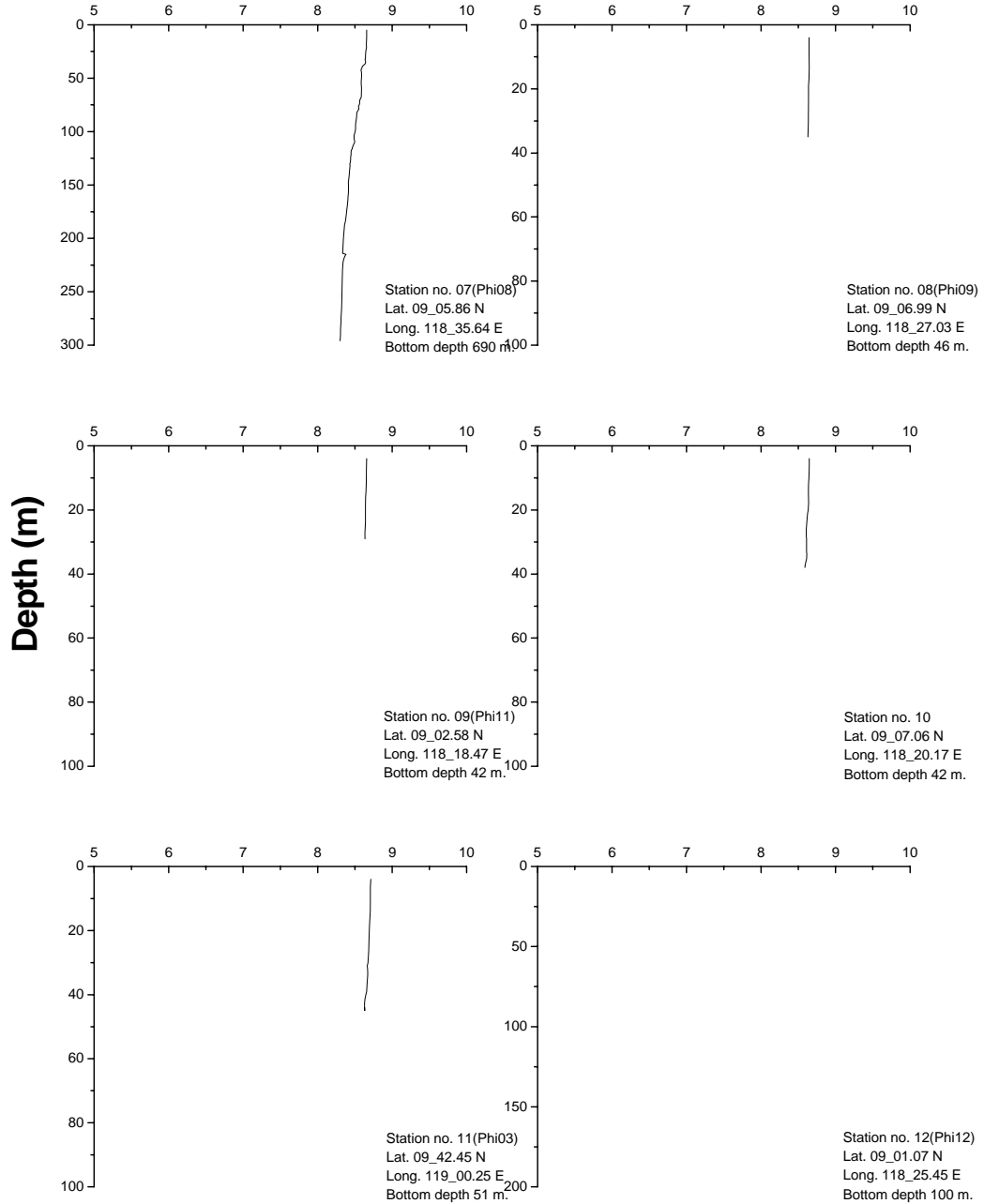
Salinity (PSU)



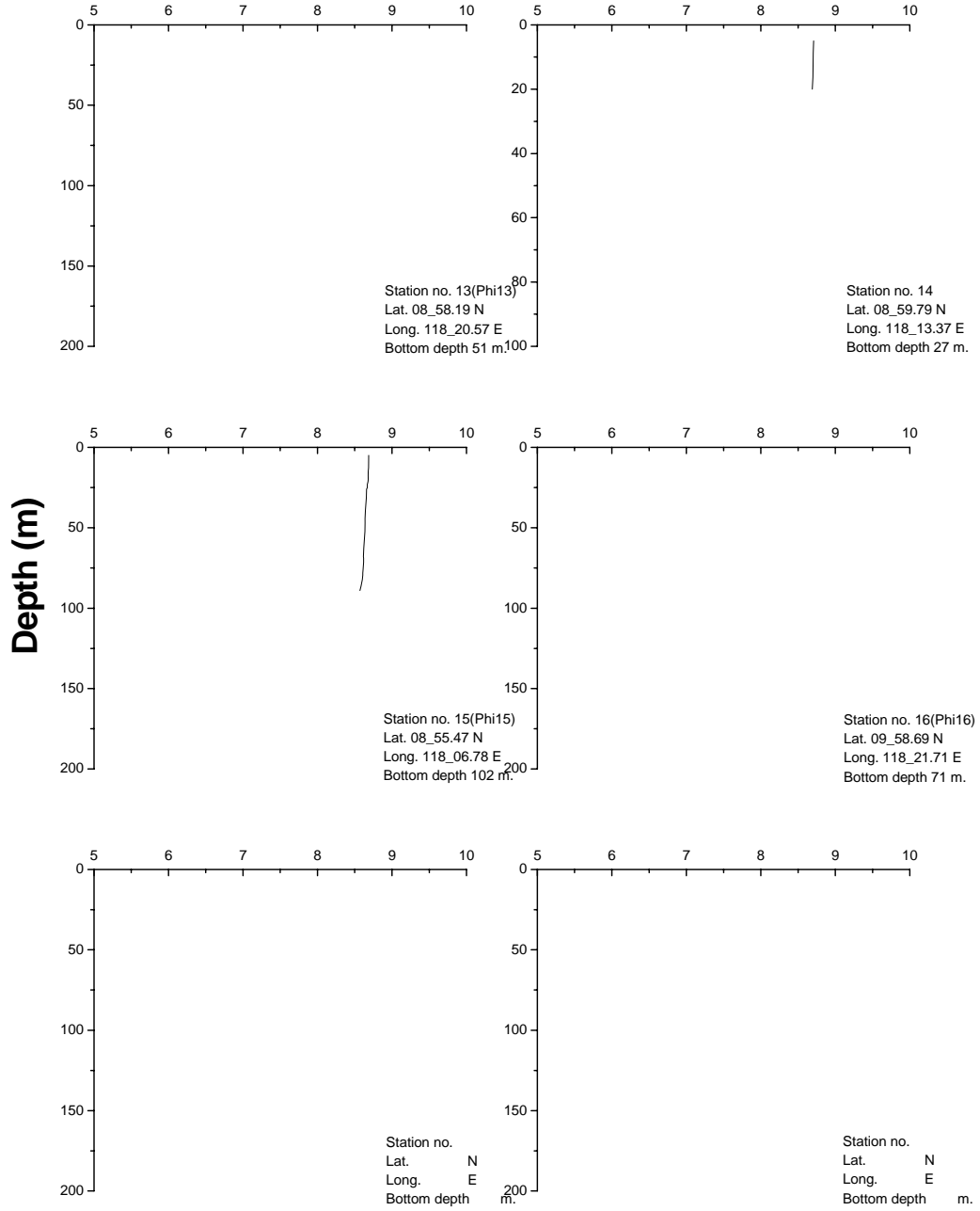
pH



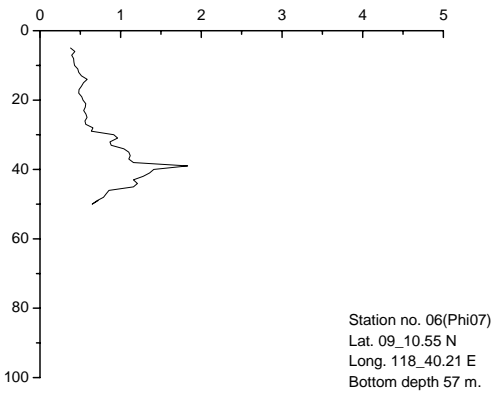
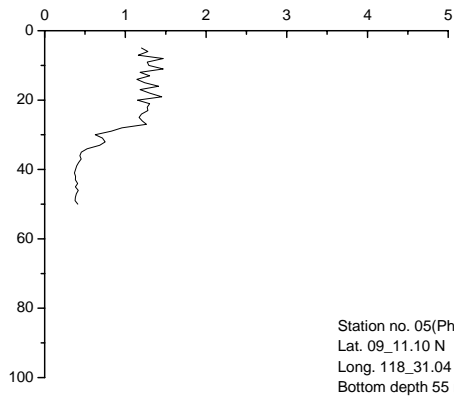
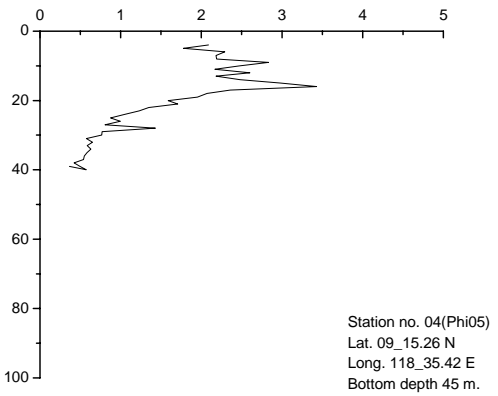
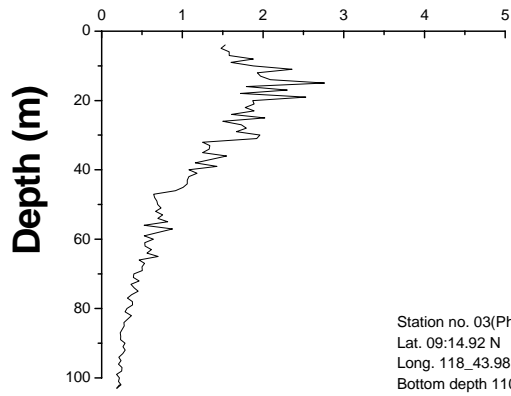
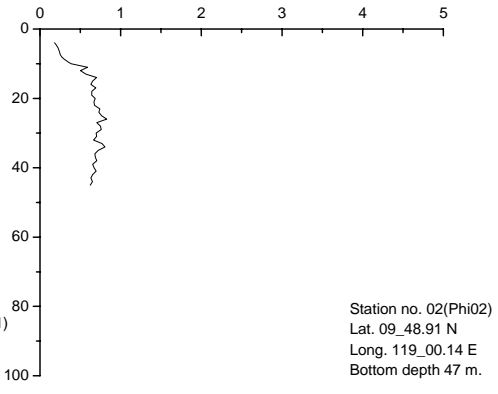
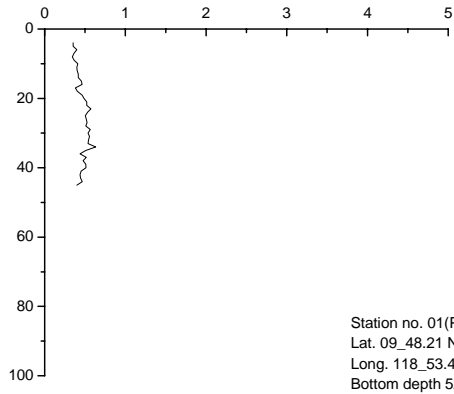
pH



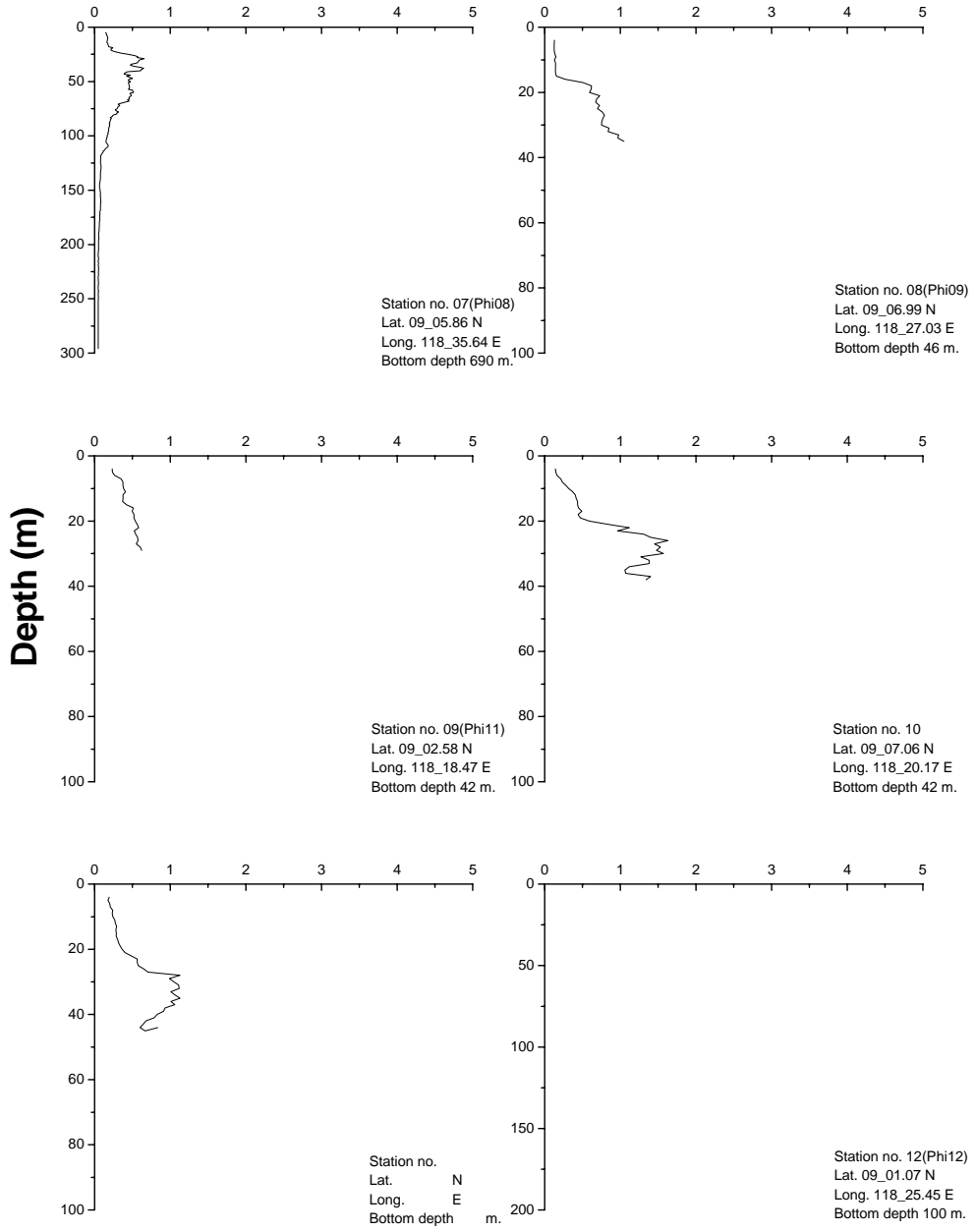
pH



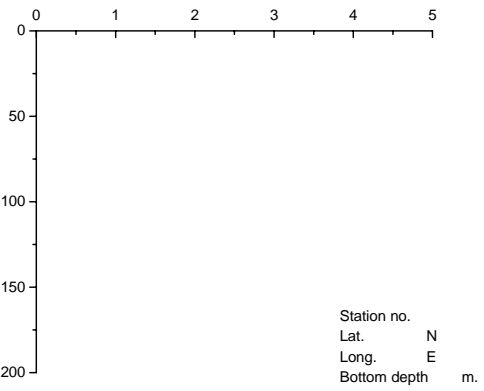
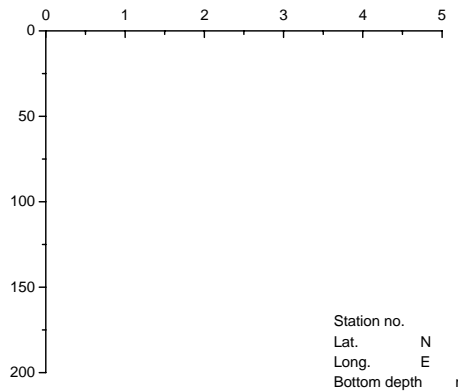
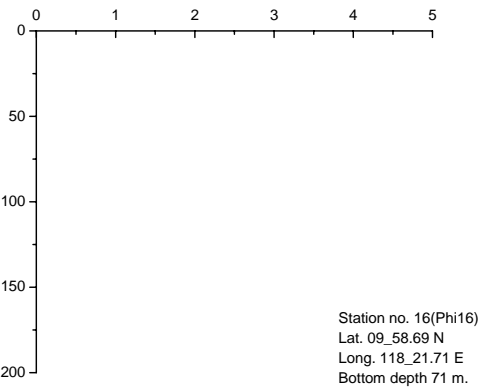
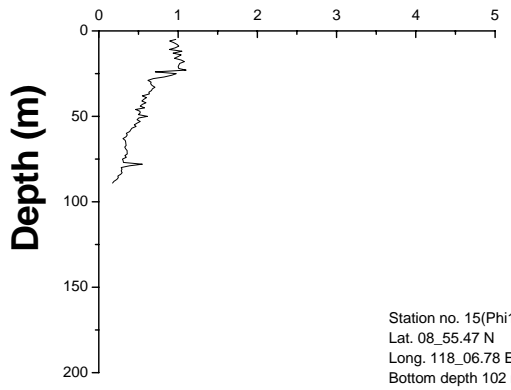
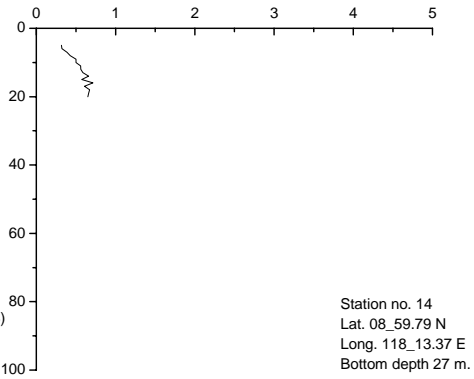
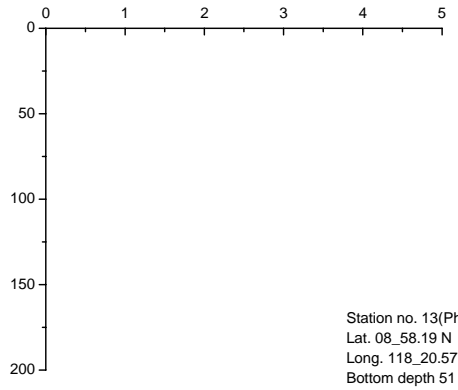
Fluorescence



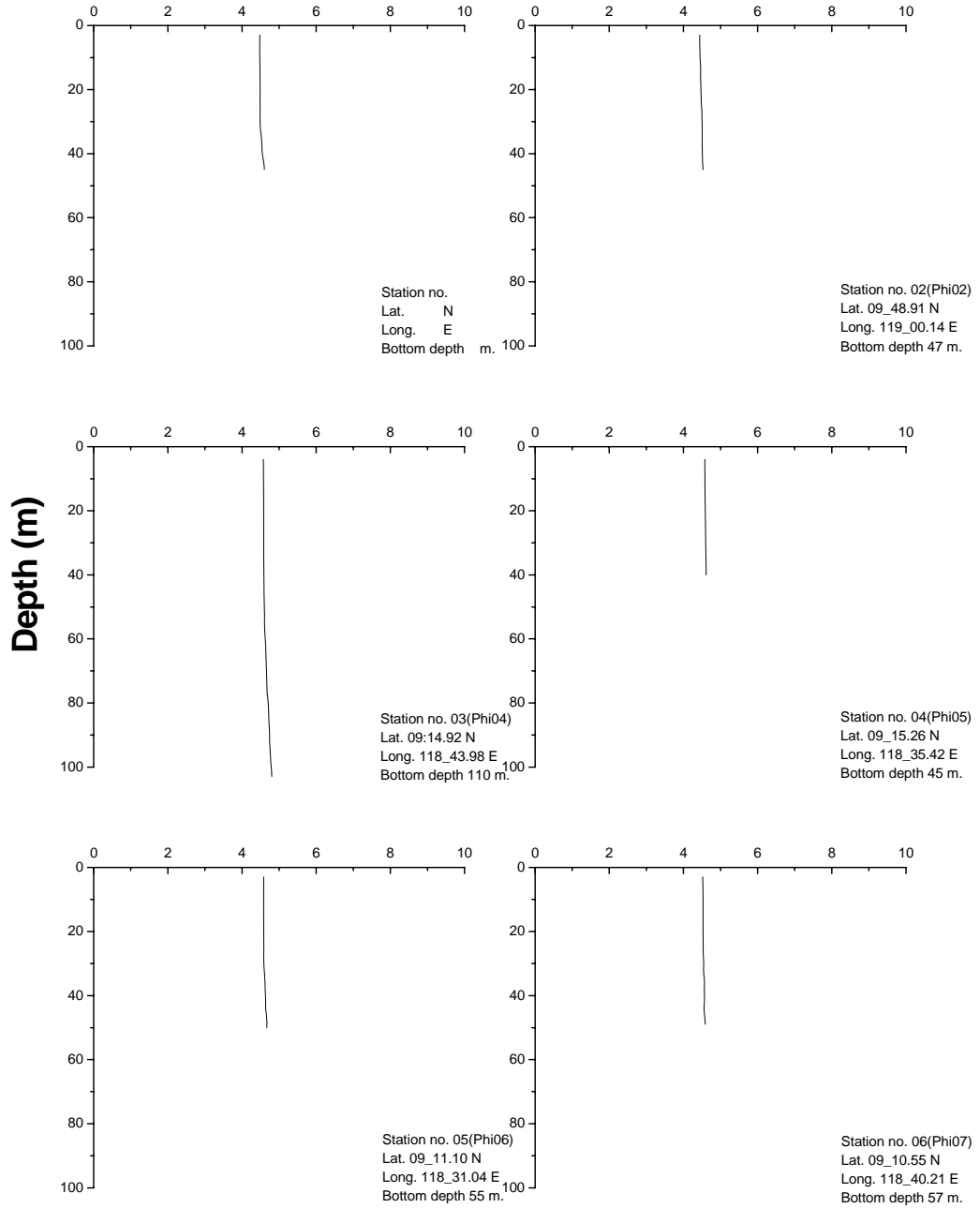
Fluorescence



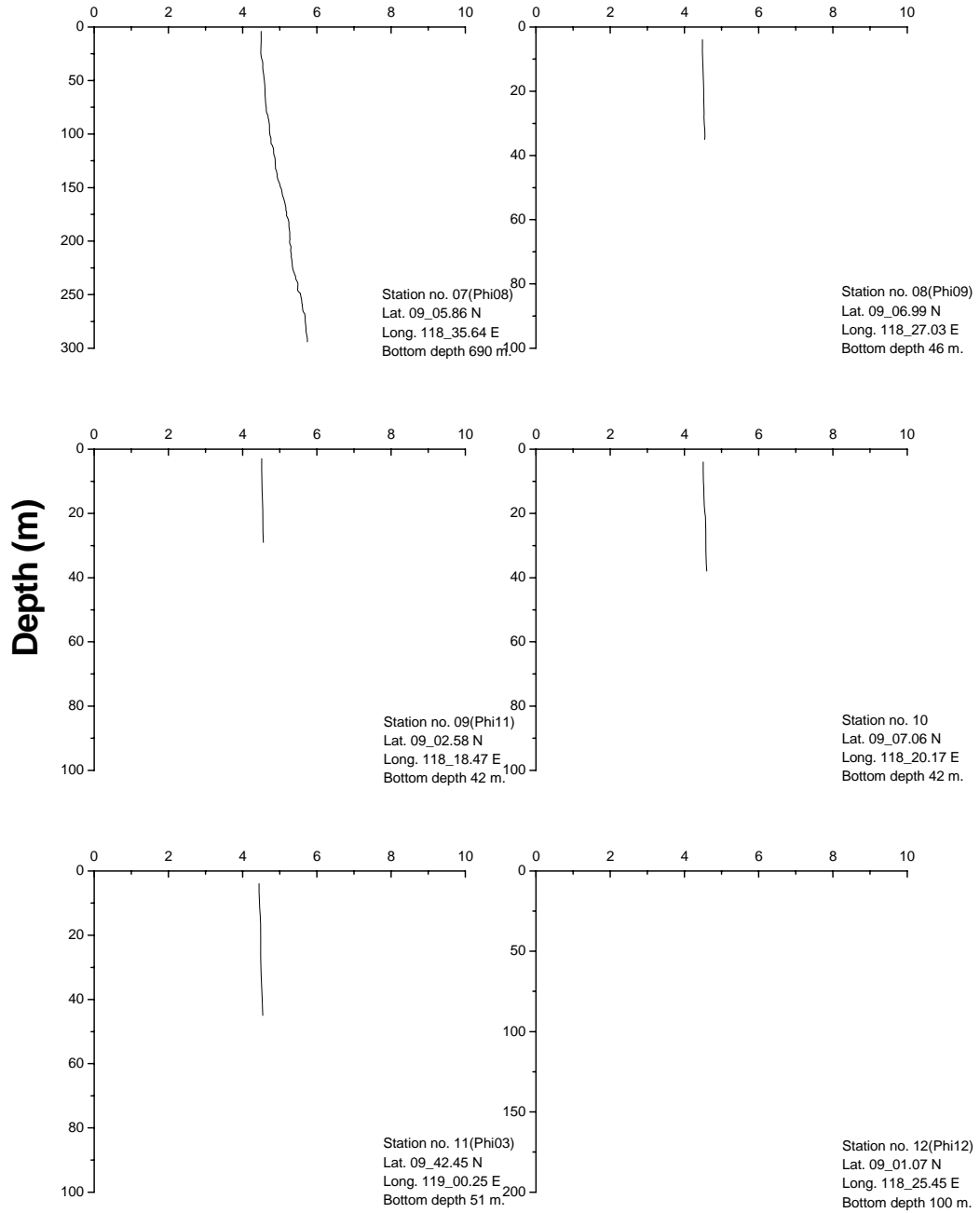
Fluorescence



Oxygen (ml/l)



Oxygen (ml/l)



Oxygen (ml/l)

