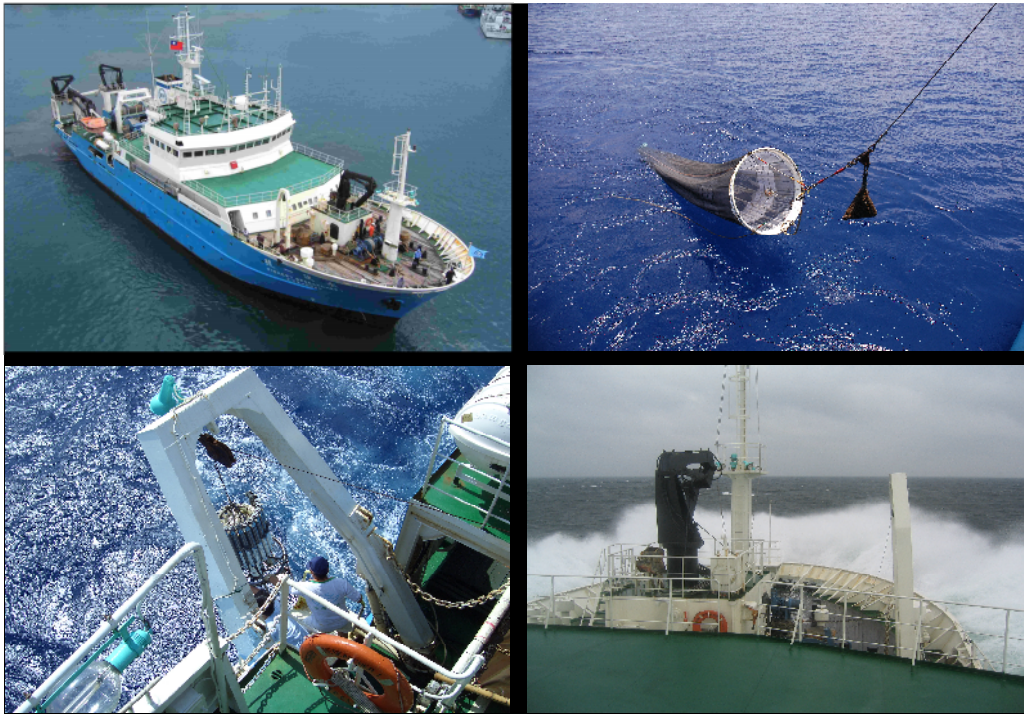




Cruise Report of TaiCOFI Surveys : 2003-2006

2003-2006 年台灣周邊海域漁場環境監測航次報告



Fisheries Research Institute
Council of Agriculture, Executive Yuan
Keelung, Taiwan
December 2010

行政院農業委員會水產試驗所

中華民國 99 年 12 月

序

台灣四面環海，地域有限，向海洋發展見證了台灣人民不畏艱苦的勤奮特性，海洋漁業亦提供經濟發展與國民優質動物性蛋白質來源。我國漁業相關研究方向從早期的新漁場開發，漁具漁法效率的提升，然隨著氣候環境的變遷與工業開發的影響，我國漁業研究趨勢亦隨國際演進，資源評估與管理、漁場環境保護與造成已成為當今漁業研究主流。

水溫、鹽度、水團消長等海況因子是影響漁場、漁期變動的主要因子。因此，欲對台灣經濟海域內漁業資源之動態過程有所瞭解，除了漁業生物學研究外，海洋環境狀態是最基本，也是最重要的背景資訊。緣此，本所依據影響我國海域之大陸沿岸水、南中國海表層水、黑潮、黑潮支流、黑潮與東海陸棚交界處的湧昇水等主要水團特性，並以享有盛名的美國加州沿岸漁場環境監測計畫(California Cooperative Oceanic Fisheries Investigations, CALCOFI)為藍圖，擘劃台灣周邊海域漁場環境監測計畫的架構，針對台灣周邊海洋環境進行大規模調查。

氣候變遷已被證實為影響許多漁業資源變動的主要原因，結合氣候學、海洋學、海洋生態學以探討生態系結構轉換(regime shift)對漁業資源的整體影響，是未來水產資源研究的重要議題。綜觀國內，唯有本計畫能有系統地提供長期船測資料供各界參考，本所長期以來亦投注許多心力，已累積豐富的成果。惟囿於人力、時間與篇幅精簡所需，本專刊著重於提供周邊海域水溫、鹽度、葉綠素甲之歷年變化，衷心祈望藉由本專刊的發行，能為推動我國漁業研究新局面盡一份棉薄之力。

所長

蘇偉成 謹誌

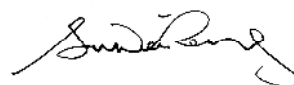
中華民國九十九年十二月

Preface

Taiwan is an island in the western Pacific Ocean with limited expanse. People here are diligent, exploring the sea regardless of all the difficulties and danger. Marine fisheries provide a way for economic growth and a source for high quality animal proteins. In the past, exploring new fishing grounds and improving the efficiency of fishing gears was the mainstream of fisheries research. However, with the changing of climate and industrialization in recent years, stock assessment, marine environment protection and fishing ground establishment has become the priority worldwide.

Water temperature, salinity and the dynamics between water masses are the main factors that effect the position of fishing grounds and fishing season. As a result, the dynamics of fishing ground environment, e.g. temperature, salinity, are the basis and the most important background information for subsequent stock assessment. Therefore, based on the hydrography of China Coastal Current, South China Sea Water, Kuroshio Water and Kuroshio Branch Water, Fisheries Research Institute implemented the Taiwan Cooperative Oceanic Fisheries Investigations (TaiCOFI) program to investigate in the dynamics between fishery resources and environmental factors. Special thanks have to be expressed to Professor Emeritus Dr. Kawasaki of Tohoku University and Dr. Nancy Lo of the Southwest Fisheries Science Center, for their valuable advices to the program. In addition, we also learn a lot from CALCOFI (California Cooperative Oceanic Fisheries Investigations) through academic exchange.

Climate change was proven to be the main cause of the fluctuation of some fisheries resources. In the future, multi-discipline studies including climatology, oceanography and marine ecology will be the most important issue for fishery researchers. However, there was a scarcity of long term and systematic observations of waters around Taiwan. Therefore, Fisheries Research Institute published 「Cruise Report of TaiCOFI Surveys : 2003-2006」 to provide our investigation results to the public. We hope our investigation results will be helpful to fishery researchers in Taiwan and contribute more to the society, leading fisheries in Taiwan towards sustainability.



Director, Fisheries Research Institute

前言

近年來由於全球氣候變遷及海洋環境污染問題日益嚴重，許多國家已致力於海洋環境及生物資源之基礎探測與資料庫之建置。然以往我國有關海洋方面之研究計畫多侷限於局部海域之短期研究，觀測線或觀測點常隨計畫主題改變而改變，缺乏長期而有系統性的調查資料，再者，多數計畫係以海洋物理化學為研究重點，漁業研究學者欲將這些資料應用在水產資源研究上，著實不易。

有鑑於此，水產試驗所於 2003 年起著手實施「台灣周邊海域漁場環境監測」計畫，於周邊海域設置 62 個測站按季蒐集水溫、鹽度、營養鹽、葉綠素、浮游動物等漁場環境資訊，嘗試透過此全面性之調查來瞭解台灣周邊海域長期水文、海況及漁業生物時空分佈資訊，進而掌握影響台灣周邊海域漁業資源變動的機制。六年來，承蒙各方提供寶貴之經驗與建議，不斷改進海洋探測科儀操作及採樣相關流程，在本所同仁與國內相關學術單位的共同努力下，無論在各項科儀操作效率、漁場環境調查技術或漁業生物研究上均已小有成果。

本專刊彙集本所於 2003 至 2006 年執行「台灣周邊海域漁場環境監測」計畫(農委會科技計畫編號:92 農科-9.1.1-水-A5、93 農科-9.1.1-水-A4(1)、94 農科-14.1.1-水-A3、95 農科-14.1.1-水-A3)之調查成果，計畫執行之海上採樣作業流程、調查項目實驗檢測流程、各航次出海採樣及樣本分析人員均有詳述於後，此外，利用 Surfer 軟體以圖示方式刊出台灣周邊海域之水溫、鹽度、葉綠素之調查成果以供各界參考。本計畫內容涉及廣泛專業領域，也由於人力及經驗的關係，雖戮力以赴亦難免有疏漏不周之處，希冀各界先進不吝賜教斧正。

Introduction

With the changing of climate and the growing of marine environmental pollutions in recent years, many countries have devoted to establishing their database for marine environment and aquatic living resources. However, in the past, marine research programs in Taiwan were mostly confined to a short time scale and of a limited region. Besides, transects or stations of surveys were usually changing with the changing of projects, resulted in a scarcity of long term and systematic observations of waters around Taiwan. Furthermore, most programs were aimed at marine chemistry and physics studies. It is hard for fishery scientists to incorporate that information into fishery stock assessment.

As a result, Fisheries Research Institute implemented 「Taiwan Cooperative Oceanic Fisheries Investigations, TaiCOFI」 program in 2003 to conduct quarterly cruises to collect water temperature, salinity, nutrients, chlorophyll-*a* and zooplankton measurements at 62 stations in the surrounding waters of Taiwan. Through this thorough investigation, we try to understand the coupling of physical, chemical and biological dynamics in the surrounding waters of Taiwan to figure out the factors associated with the fluctuation of fishery resources. For the past 6 years, we really appreciated for the valuable advices from academic communities to improve our field sampling techniques and operation procedures of marine observation instrument. With the hardworking of our staff members and associated academic organizations, now we have preliminary achievements in the operating efficiency of marine observation instruments, fishing ground investigation techniques and fisheries biology research.

The data presented in this report were collected during the cruises from 2003 to 2006 of the TaiCOFI program. Data from the cruises were collected and processed by personnel of FRI and Associate Professor Cheng Shiue-Yuan of National Taiwan Ocean University. Standard procedures of field program and sample analysis are described in detail and the distribution of water temperature, salinity and chlorophyll-*a* are illustrated in figures for each cruise. Finally, we will extent our special thanks for your advices to improve this cruise report.

目錄

前言	II
目錄	IV
海上採樣作業流程	VIII
樣本實驗檢測流程	X
計畫主持人	XII
計畫執行人員	XII
略語表	XIII
參考文獻	XIV
圖 01. 2003-02 航次水溫分布	1
圖 02. 2003-05 航次水溫分布	2
圖 03. 2003-12 航次水溫分布	3
圖 04. 2004-02 航次水溫分布	4
圖 05. 2004-05 航次水溫分布	5
圖 06. 2004-08 航次水溫分布	6
圖 07. 2004-11 航次水溫分布	7
圖 08. 2005-01 航次水溫分布	8
圖 09. 2005-04 航次水溫分布	9
圖 10. 2005-07 航次水溫分布	10
圖 11. 2005-10 航次水溫分布	11
圖 12. 2006-01 航次水溫分布	12
圖 13. 2006-05 航次水溫分布	13
圖 14. 2006-07 航次水溫分布	14
圖 15. 2006-10 航次水溫分布	15
圖 16. 2003-02 航次鹽度分布	16
圖 17. 2003-05 航次鹽度分布	17
圖 18. 2003-12 航次鹽度分布	18
圖 19. 2004-02 航次鹽度分布	19
圖 20. 2004-05 航次鹽度分布	20
圖 21. 2004-08 航次鹽度分布	21
圖 22. 2004-11 航次鹽度分布	22
圖 23. 2005-01 航次鹽度分布	23
圖 24. 2005-04 航次鹽度分布	24
圖 25. 2005-07 航次鹽度分布	25
圖 26. 2005-10 航次鹽度分布	26

圖 27. 2006-01 航次鹽度分布	27
圖 28. 2006-05 航次鹽度分布	28
圖 29. 2006-07 航次鹽度分布	29
圖 30. 2006-10 航次鹽度分布	30
圖 31. 2003 年 2 月、5 月及 12 月微型葉綠素甲(Nano-chl- <i>a</i>)分布	31
圖 32. 2004 年 2 月、5 月、8 月及 11 月微型葉綠素甲(Nano-chl- <i>a</i>)分布	32
圖 33. 2005 年 1 月、4 月、7 月及 10 月微型葉綠素甲(Nano-chl- <i>a</i>)分布	33
圖 34. 2006 年 1 月、5 月、7 月及 10 月微型葉綠素甲(Nano-chl- <i>a</i>)分布	34
圖 35. 2003 年 2 月、5 月及 12 月小型葉綠素甲(Micro-chl- <i>a</i>)分布	35
圖 36. 2004 年 2 月、5 月、8 月及 11 月小型葉綠素甲(Micro-chl- <i>a</i>)分布	36
圖 37. 2005 年 1 月、4 月、7 月及 10 月小型葉綠素甲(Micro-chl- <i>a</i>)分布	37
圖 38. 2006 年 1 月、5 月、7 月及 10 月小型葉綠素甲(Micro-chl- <i>a</i>)分布	38
表 01. 2004-08-04 航次基礎觀測資料	39
表 02. 2005-01-02 航次基礎觀測資料	40
表 03. 2005-04-07 航次基礎觀測資料	41
表 04. 2005-07-05 航次基礎觀測資料	42
表 05. 2005-10-06 航次基礎觀測資料	43
表 06. 2006-01-03 航次基礎觀測資料	44
表 07. 2006-05-04 航次基礎觀測資料	45
表 08. 2006-07-18 航次基礎觀測資料	46
表 09. 2006-10-12 航次基礎觀測資料	47

Contents

Introduction.....	III
Contents	VI
Field Observations	IX
Laboratory procedures	XI
Program leader	XII
Participating researchers	XII
Abbreviations.....	XIII
Reference	XIV
Fig.01. Temperature distribution in Feb. 2003	1
Fig.02. Temperature distribution in May 2003	2
Fig.03. Temperature distribution in Dec. 2003	3
Fig.04. Temperature distribution in Feb. 2004	4
Fig.05. Temperature distribution in May 2004	5
Fig.06. Temperature distribution in Aug. 2004.....	6
Fig.07. Temperature distribution in Nov. 2004.....	7
Fig.08. Temperature distribution in Jan. 2005	8
Fig.09. Temperature distribution in Apr. 2005.....	9
Fig.10. Temperature distribution in Jul. 2005.....	10
Fig.11. Temperature distribution in Oct. 2005.....	11
Fig.12. Temperature distribution in Jan. 2006	12
Fig.13. Temperature distribution in May 2006	13
Fig.14. Temperature distribution in Jul. 2006.....	14
Fig.15. Temperature distribution in Oct. 2006.....	15
Fig.16. Salinity distribution in Feb. 2003	16
Fig.17. Salinity distribution in May 2003.....	17
Fig.18. Salinity distribution in Dec. 2003.....	18
Fig.19. Salinity distribution in Feb. 2004.....	19
Fig.20. Salinity distribution in May 2004.....	20
Fig.21. Salinity distribution in Aug. 2004	21
Fig.22. Salinity distribution in Nov. 2004	22
Fig.23. Salinity distribution in Jan. 2005.....	23
Fig.24. Salinity distribution in Apr. 2005	24
Fig.25. Salinity distribution in Jul. 2005	25
Fig.26. Salinity distribution in Oct. 2005	26
Fig.27. Salinity distribution in Jan. 2006.....	27
Fig.28. Salinity distribution in May 2006.....	28

Fig.29. Salinity distribution in Jul. 2006	29
Fig.30. Salinity distribution in Oct. 2006	30
Fig.31. Seasonal distribution of nano-chlorophyll- <i>a</i> in 2003	31
Fig.32. Seasonal distribution of nano-chlorophyll- <i>a</i> in 2004	32
Fig.33. Seasonal distribution of nano-chlorophyll- <i>a</i> in 2005	33
Fig.34. Seasonal distribution of nano-chlorophyll- <i>a</i> in 2006	34
Fig.35. Seasonal distribution of micro-chlorophyll- <i>a</i> in 2003	35
Fig.36. Seasonal distribution of micro-chlorophyll- <i>a</i> in 2004	36
Fig.37. Seasonal distribution of micro-chlorophyll- <i>a</i> in 2005	37
Fig.38. Seasonal distribution of micro-chlorophyll- <i>a</i> in 2006	38
Chart.01. Basic observation data in Aug. 2004	39
Chart.02. Basic observation data in Jan. 2005	40
Chart.03. Basic observation data in Apr. 2005	41
Chart.04. Basic observation data in Jul. 2005	42
Chart.05. Basic observation data in Oct. 2005	43
Chart.06. Basic observation data in Jan. 2006	44
Chart.07. Basic observation data in May 2006	45
Chart.08. Basic observation data in Jul. 2006	46
Chart.09. Basic observation data in Oct. 2006	47

海上採樣作業流程

利用水試一號試驗船及其裝備，按季節別於台灣周邊海域 62 個測站進行下列之工作項目：

1.CTD 溫鹽調查：

採用 Seabird SBE-911PLUS 溫鹽深儀（CTD），每測站均投放至 1000 m (水深不足之測站則以實際水深少 10 m 為原則)，取得溫深鹽之連續資料。

2.分層採水：

利用 General Oceanics 之自動採水瓶，採取 5、25、50、75、100、150 m 等水層之海水各 2000 ml。

3.葉綠素甲測定：

取各層海水 1000 ml，利用 Millipore 濾紙過濾後，以 -20°C 急速冷凍保存，再攜回實驗室檢測。

Field Observations

The survey was carried out in the waters surrounding Taiwan by *Fishery Researcher I* during quarterly cruises from 2003 to 2006. The following procedures were conducted at each station.

1. Temperature and salinity: CTD, Seabird SBE-911PLUS, was lowered from the surface to 1000 m (or 10 m above the bottom for shallow areas).
2. Water sampling for chlorophyll-*a* and nutrients: The Rosette (GO-1015), mounted on the frame of CTD, were sequentially closed and collected 2 liter water sample at specific target depths (5, 25, 50, 75, 100, 150 m) as the CTD was raised.
3. Chlorophyll-*a* concentration measurement: One liter of sea water samples were immediately filtered through Whatman GF/F filter papers and then put in -20°C refrigerator for chlorophyll-*a* concentration measurement in the laboratory.

樣本實驗檢測流程

葉綠素甲測定：

葉綠素甲測定依據 Strickland and Parsons (1972)及 Nishizawa, et al.(1971)建議螢光法進行之，分別使用 GF/F 濾紙(nano)及濾布(micro)經由濾水所蒐集之浮游植物，使用 90% 丙酮萃取葉綠素等色素，在 665 nm 及 435 nm 波長下以螢光光度計(HITACHI F-2000)測定葉綠素甲螢光值。

- (1).將凍結保存之 GF/F 濾紙及濾布取出於暗室中解凍且將 GF/F 濾紙剪成細條狀，後置入暗色 15 ml 離心管中使用均質機磨碎，濾布則直接放入，兩者均分別加入 90 %丙酮 10 ml 來萃取葉綠色素。隨後封緊試管口，以震盪機將試管均勻震盪 45-60 秒後，全部樣本試管用黑色塑膠袋包妥以避光，放入 4℃之冰箱中反應 24 小時低溫萃取之。
- (2).由冰箱中取出全部樣本試管，於暗室中以冷凍離心機(條件：4℃,3000 rpm,15 分鐘)離心後，吸取其上層澄清液小心置入石英比色管中，以螢光光度在 665 nm 及 435 nm 波長下，測其螢光值(F_0)，在將此澄清液加入 1N HCl 0.2 ml 並混合均勻，酸化 5 分鐘後，再測其螢光值(F_a)。
- (3).試水中之葉綠素甲及褐色素甲的濃度計算公式依據 Holm-Hansen et al.(1965)分別為：

$$\text{Chlorophyll } a = K * (F_m / (F_m - 1)) * V_e * (F_o - F_a) / V_f$$

$$\text{Pheopigments } a = K * (F_m / (F_m - 1)) * V_e * ((F_m * F_a) - F_o) / V_f$$

K =校正係數=每 ml 90 % 丙酮內所含每 μ g 葉綠素甲在螢光儀所測得的螢光值。

F_m =酸化係數(F_o/F_a)=標準化下，葉綠素甲及褐色素甲所測得螢光值之比值。

F_o =樣品加酸前(HCl)測得之標準化螢光值。

F_a =樣品加酸後(HCl)測得之標準化螢光值。

V_e = 90 % 丙酮萃取體積(本研究採 10 ml)。

V_f =試水過濾體積(本研究採 1000 ml)。

Laboratory procedures

Chlorophyll-*a*

Chlorophyll-*a* (chl-*a*) was measured by the Strickland and Parsons (1972) and Nishizawa, et al.(1971) method. Seawater samples were filtered the Whatman GF/F filters (nano) and filterable net (micro) and preserved in deep freezers until analysis. Pigments were extracted in cold acetone (90%). For the final determination of samples were used a Fluorescence Spectrophotometer (HITACHI F-2000) the excitation wavelength should be 435 nm and the emission wavelength 665 nm.

- (1). Carry out extraction by grinding the filters in a glass homogenizer with a Teflon pestle, for 1 minute, After grinding, carefully transfer the extract to a 15 ml centrifuge tube, rinse properly the glass homogenizer and the pestle with 90 % acetone and add rinsing volumes to the centrifuge tube. Make up the extract volume in the centrifuge tube to exactly 10 ml 90 % acetone and stopper the tube.
- (2). The samples were centrifuged at 3000 rpm under 4°C for 15 minutes and then transfer the samples extracts from the centrifuge tube to the cuvette by careful pipeting. Measured the fluorescence of the sample extract 90 % acetone blank add 0.2 ml 1N hydrochloric acid in the cuvette. The final determination of Chlorophyll-*a* and phaeopigments-*a* were measured by using a fluorometer
- (3). Calculate the concentration of chlorophyll-*a* and pheopigments-*a* according to the equations of Holm-Hansen et al.(1965):

$$\text{Chlorophyll } a = K * (F_m / (F_m - 1)) * V_e * (F_o - F_a) / V_f$$

$$\text{Pheopigments } a = K * (F_m / (F_m - 1)) * V_e * ((F_m * F_a) - F_o) / V_f$$

K=Calibration coefficient= μ g Chl-*a* per ml 90 % acetone per instrument fluorescence units.

F_m=maximum acid ratio(F_o/F_a) of pure chlorophyll *a* standard.

F_o =sample fluorescence before acidification.

F_a= sample fluorescence after acidification.

V_e= extraction volume in milliliter.

V_f=filtered volume in liter

計畫主持人 Program leader

農業委員會水產試驗所研究員兼主任秘書 劉燈城 Liu Don-Chung

計畫執行人員 Participating researchers

單 位 名 稱	研 究 人 員	職 稱
農業委員會水產試驗所海洋漁業組	吳繼倫 Wu Chi-Lun	研究員兼組長
農業委員會水產試驗所海洋漁業組	李定安 Li Din-Ann	研究員
農業委員會水產試驗所海洋漁業組	王敏昌 Wang Min-chang	研究員
農業委員會水產試驗所海洋漁業組	吳世宏 Wu Sew-Hong	副研究員
農業委員會水產試驗所海洋漁業組	李祐竑 Li You-Hong	助理研究員
農業委員會水產試驗所海洋漁業組	李長縈 Le Chun-Yein	助理研究員
農業委員會水產試驗所水產養殖組	黃美瑩 Hwang May-Yeng	助理研究員
農業委員會水產試驗所海洋漁業組	王友慈 Wang Yu-Tzu	約聘研究助理
農業委員會水產試驗所海洋漁業組	潘佳怡 Pan Chia-I	聘用助理研究員
農業委員會水產試驗所海洋漁業組	陳彥民 Chen Yan-min	約聘研究助理
農業委員會水產試驗所海洋漁業組	簡煌彬 Jen Hung-Bun	技工
農業委員會水產試驗所海洋漁業組	張玉真 Chan Yu-Cheng	技工
農業委員會水產試驗所海洋漁業組	楊珮芬 Yang Pay-Fen	技工
農業委員會水產試驗所沿近海資源研究中心	吳龍靜 Wu Long-Jing	研究員兼主任
農業委員會水產試驗所沿近海資源研究中心	翁進興 Weng Jinn-Shing	副研究員
農業委員會水產試驗所沿近海資源研究中心	陳秋月 Chen Chiu-Yueh	技工
國立台灣海洋大學環境生物與漁業科學系	鄭學淵 Cheng Sha-Yen	副教授

略語表

Abbreviations

Date	作業日期
SMT	作業開始時間
Lati.	緯度(°N)
Long.	經度(°E)
Depth	深度(m)
SST	表層水溫(°C)
Air T.	氣溫(°C)
Air P.	氣壓(mb)
Wind D.	風向
Wind F.	風速(節)
O.N.D.	作業水深(m)
Fl. Ct.	濾水器讀數
V.W.S.	濾水體積(m ³)
N.A.	Not Available

參考文獻

Anonymous, Scripps Inst. of Oceanogr., 1962. Data Rept. Phys. and Chem. Data CCOFI Cruise 6107-08. SIO Ref. No. 62-16.

Anonymous, 1963. CalCOFI atlas of IO-meter temperatures and salinities 1949 through 1959.

Chambers, L. A., 1965. An oceanographic and biological survey of the southern California mainland shelf. Calif. State Water Qual. Cont. Bd. Publ. No.27: 1-231.

E.E. Wood, F.A.J. Armstrong and F.A. Richards , 1967. Determination of nitrate in sea water by cadmium-copper reduction to nitrite. J. Mar. Biol. U.K.47,23-31.

Holm-Hansen, O., Lorenzen C.J., Holmes, R.W., and Strickland, J.D.H., 1965. Fluorometric determination of chlorophyll. Conseil International pour

M.C. Rand, A.E. Greenberg and M.J. Taras , 1976. Standard methods for the examination of water and wastewater. American Public Health Association.

Owen, R. W., Jr., 1974. Distribution of primary production, plant pigments and Secchi depth in the California Current region, 1969.

Rakestraw, N. W., P. L. Horner, and W. S. Wooster (Eds.), 1957. Oceanic observations of the Pacific:1949. Univ. Calif. Press, Berkeley, 363 p.

Reid, J. L., Jr., R. S. Arthur, and E. B. Bennett (Eds.). 1963 a. Oceanic observations of the Pacific:1951. Univ. Calif. Press, Berkeley, 598 p.

Strickland, J. D. H., and T. R. Parsons., 1968. A practical handbook of seawater analysis. Fish.

Thomas, W. H. and D. L. R. Seibert, 1974. Distribution of nitrate, nitrite, phosphate and silicate in the California Current region, 1969.

Wyllie, J.G., 1966. Geostrophic flow of the California Current at the surface and at 200 meters.

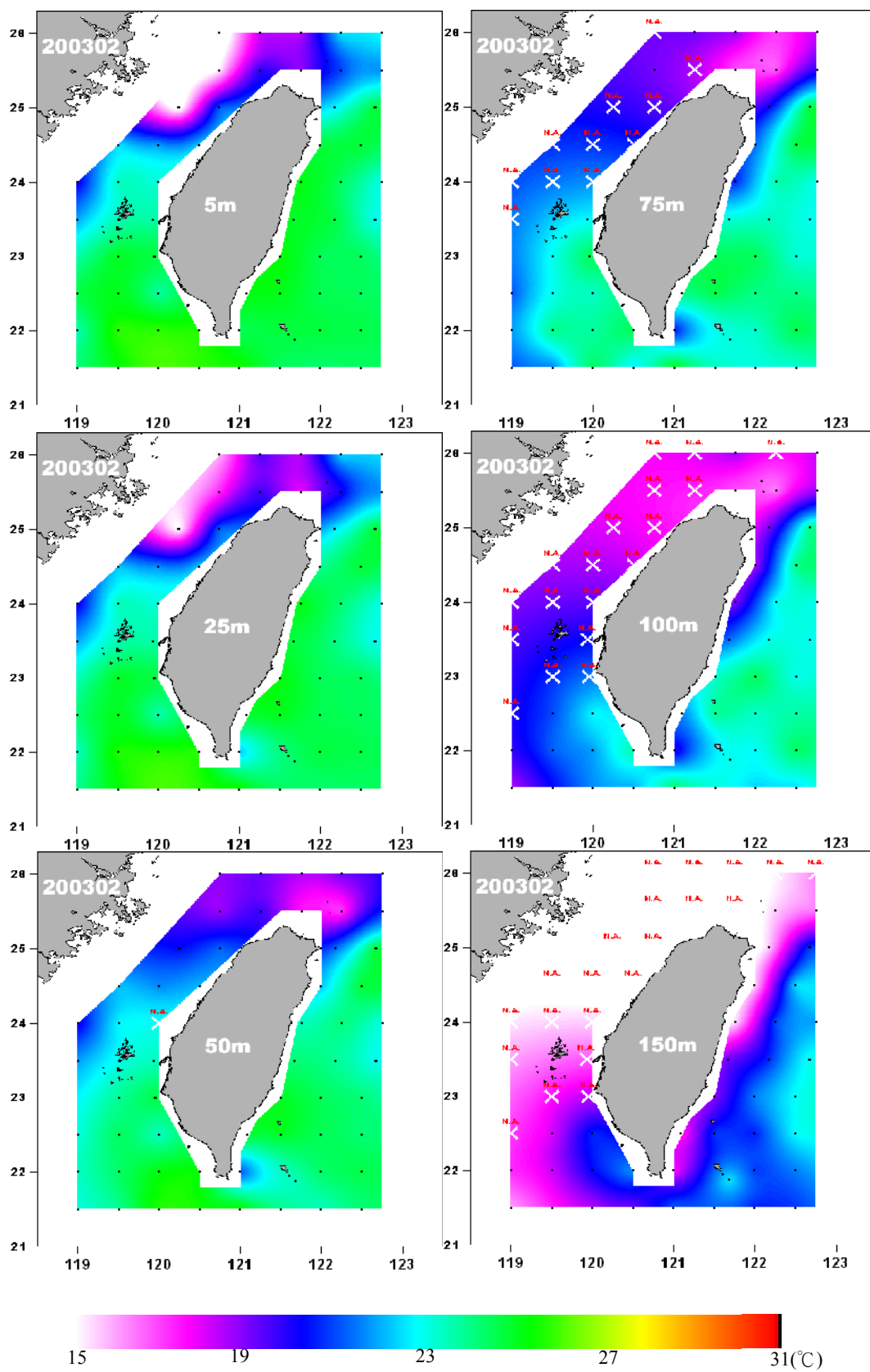


圖 01. 2003-02 航次水溫分布
Fig.01. Temperature distribution in Feb. 2003

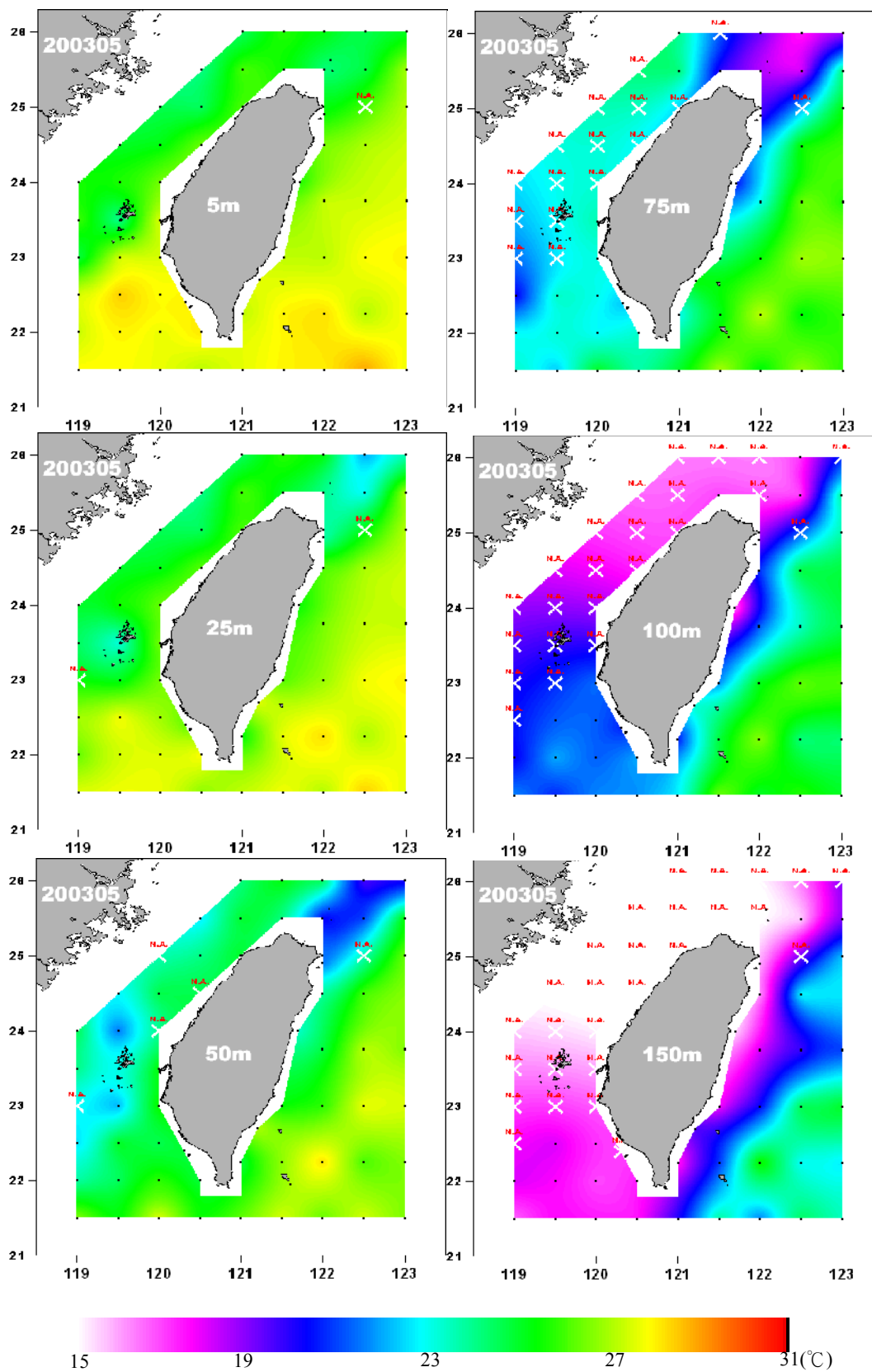


圖 02. 2003-05 航次水溫分布
Fig.02. Temperature distribution in May 2003

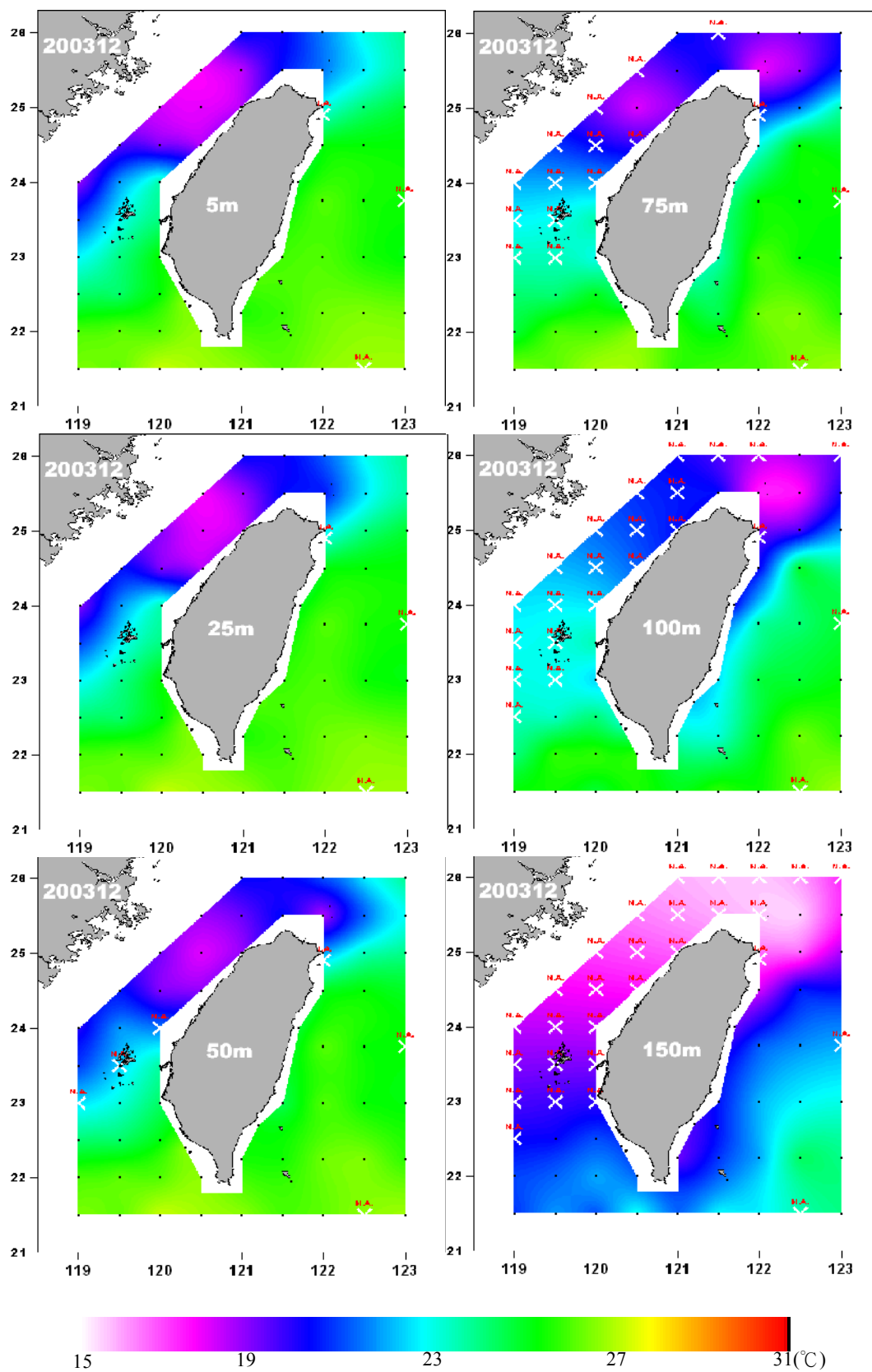


圖 03. 2003-12 航次水溫分布
Fig.03. Temperature distribution in Dec. 2003

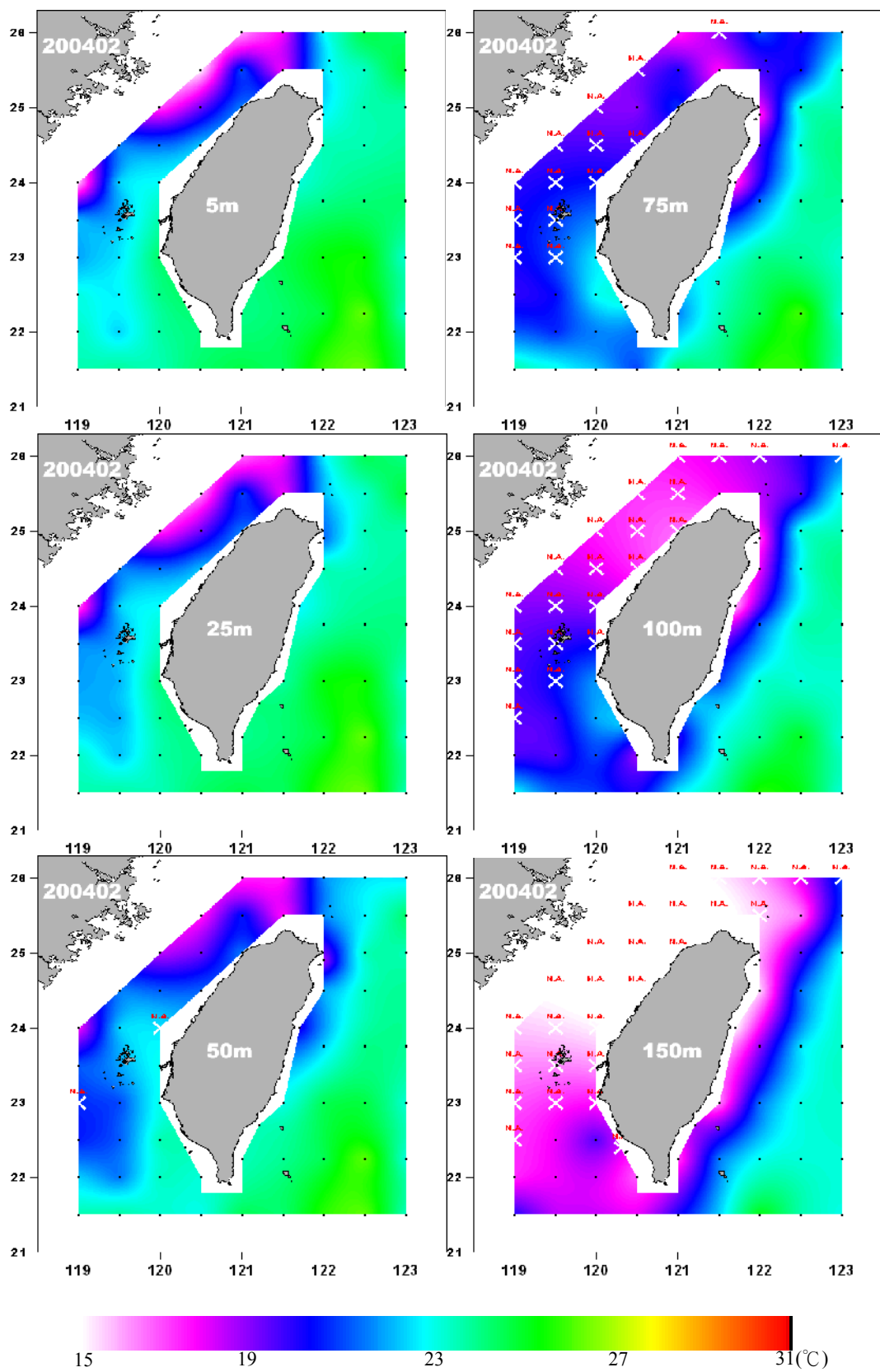


圖 04. 2004-02 航次水溫分布
Fig.04. Temperature distribution in Feb. 2004

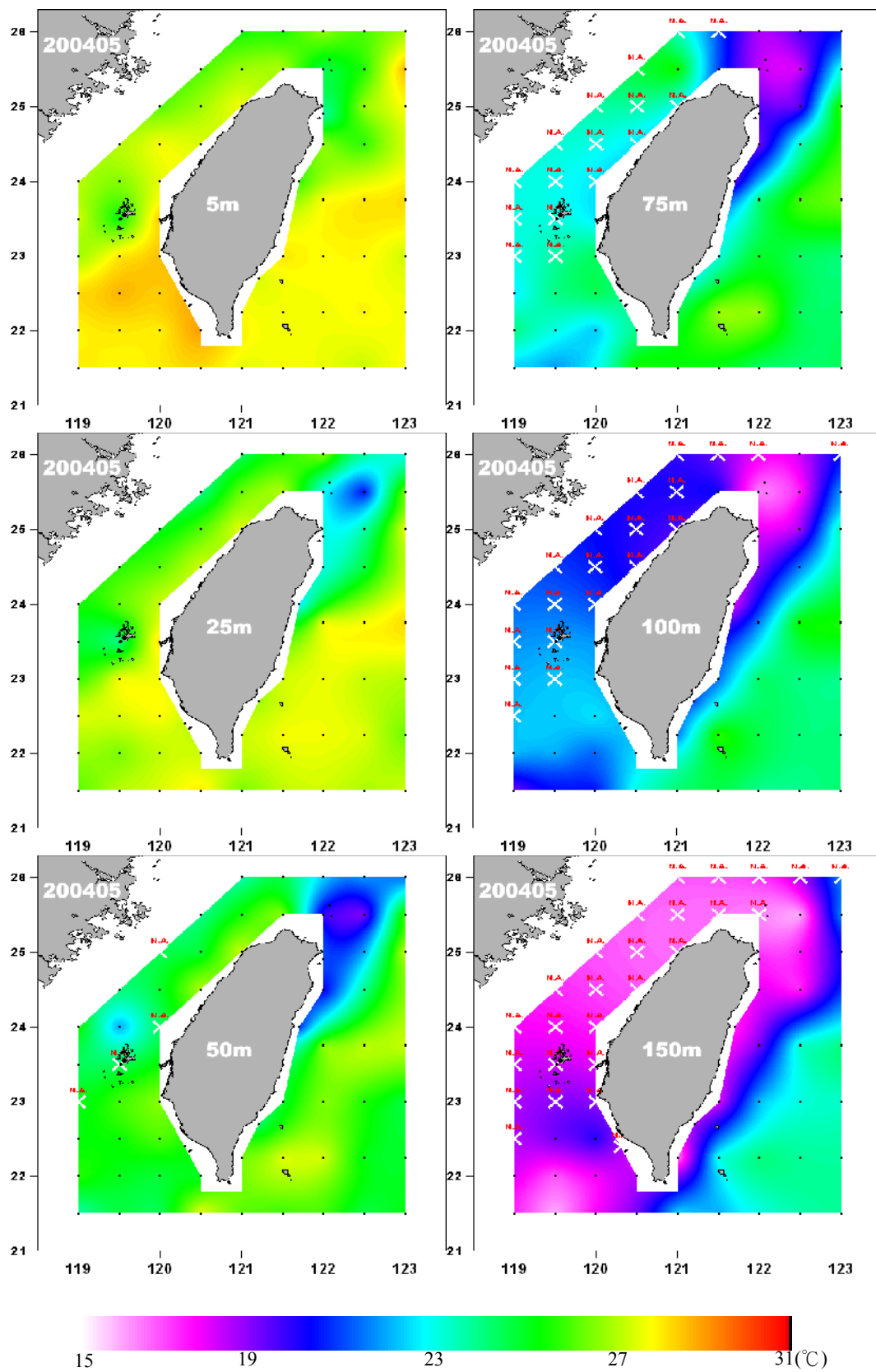


圖 05. 2004-05 航次水溫分布
Fig.05. Temperature distribution in May 2004

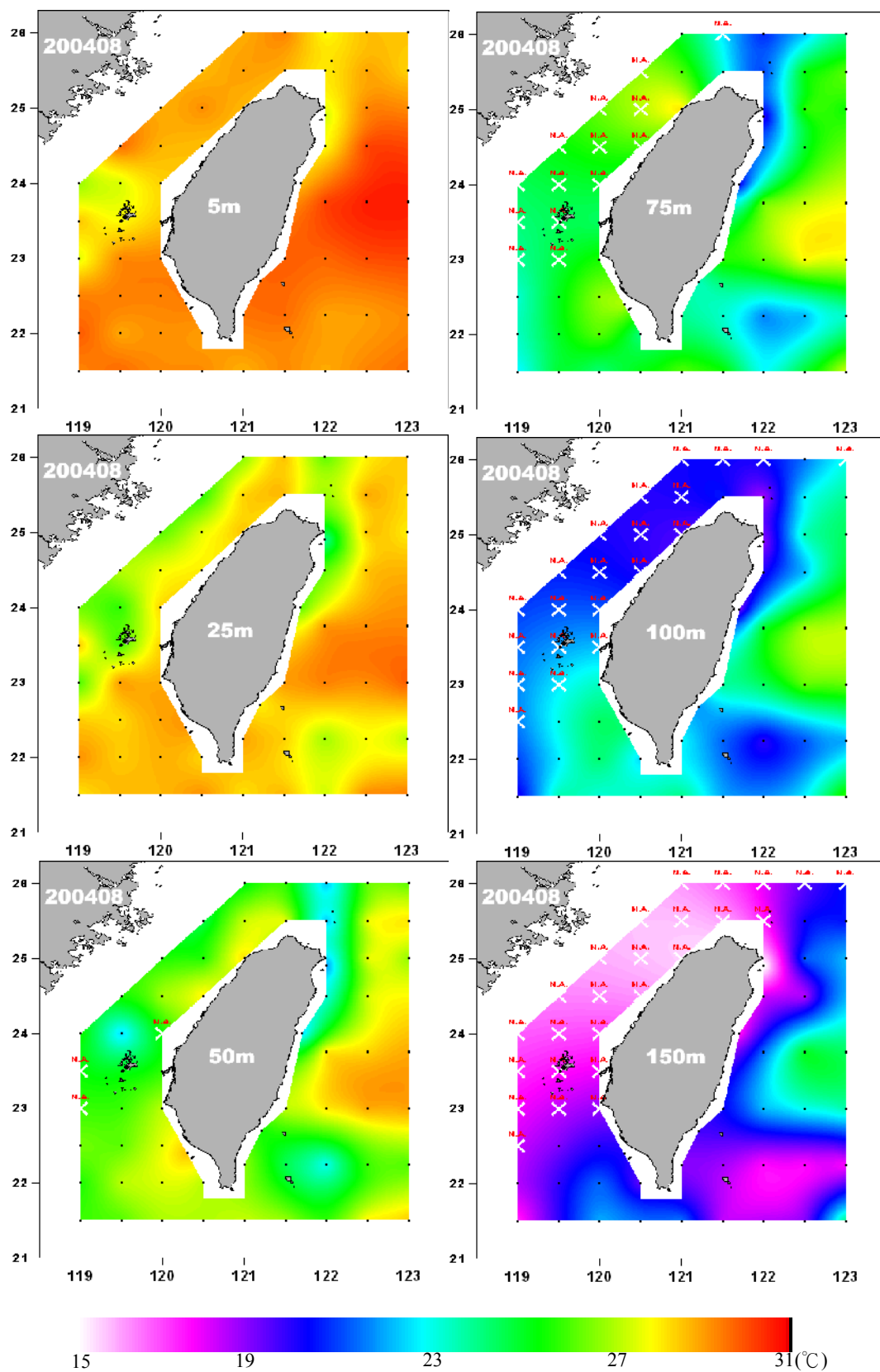


圖 06. 2004-08 航次水溫分布
Fig.06. Temperature distribution in Aug. 2004

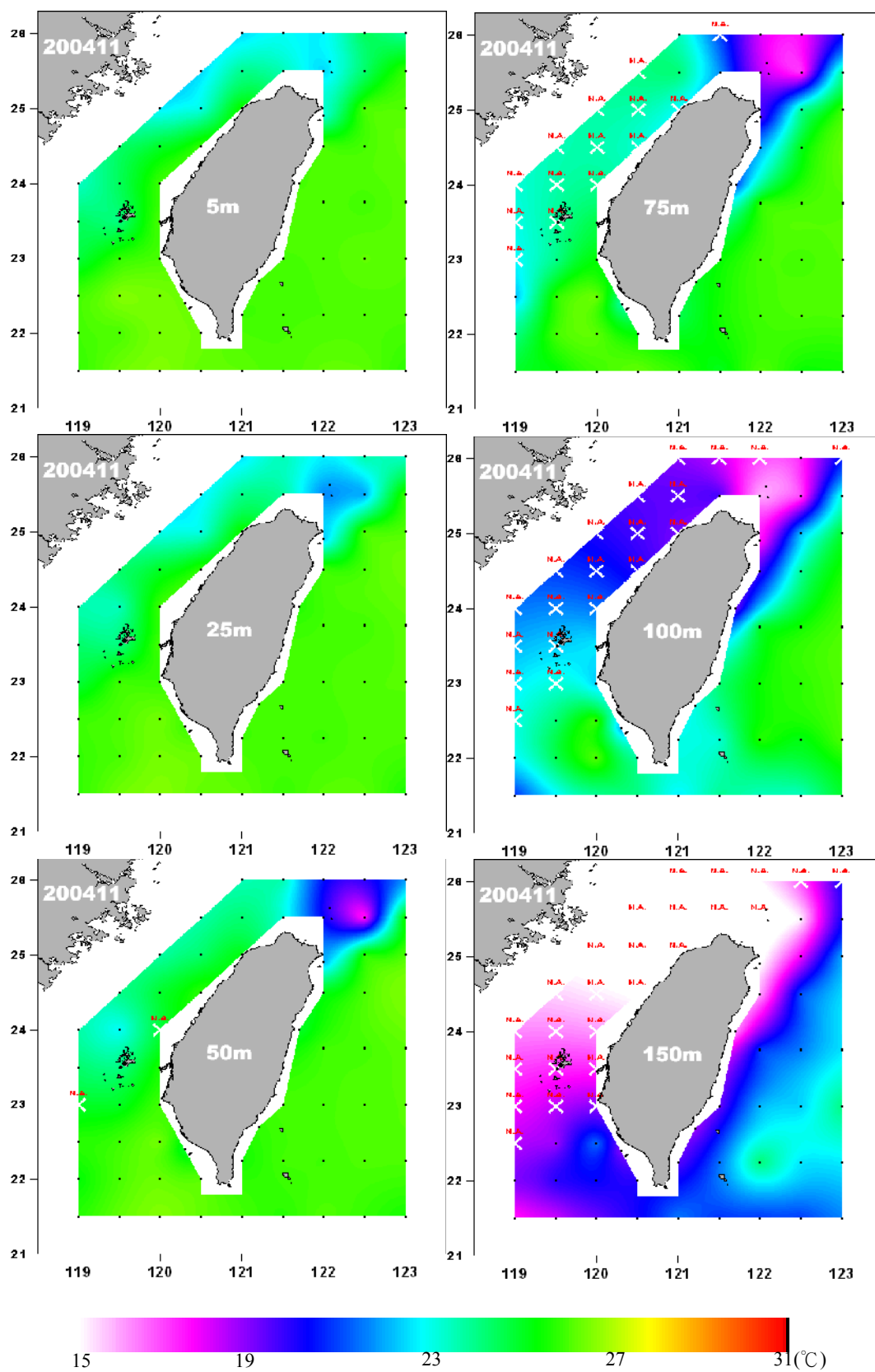


圖 07. 2004-11 航次水溫分布
Fig.07. Temperature distribution in Nov. 2004

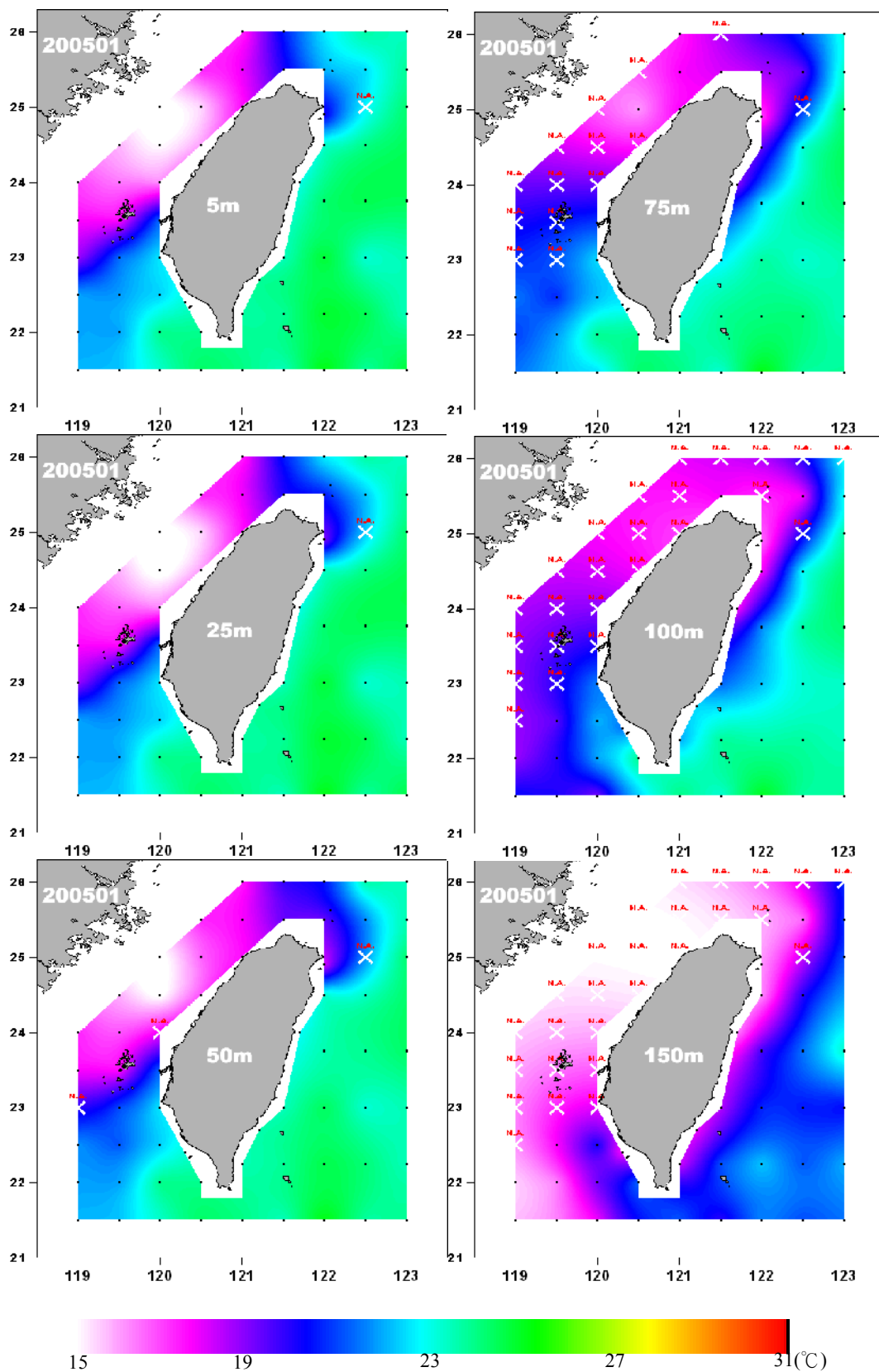


圖 08. 2005-01 航次水溫分布
Fig.08. Temperature distribution in Jan. 2005

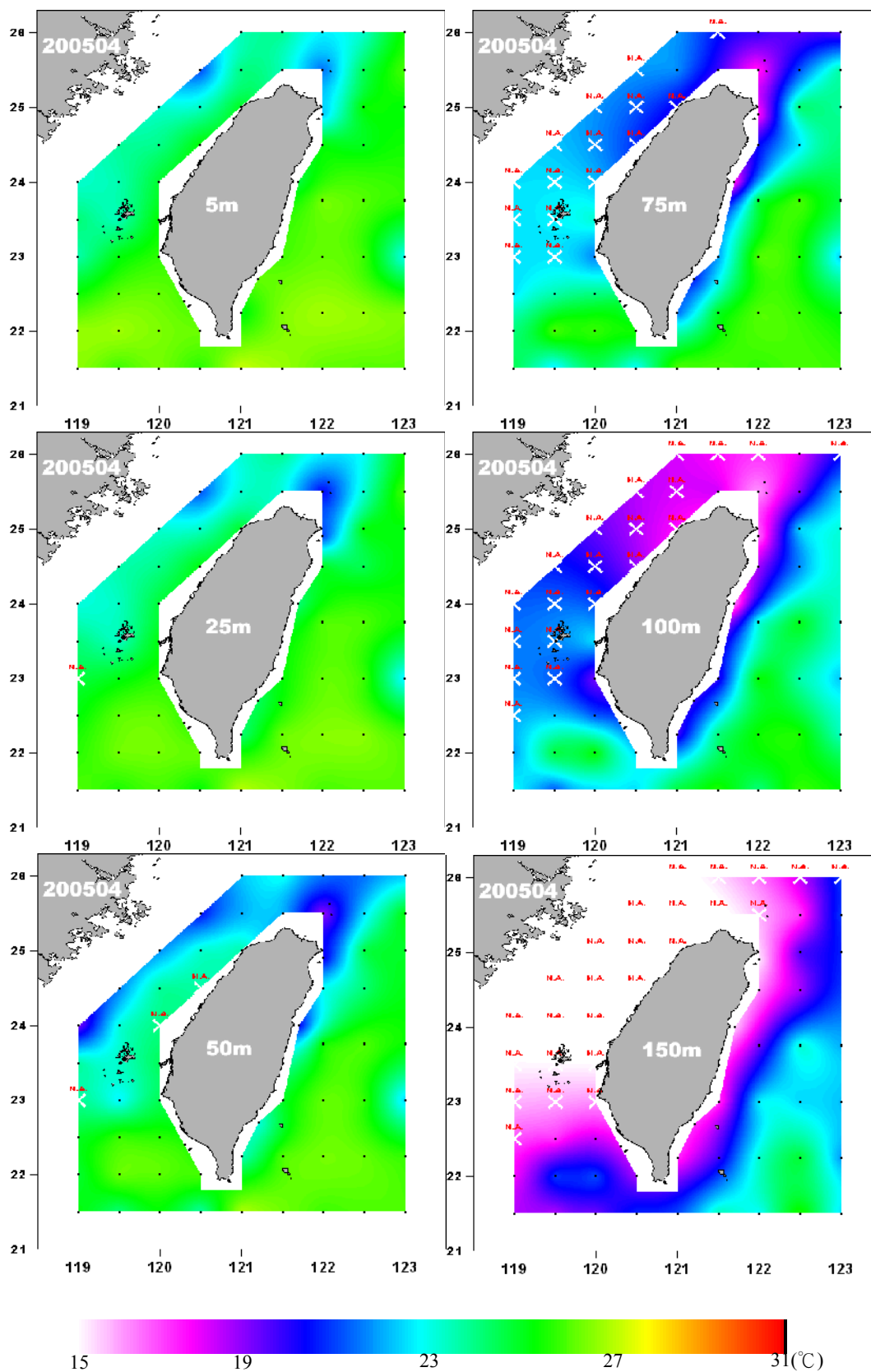


圖 09. 2005-04 航次水溫分布
Fig.09. Temperature distribution in Apr. 2005

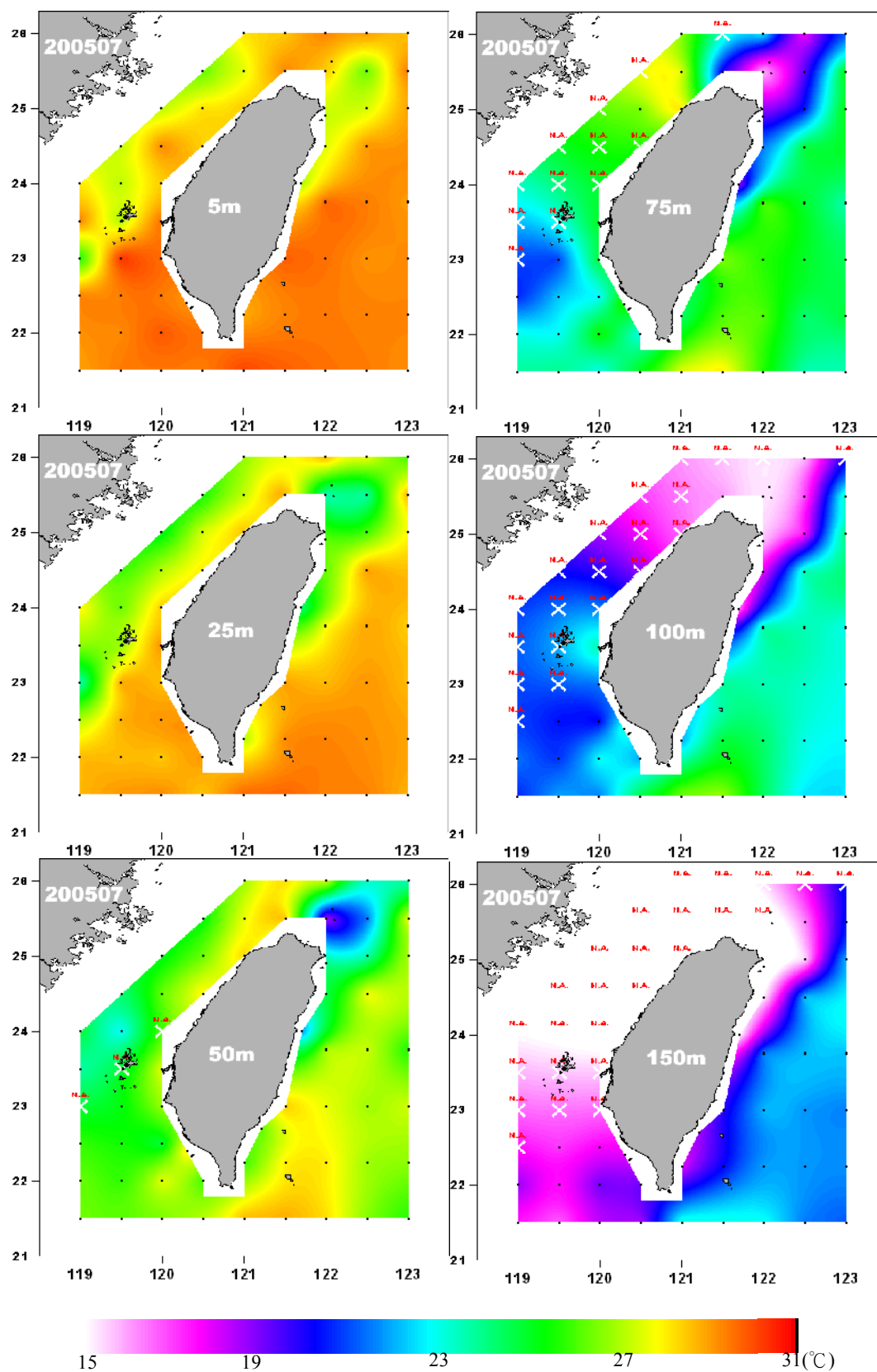


圖 10. 2005-07 航次水溫分布
Fig.10. Temperature distribution in Jul. 2005

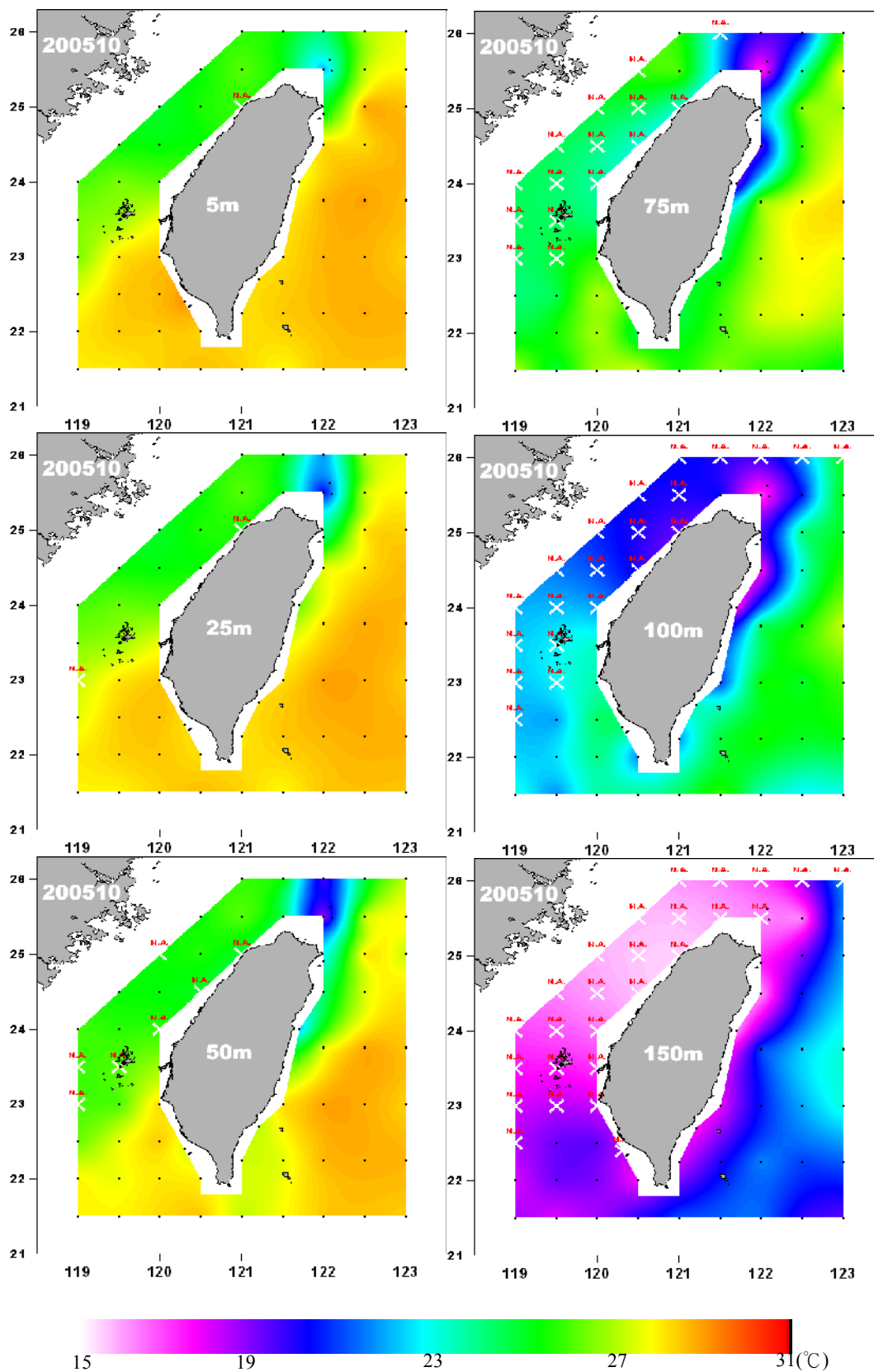


圖 11. 2005-10 航次水溫分布
Fig.11. Temperature distribution in Oct. 2005

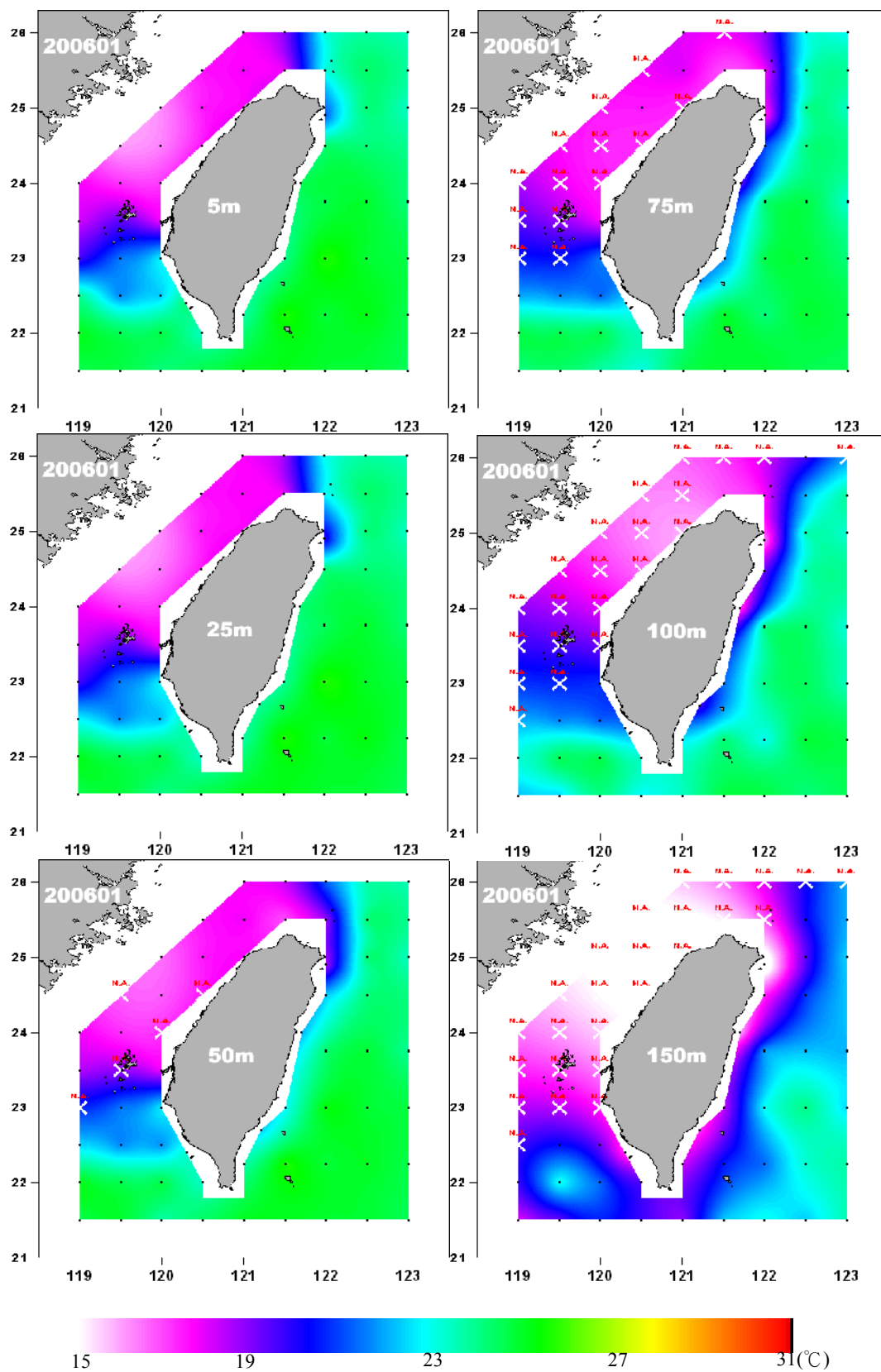


圖 12. 2006-01 航次水溫分布
Fig.12. Temperature distribution in Jan. 2006

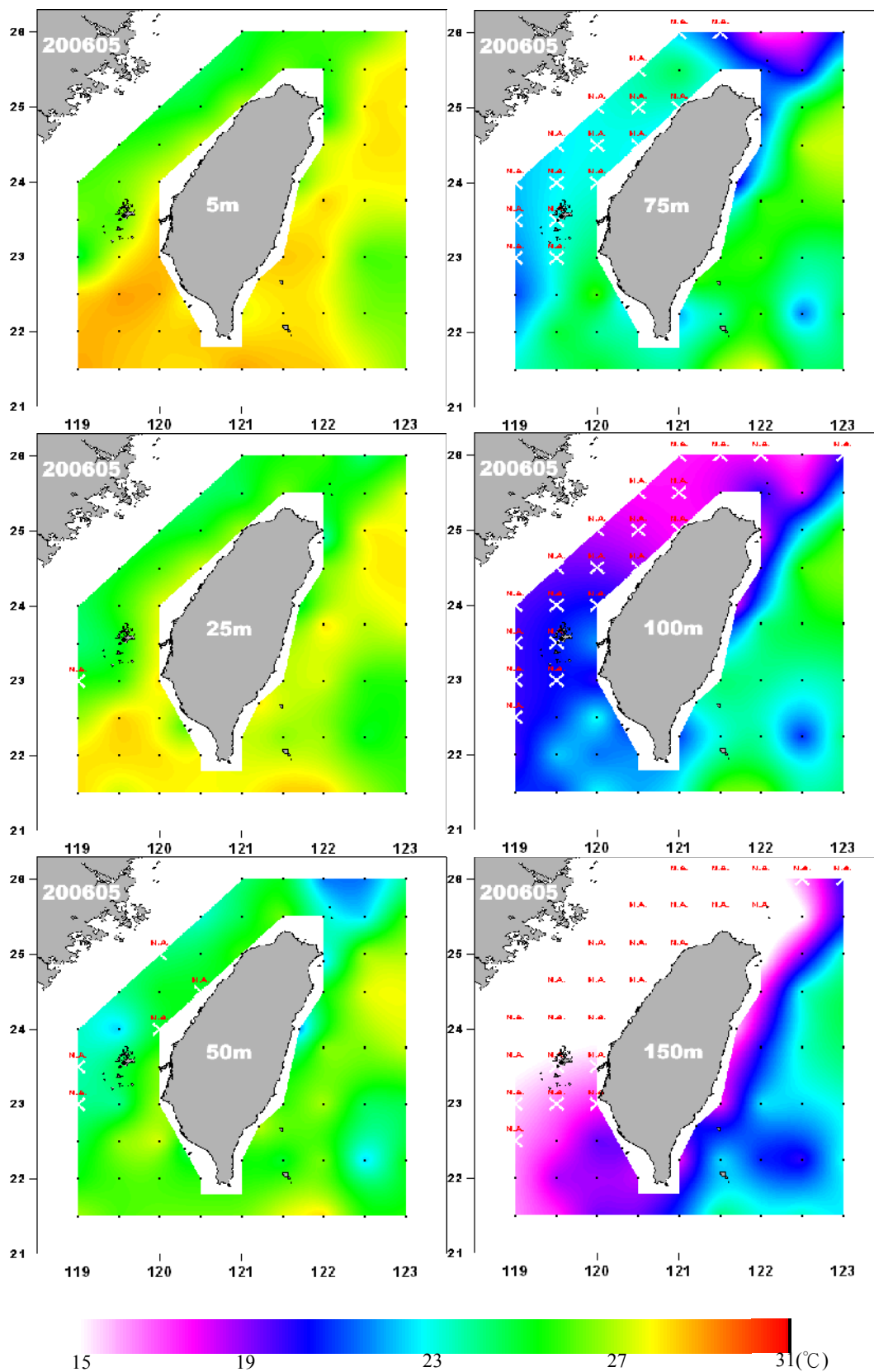


圖 13. 2006-05 航次水溫分布
Fig.13. Temperature distribution in May 2006

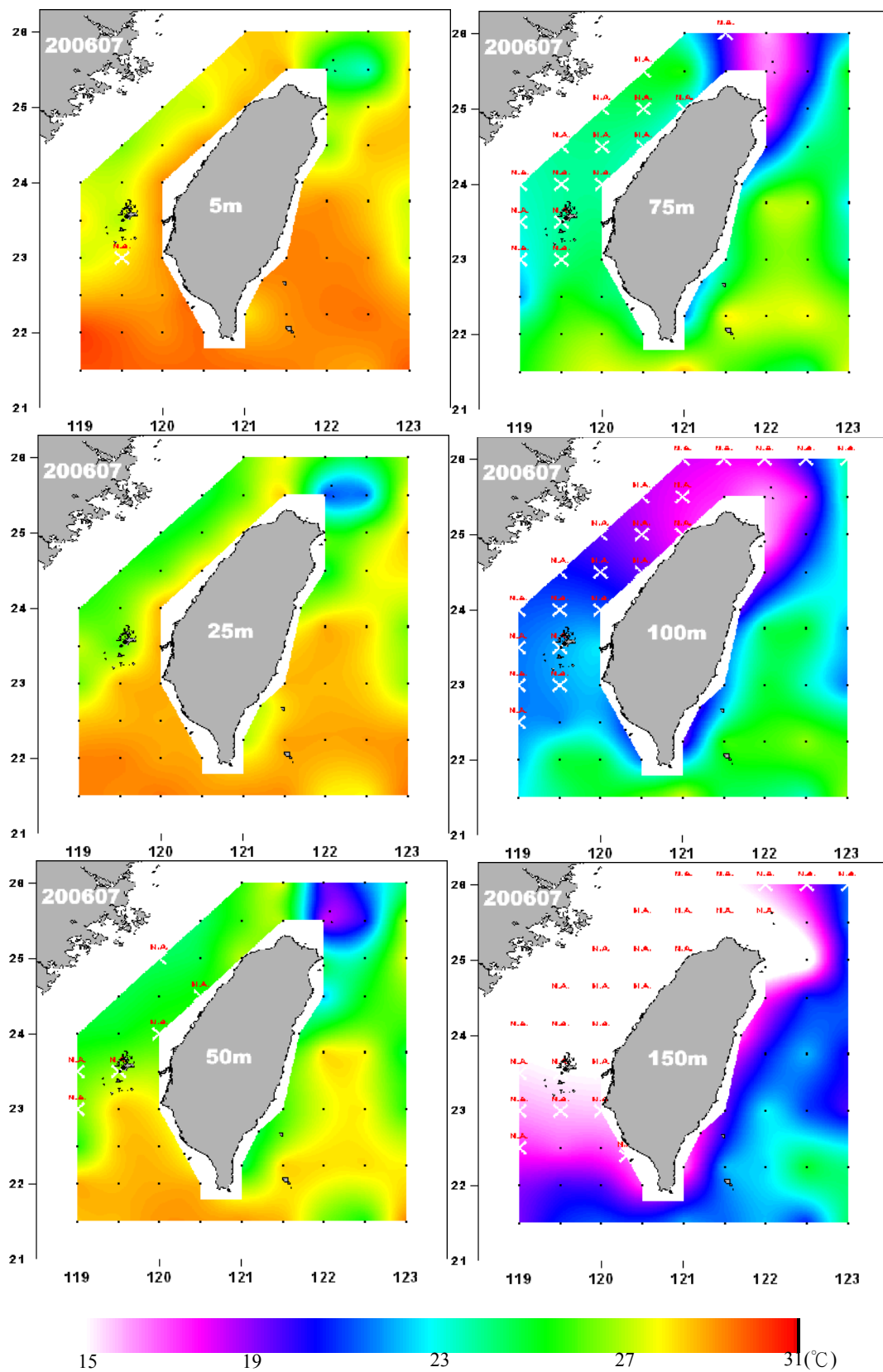


圖 14. 2006-07 航次水溫分布
Fig.14. Temperature distribution in Jul. 2006

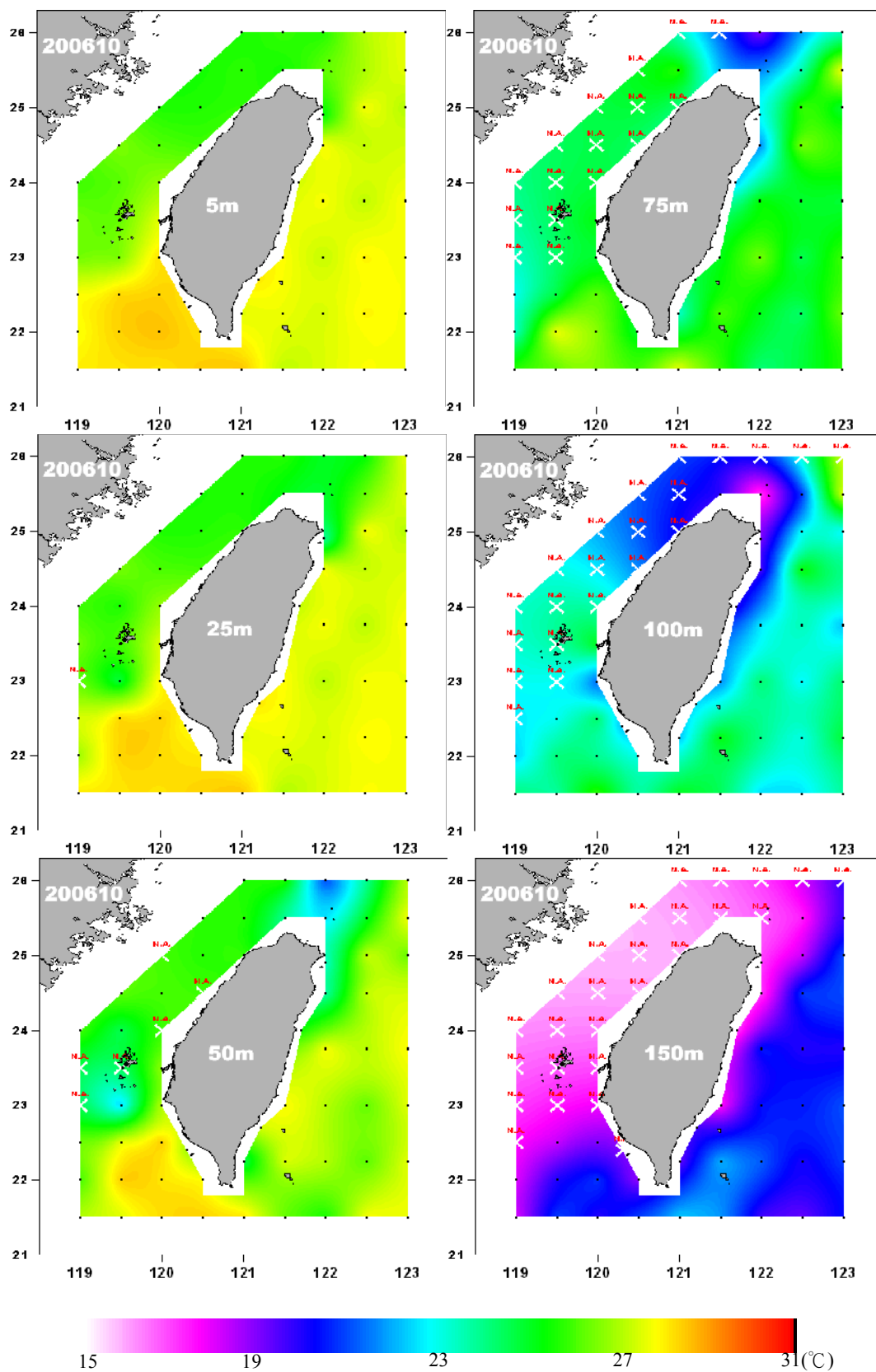


圖 15. 2006-10 航次水溫分布
Fig.15. Temperature distribution in Oct. 2006

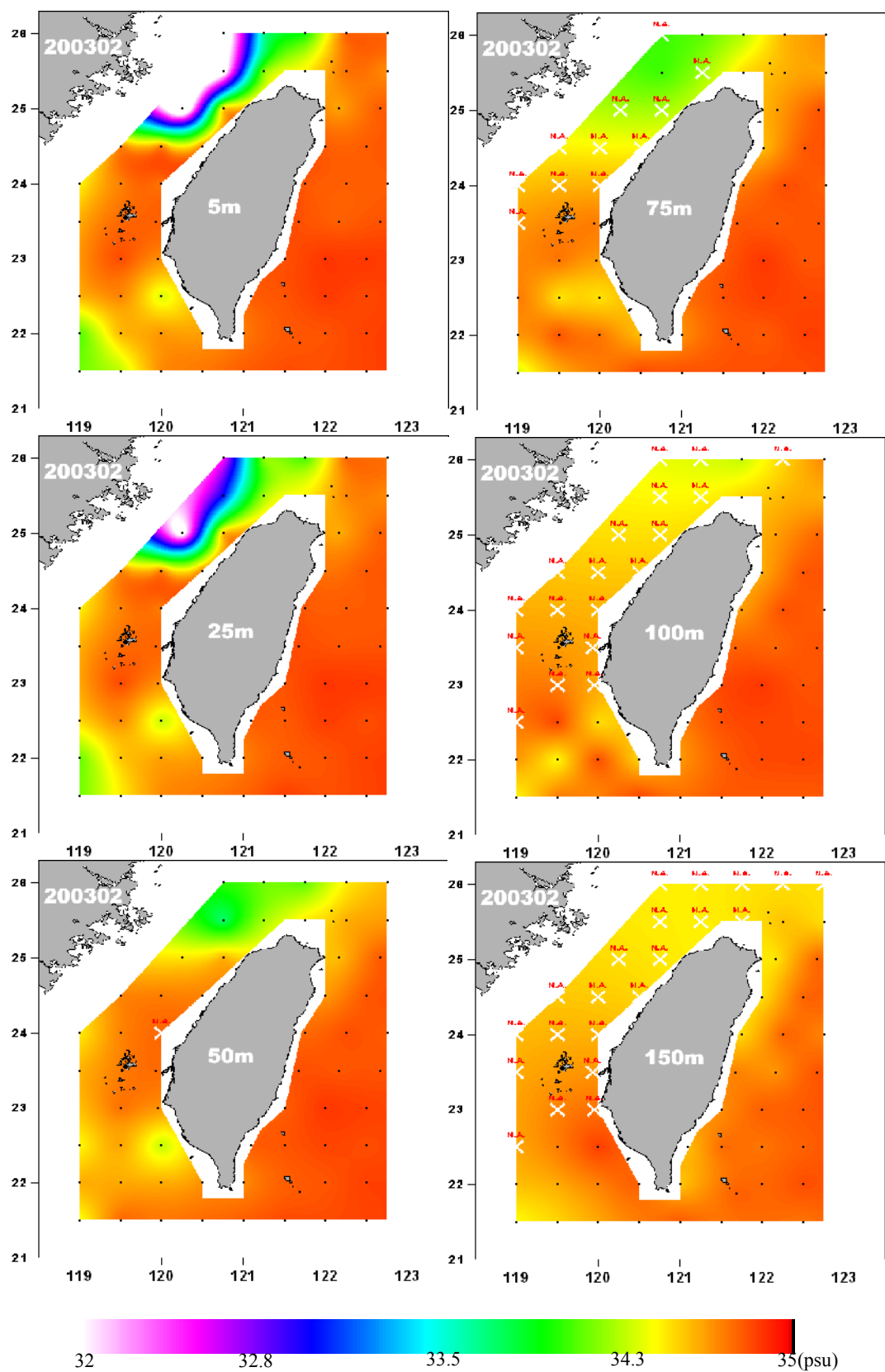


圖 16. 2003-02 航次鹽度分布
Fig.16.Salinity distribution in Feb. 2003

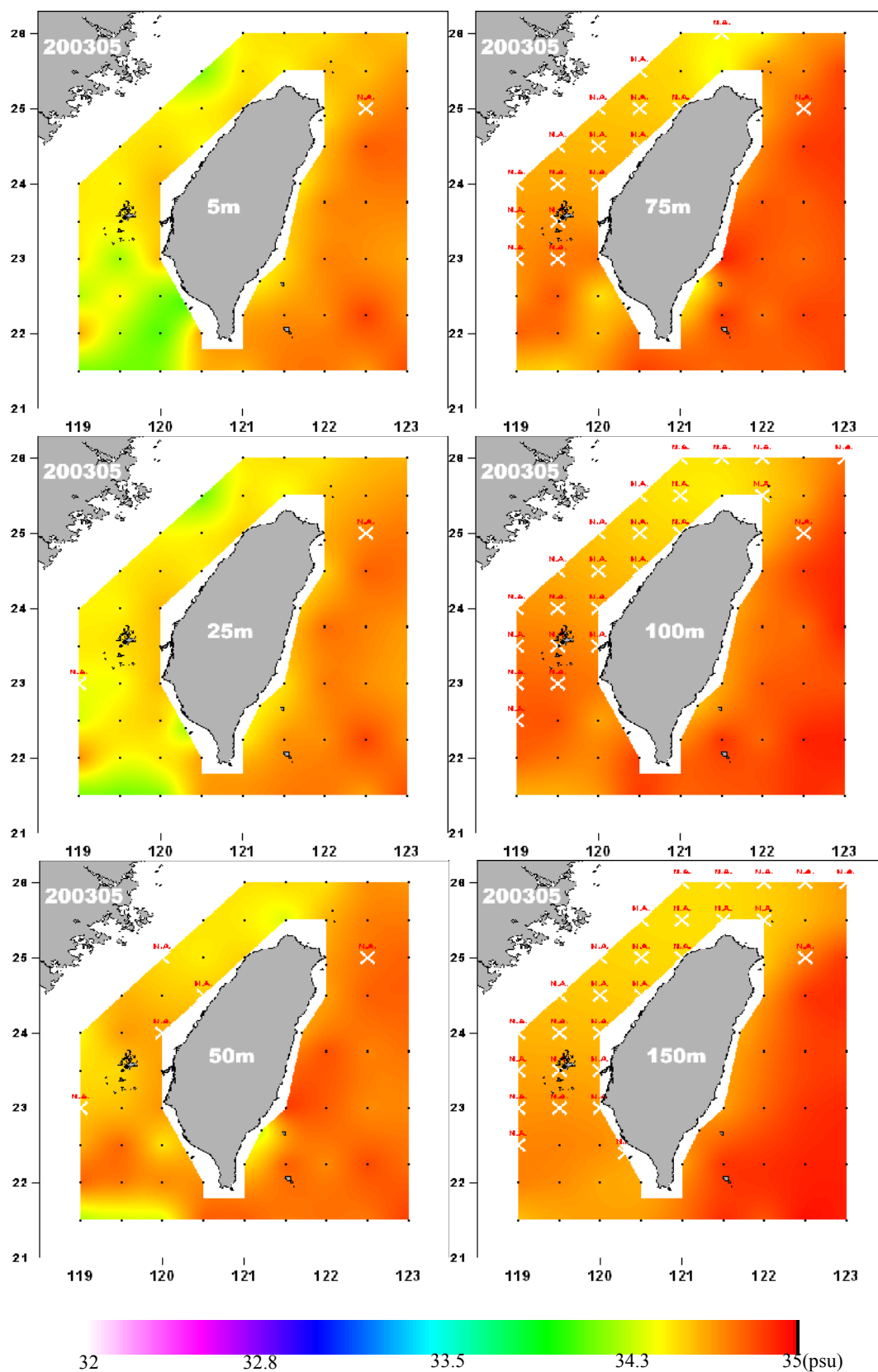


圖 17. 2003-05 航次鹽度分布
Fig.17.Salinity distribution in May 2003

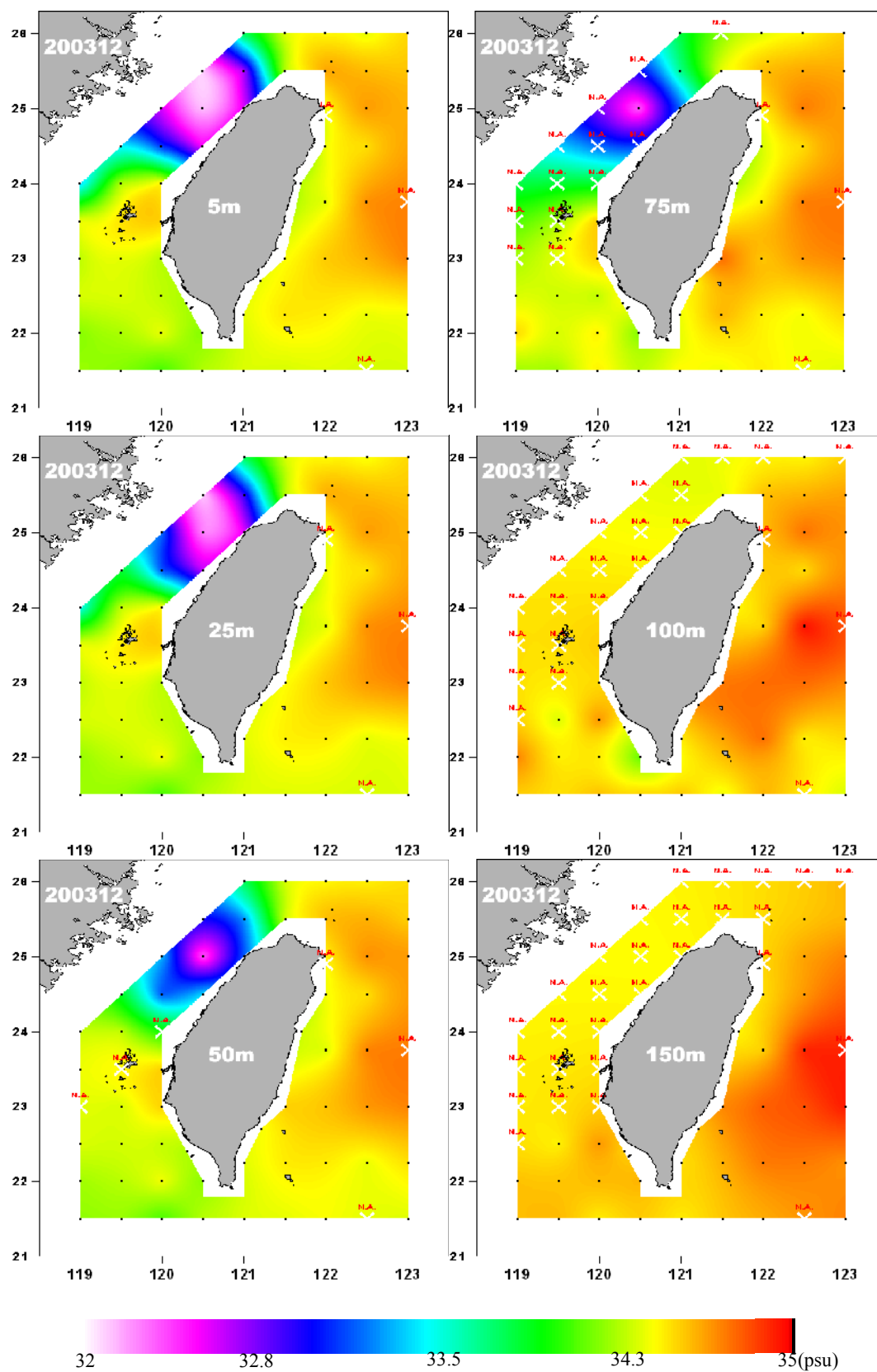


圖 18. 2003-12 航次鹽度分布
Fig.18.Salinity distribution in Dec. 2003

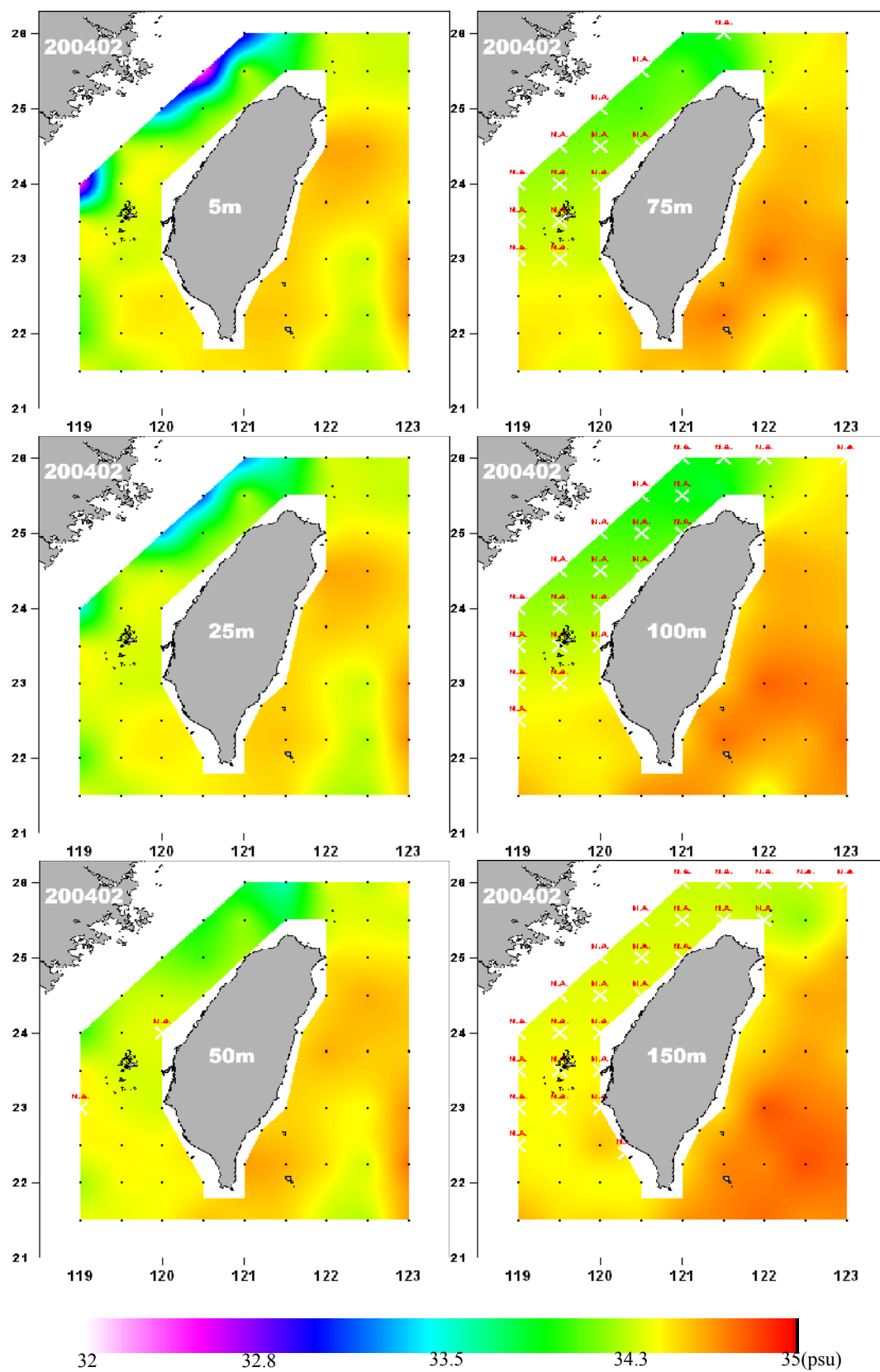


圖 19. 2004-02 航次鹽度分布
Fig.19.Salinity distribution in Feb. 2004

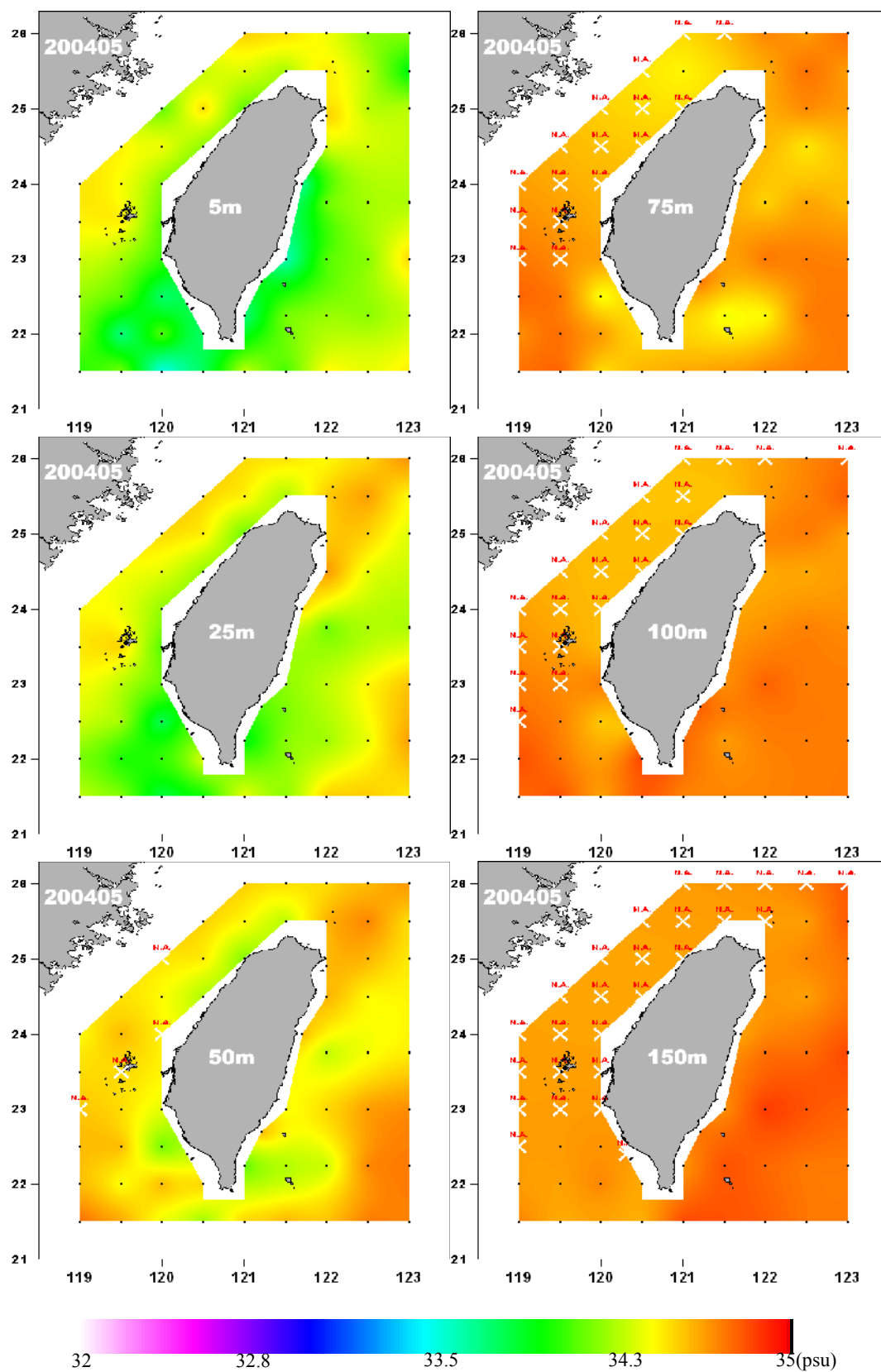


圖 20. 2004-05 航次鹽度分布
Fig.20.Salinity distribution in May 2004

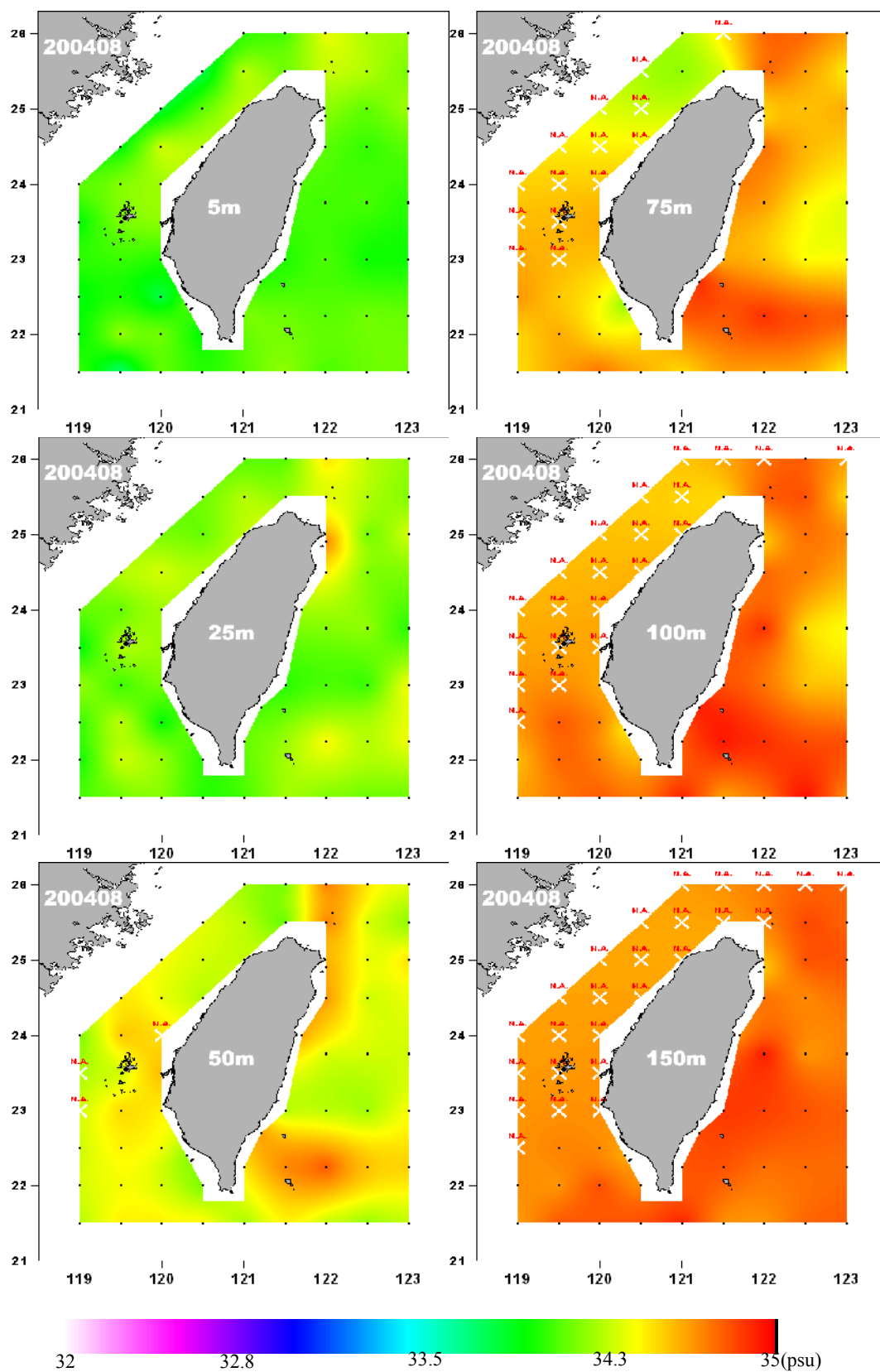


圖 21. 2004-08 航次鹽度分布
Fig.21. Salinity distribution in Aug. 2004

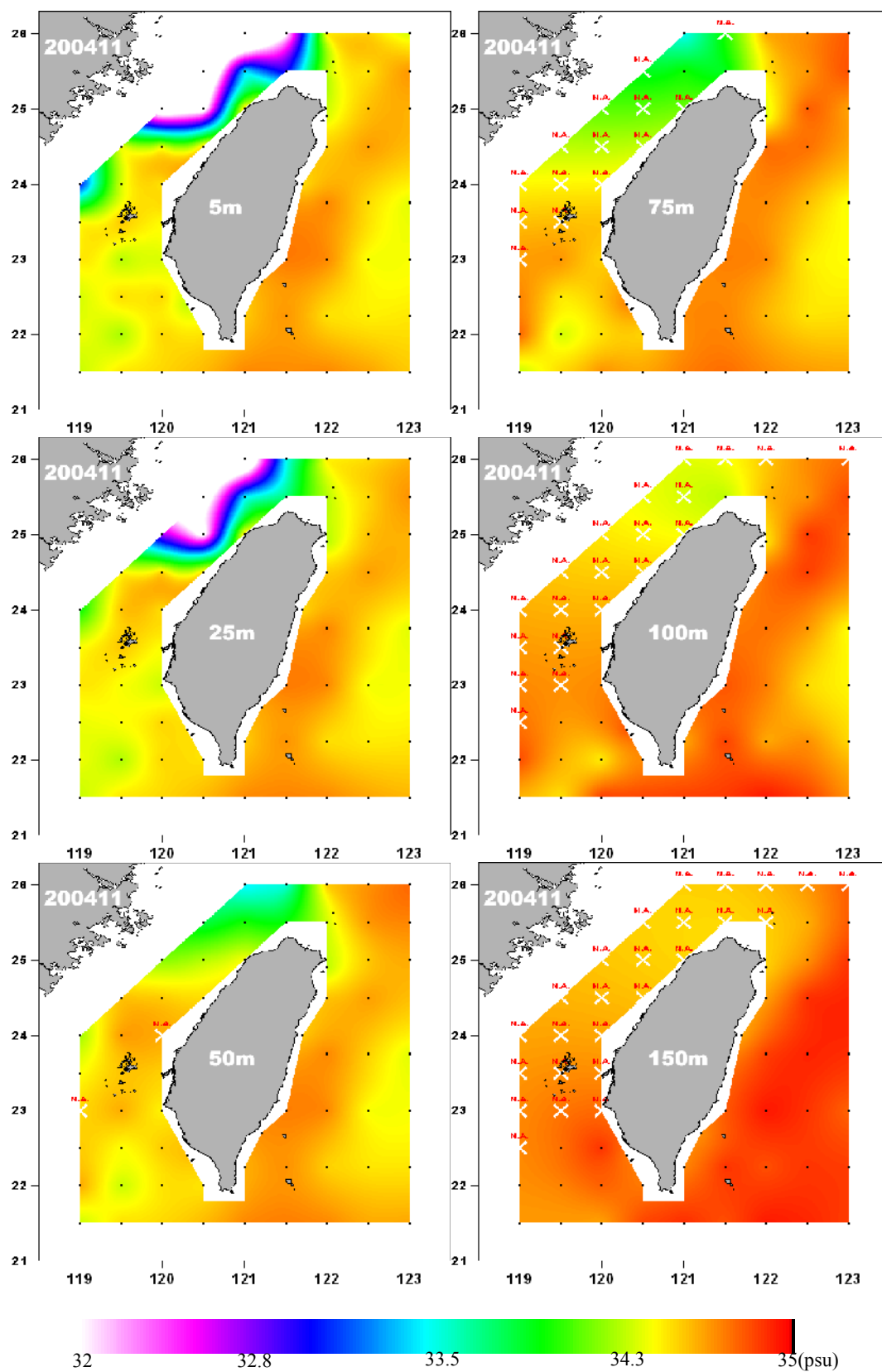


圖 22. 2004-11 航次鹽度分布
Fig.22.Salinity distribution in Nov. 2004

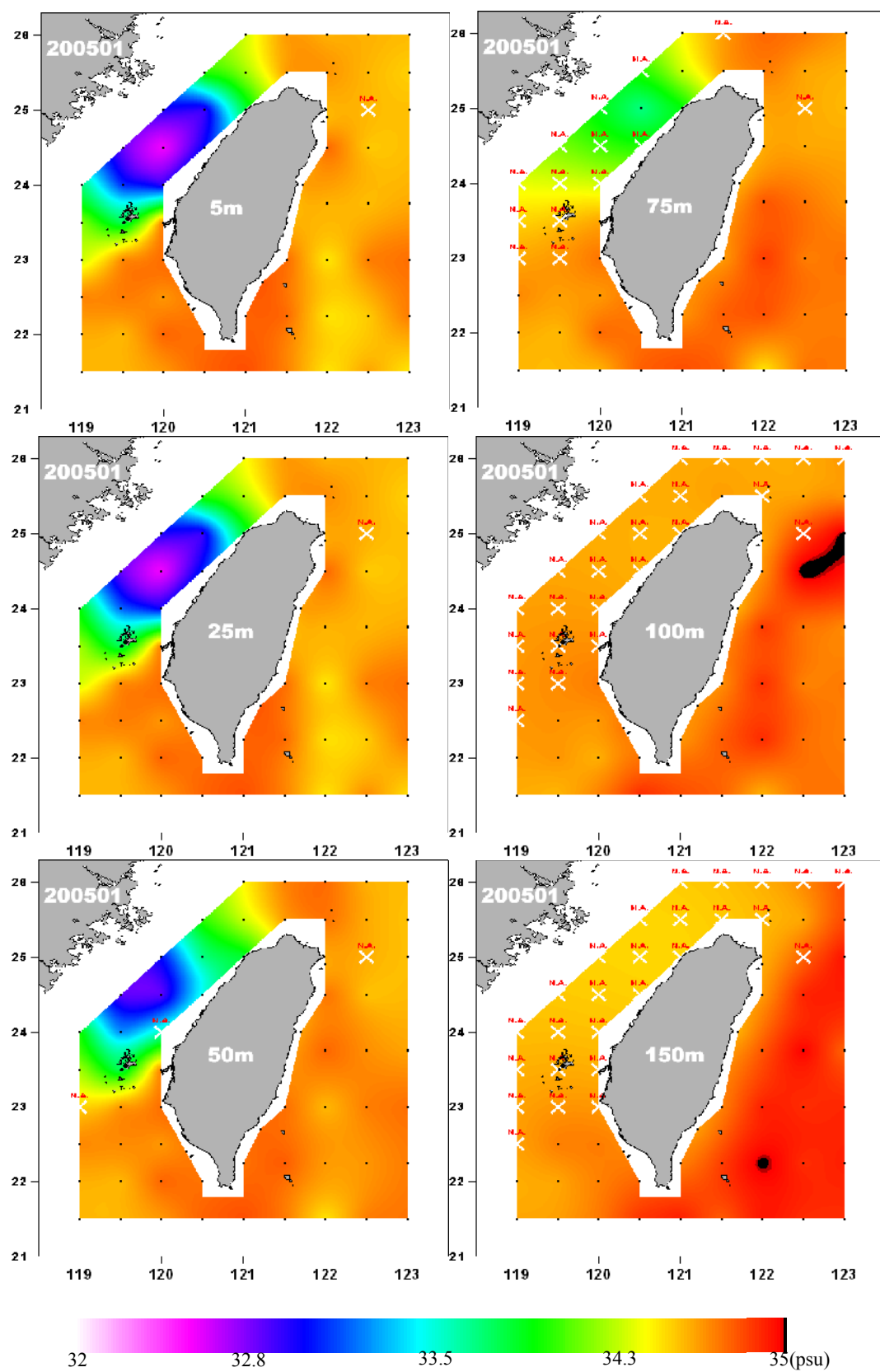


圖 23. 2005-01 航次鹽度分布
Fig.23.Salinity distribution in Jan. 2005

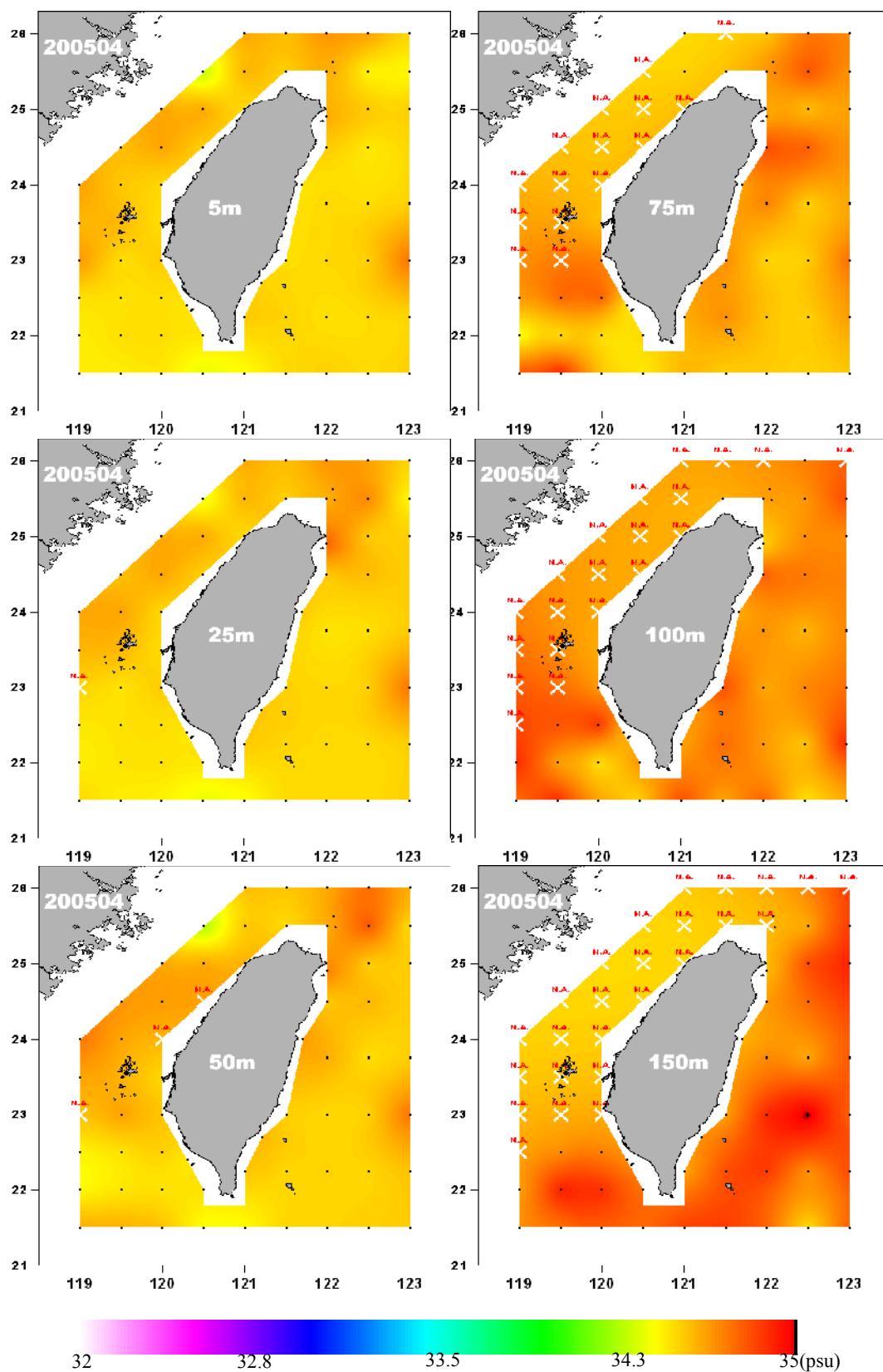


圖 24. 2005-04 航次鹽度分布
Fig.24.Salinity distribution in Apr. 2005

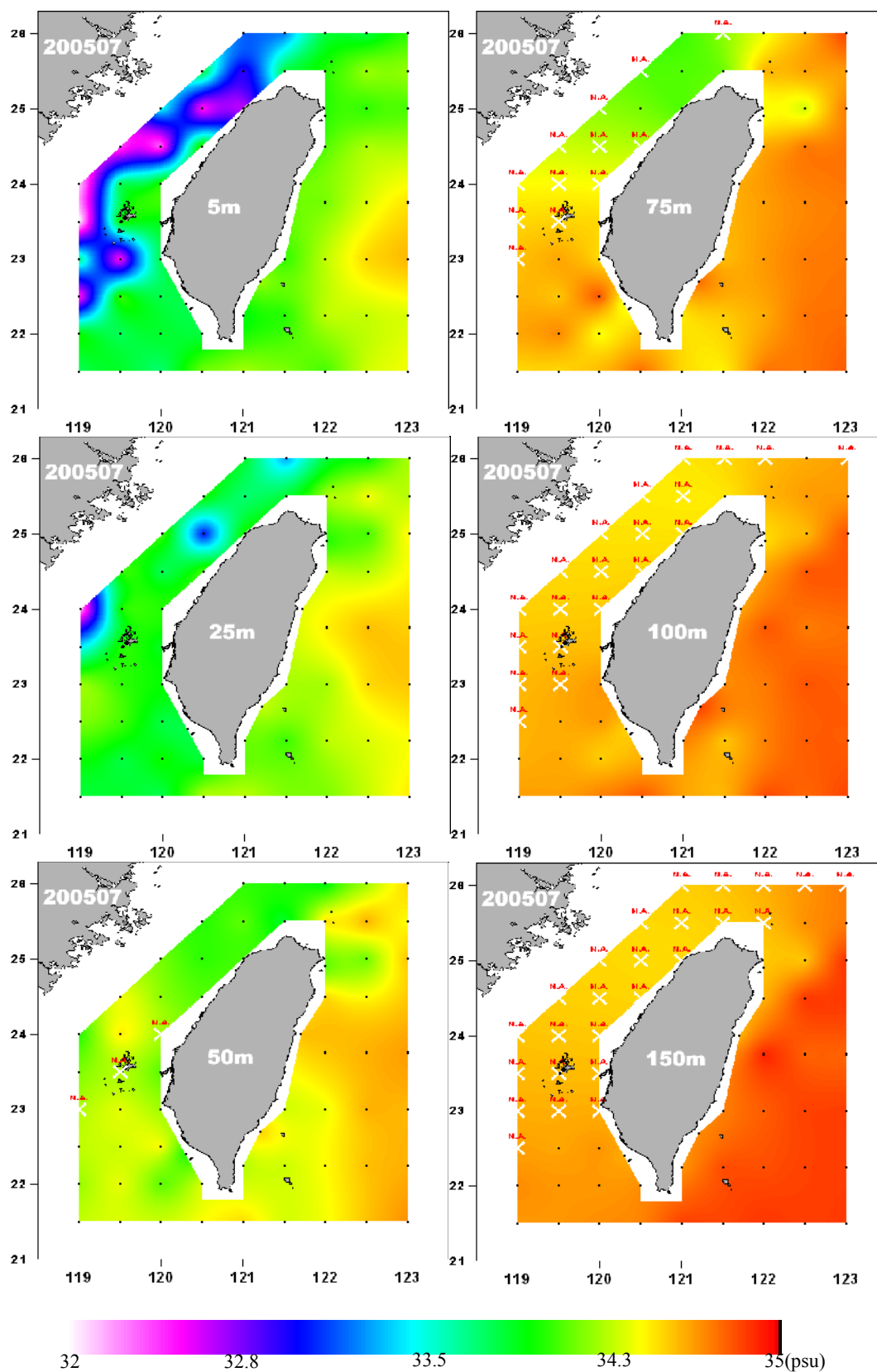


圖 25. 2005-07 航次鹽度分布
Fig.25.Salinity distribution in Jul. 2005

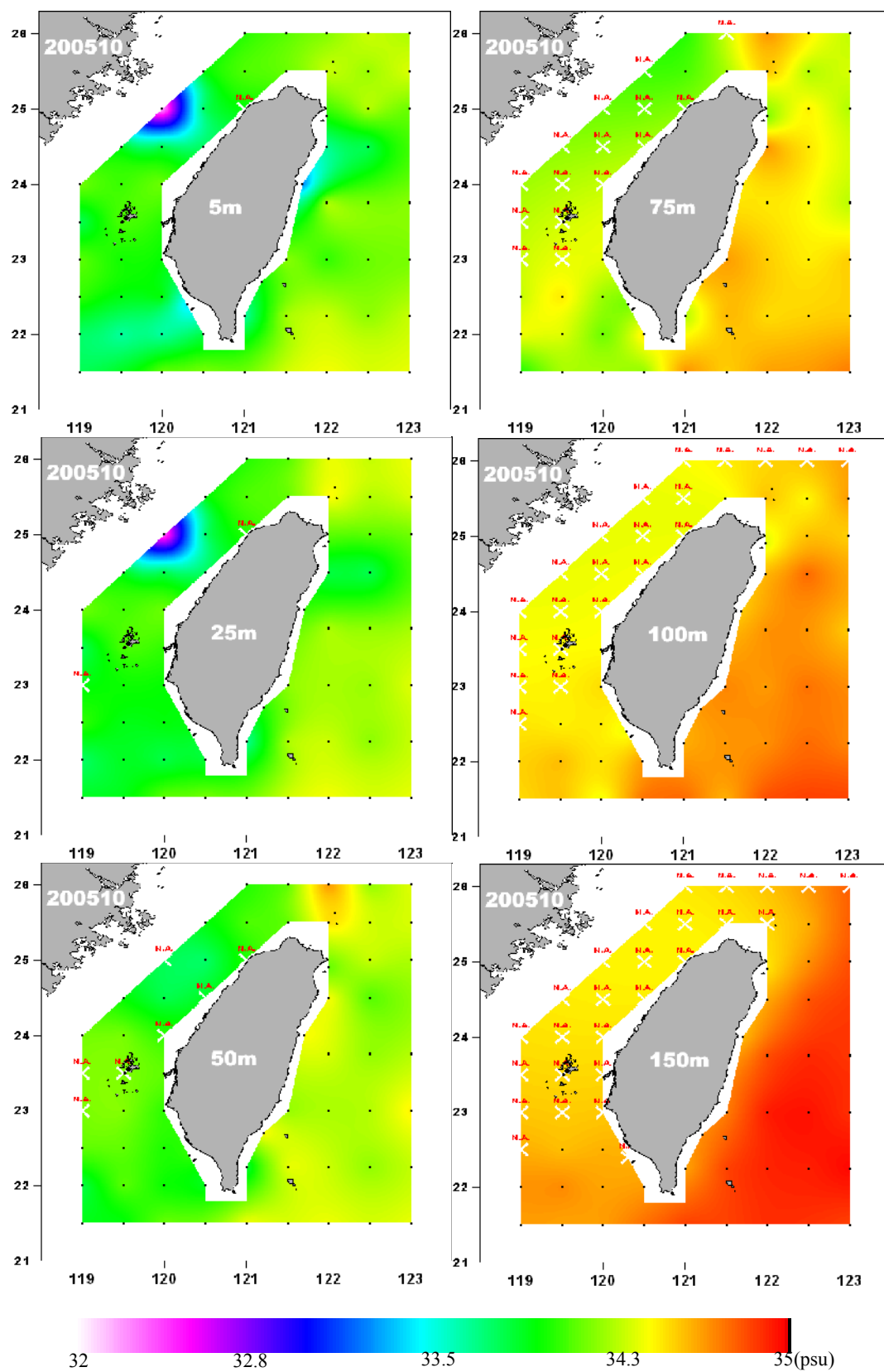


圖 26. 2005-10 航次鹽度分布
Fig.26.Salinity distribution in Oct. 2005

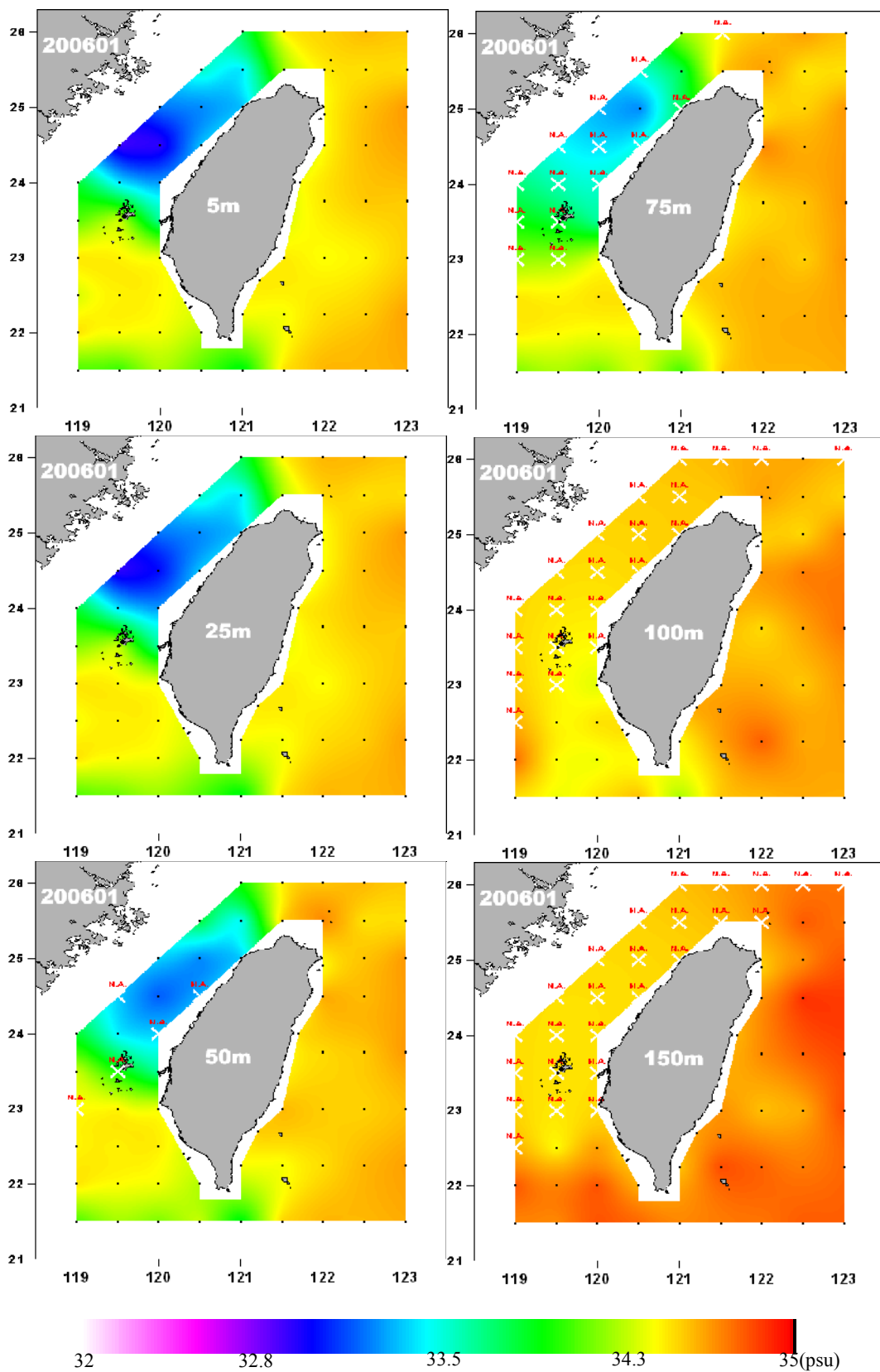


圖 27. 2006-01 航次鹽度分布
Fig.27.Salinity distribution in Jan. 2006

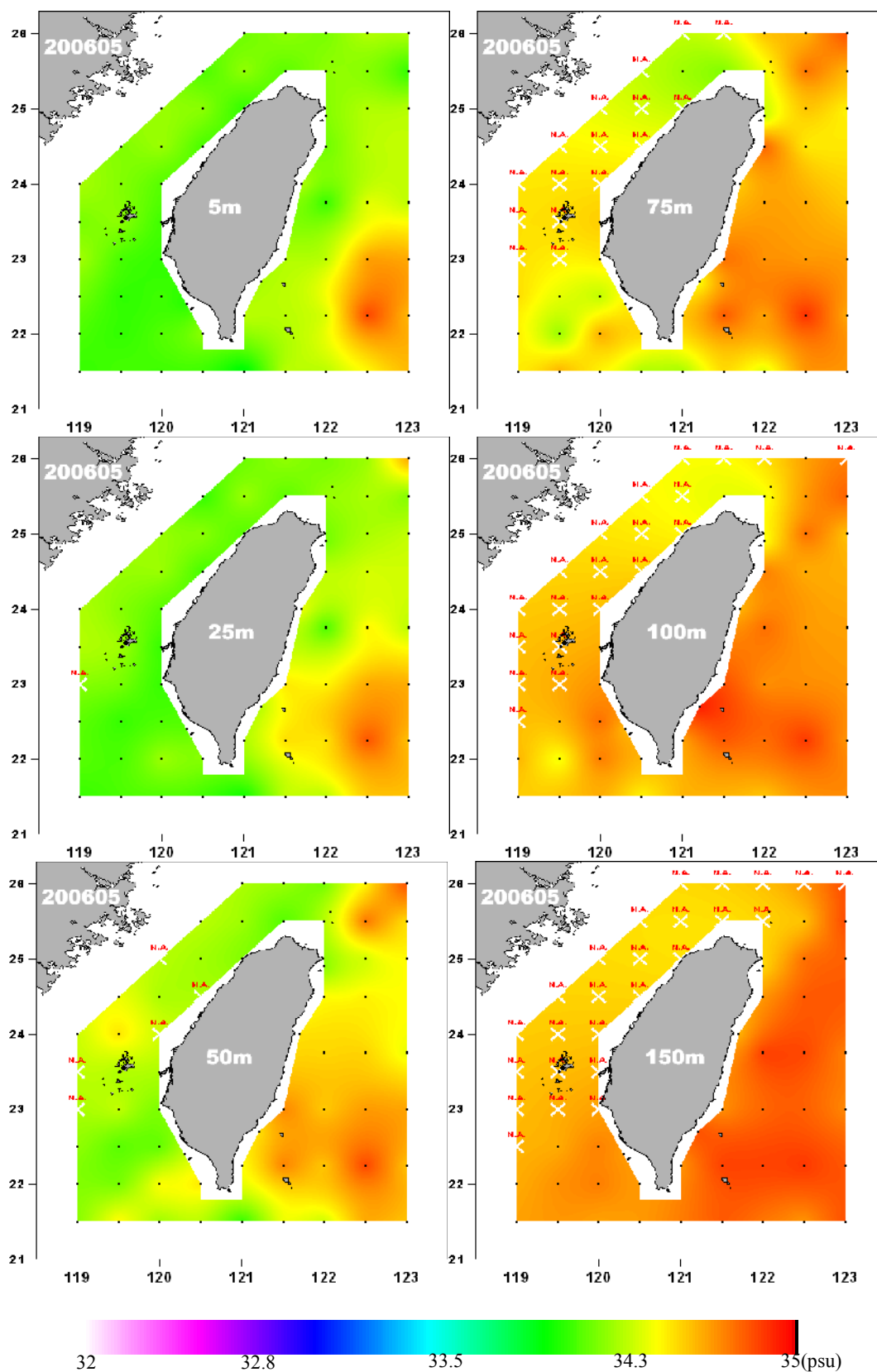


圖 28. 2006-05 航次鹽度分布
Fig.28.Salinity distribution in May 2006

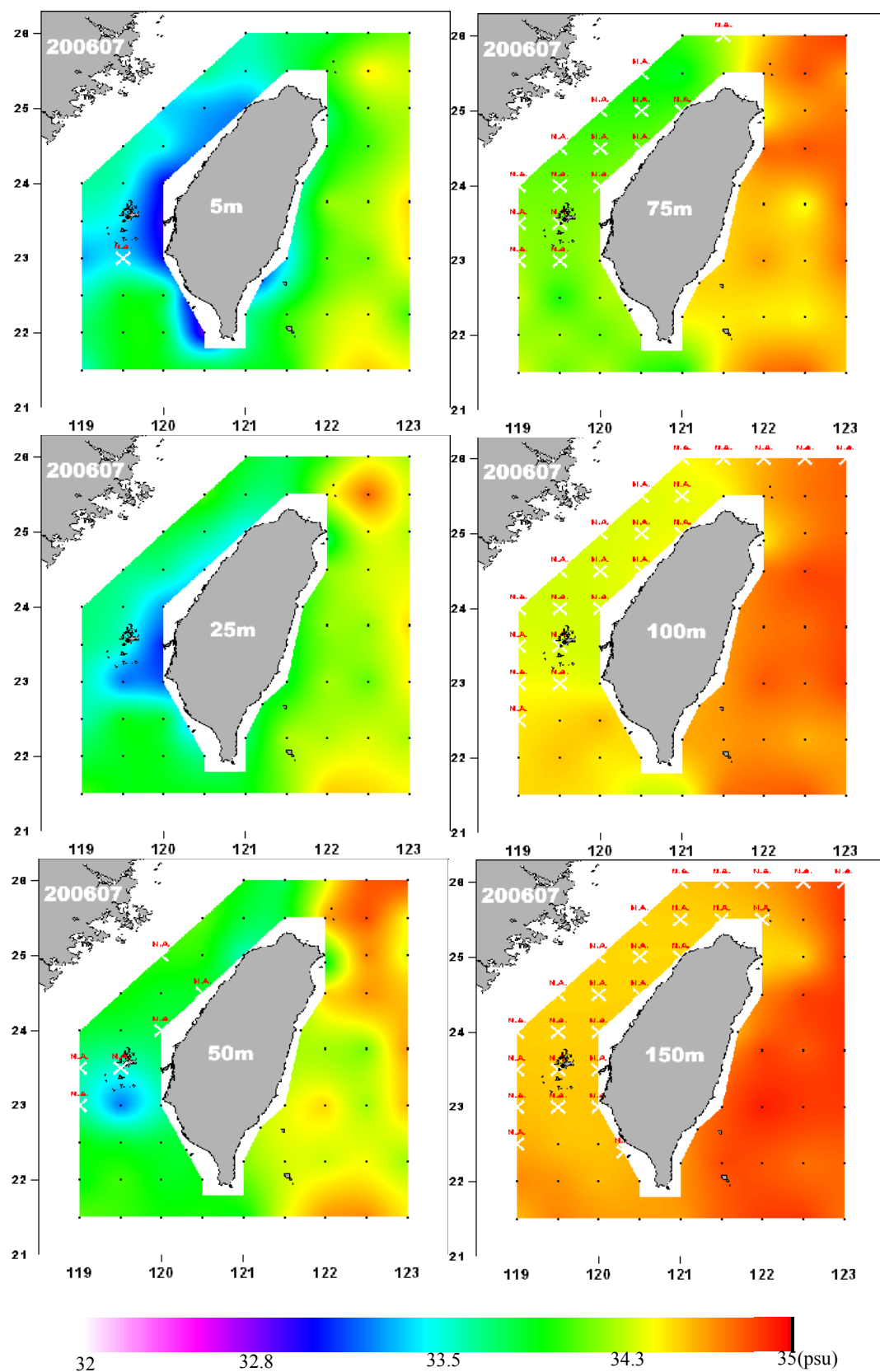


圖 29. 2006-07 航次鹽度分布
Fig.29. Salinity distribution in Jul. 2006

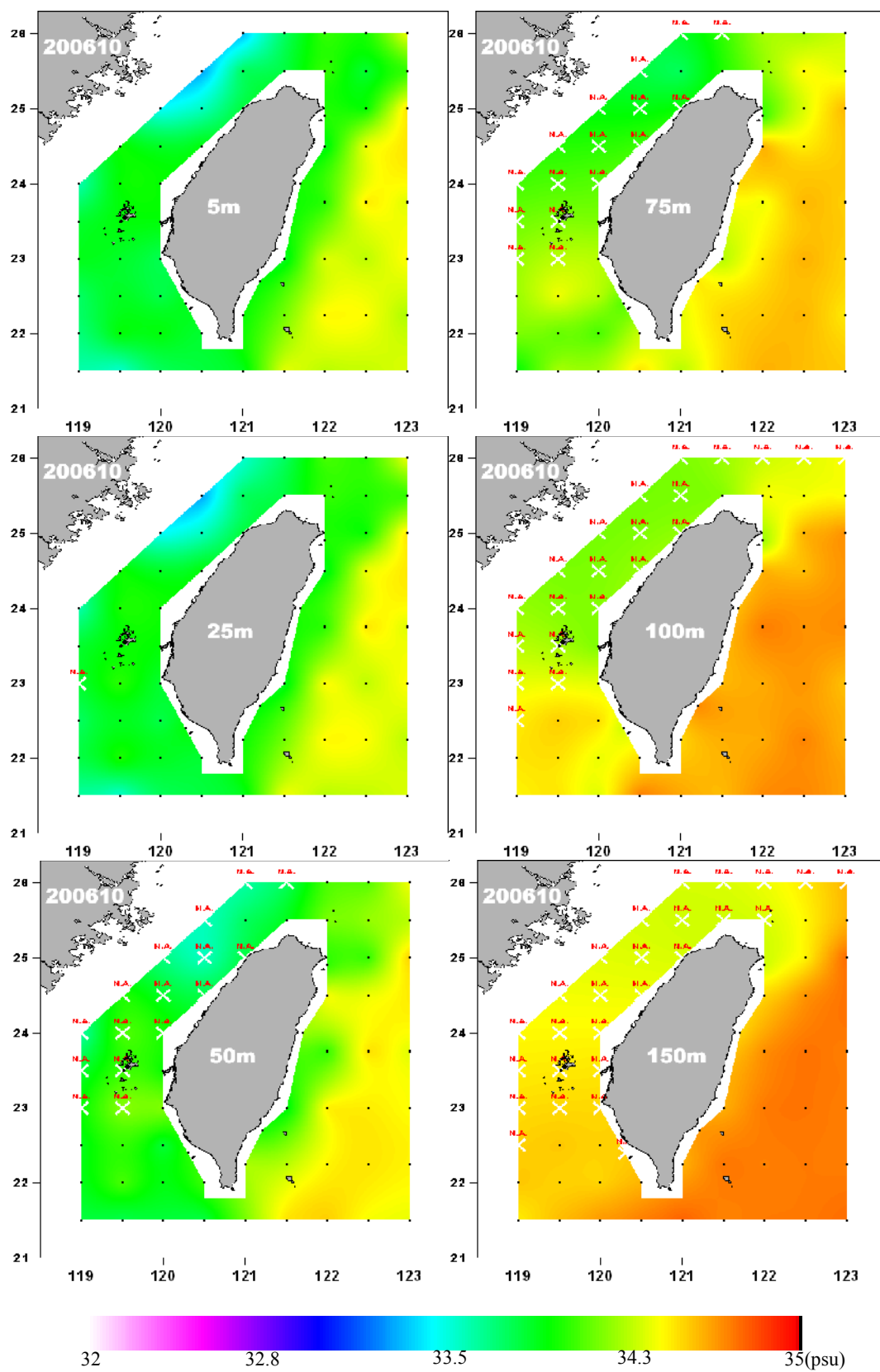


圖 30. 2006-10 航次鹽度分布
Fig.30. Salinity distribution in Oct. 2006

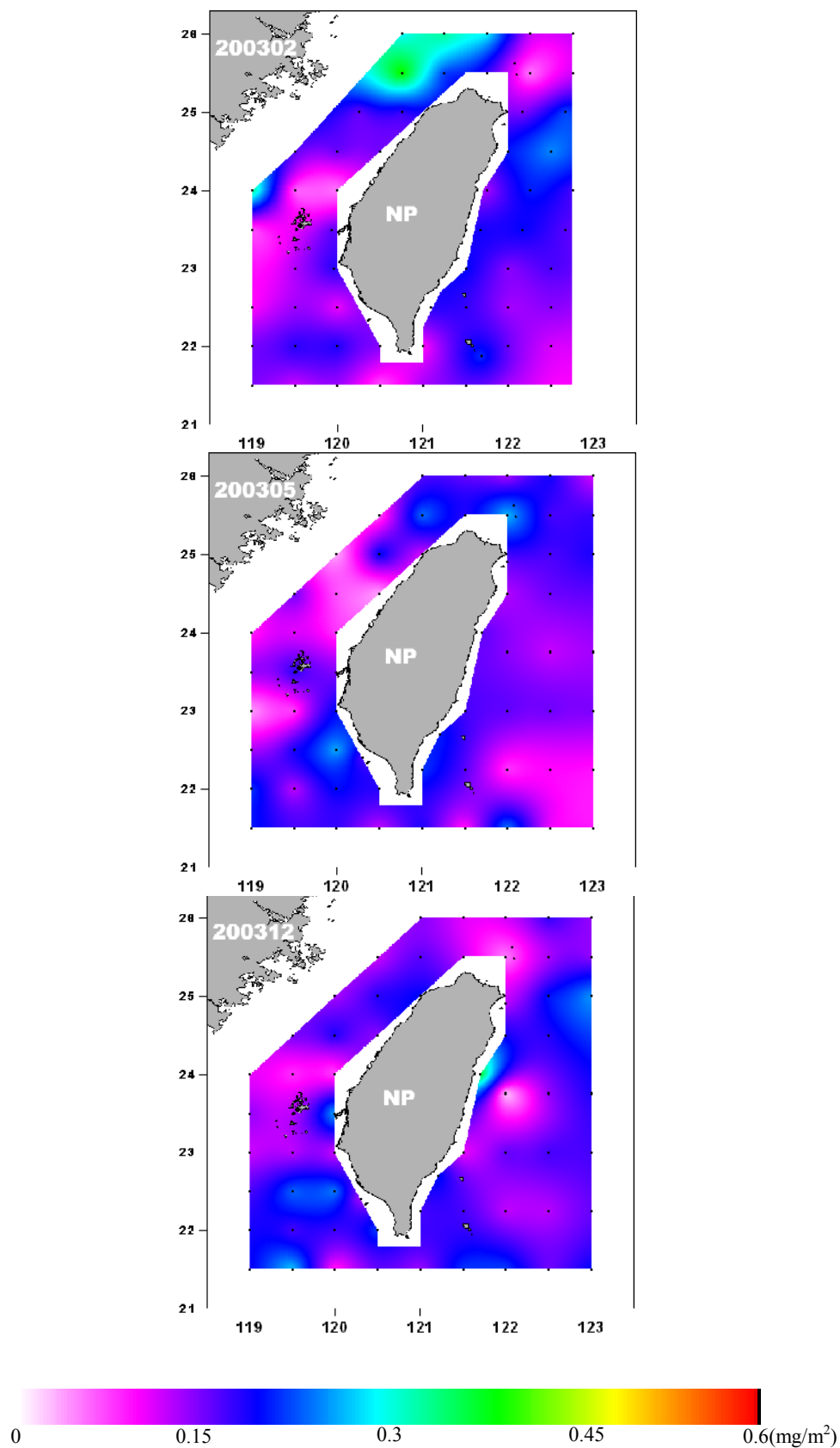


圖 31. 2003 年 2 月、5 月及 12 月微型葉綠素甲(Nano-chl-*a*)分布
 Fig.31. Seasonal distribution of nano-chlorophyll-*a* in 2003

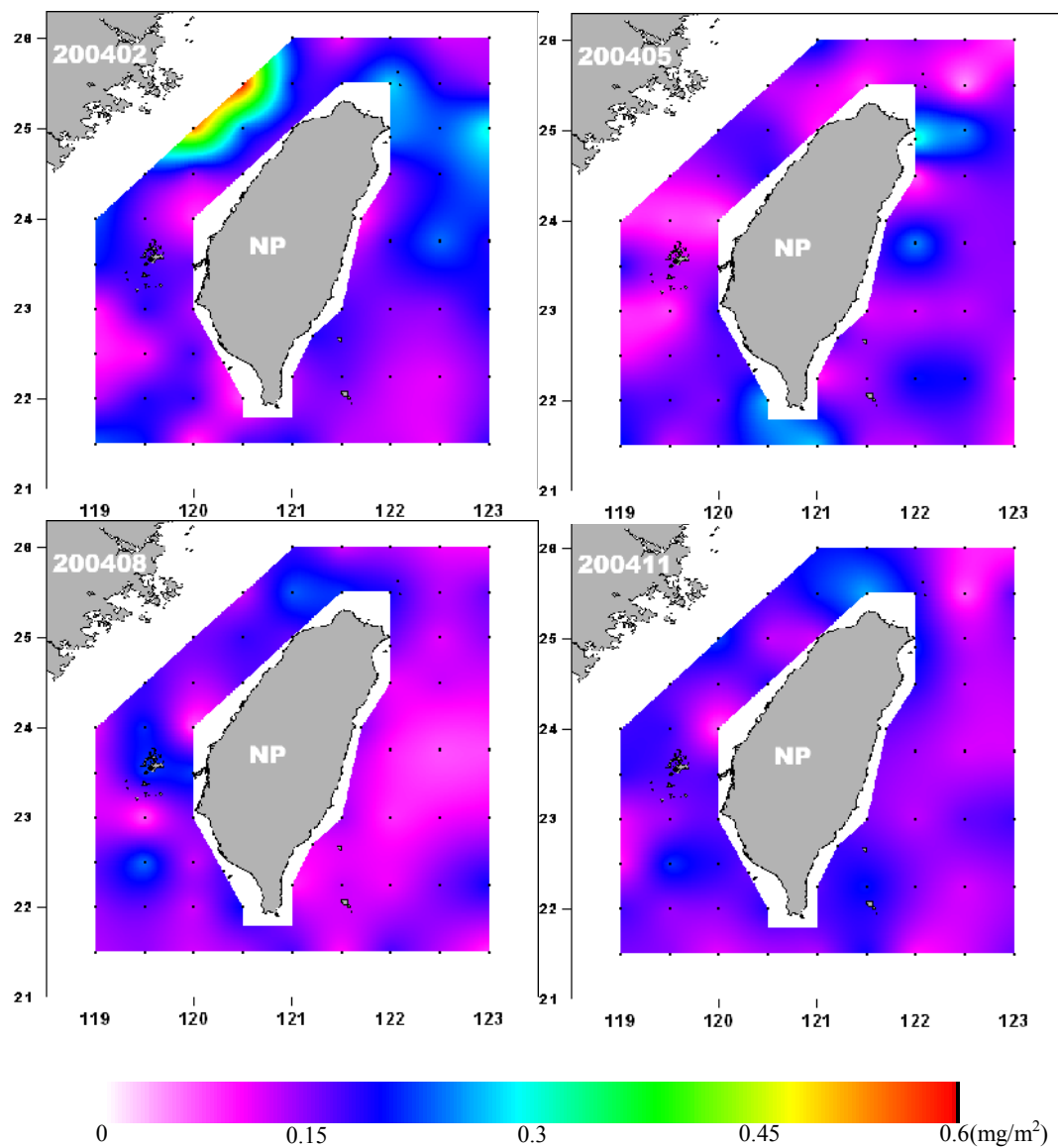


圖 32. 2004 年 2 月、5 月、8 月及 11 月微型葉綠素甲(Nano-chl-*a*)分布
 Fig.32. Seasonal distribution of nano-chlorophyll-*a* in 2004

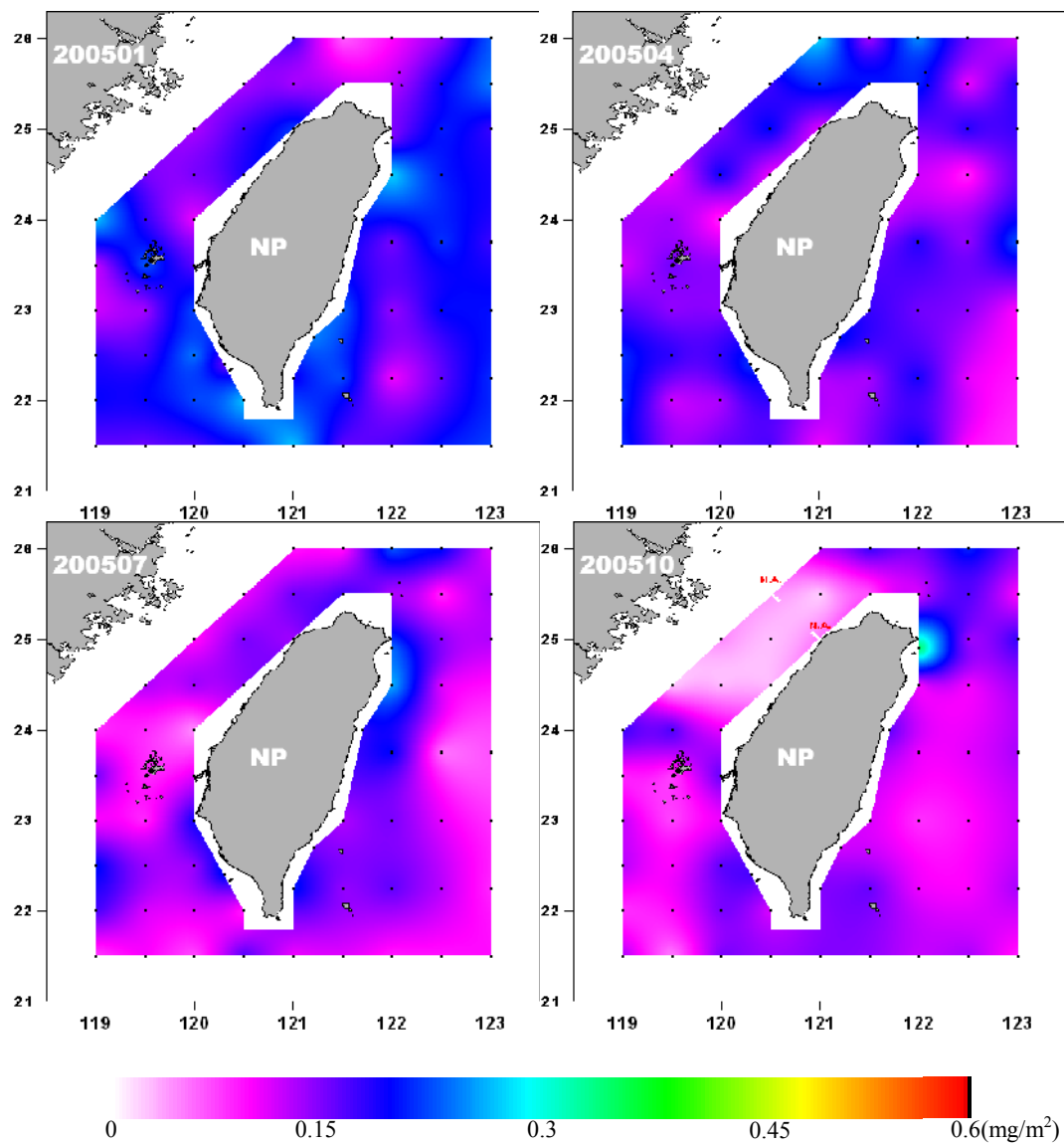


圖 33. 2005 年 1 月、4 月、7 月及 10 月微型葉綠素甲(Nano-chl-*a*)分布
 Fig.33. Seasonal distribution of nano-chlorophyll-*a* in 2005

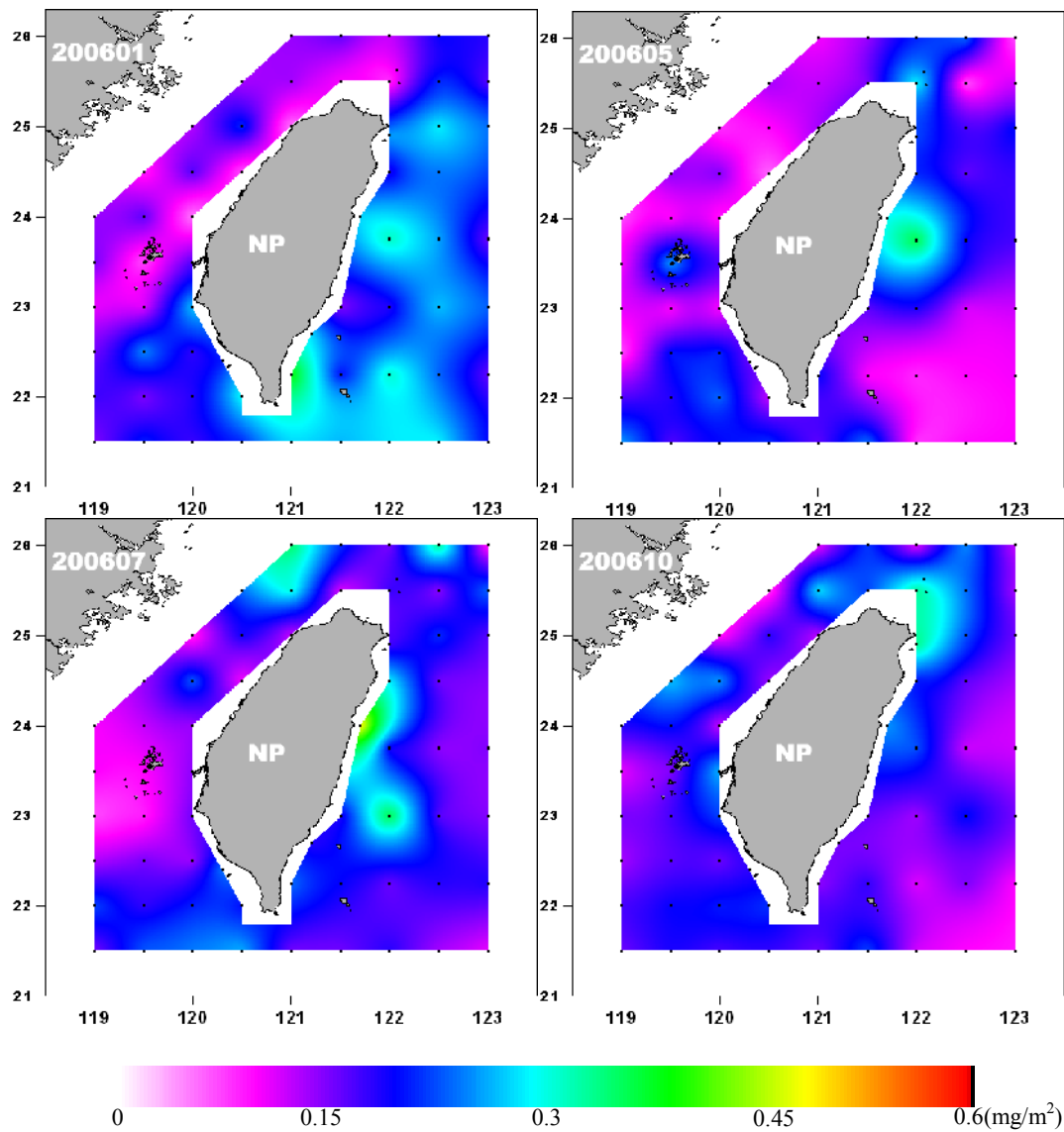


圖 34. 2006 年 1 月、5 月、7 月及 10 月微型葉綠素甲(Nano-chl-*a*)分布
 Fig.34. Seasonal distribution of nano-chlorophyll-*a* in 2006

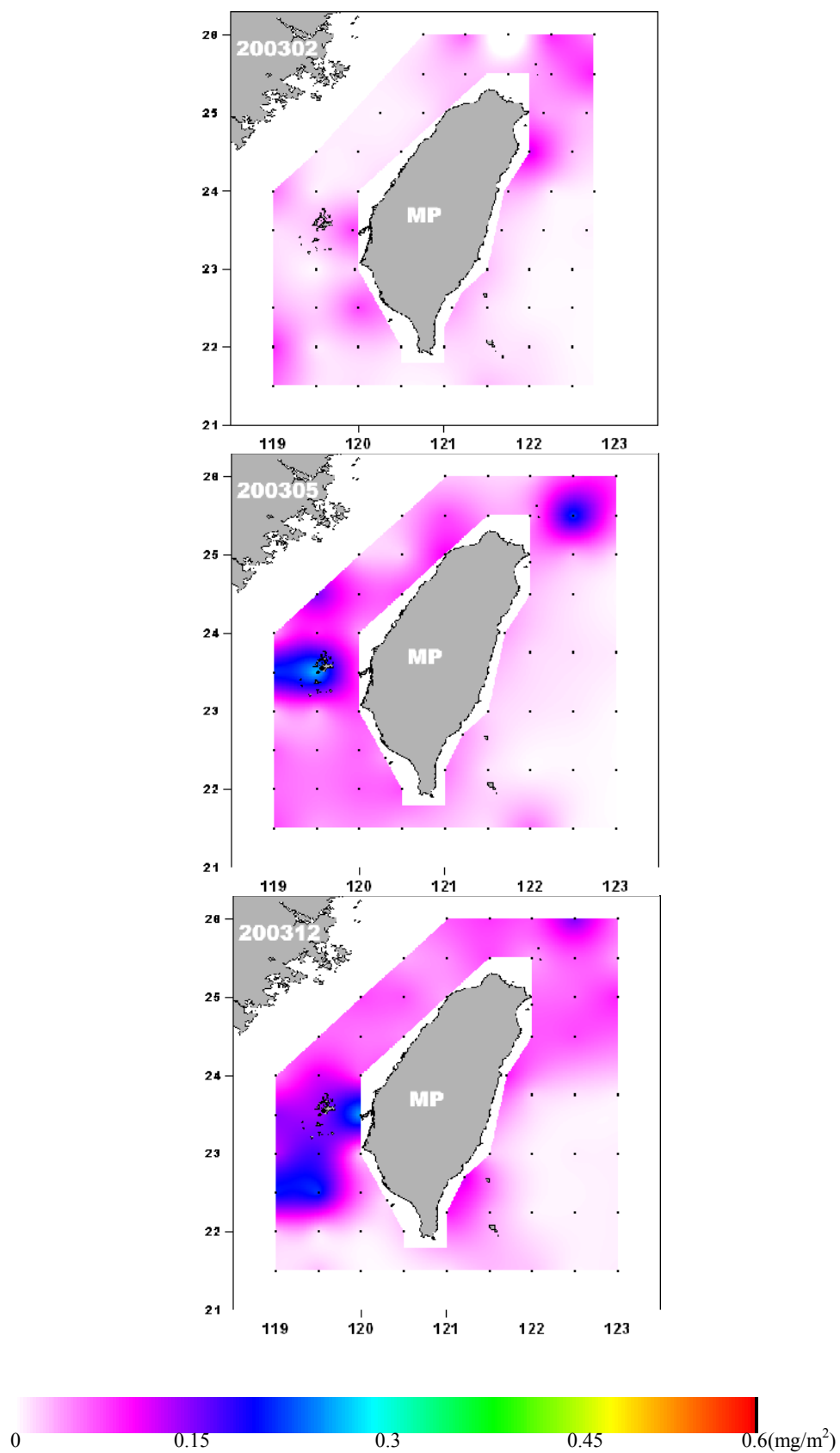


圖 35. 2003 年 2 月、5 月及 12 月小型葉綠素甲(Micro-chl-*a*)分布
 Fig.35. Seasonal distribution of micro-chlorophyll-*a* in 2003

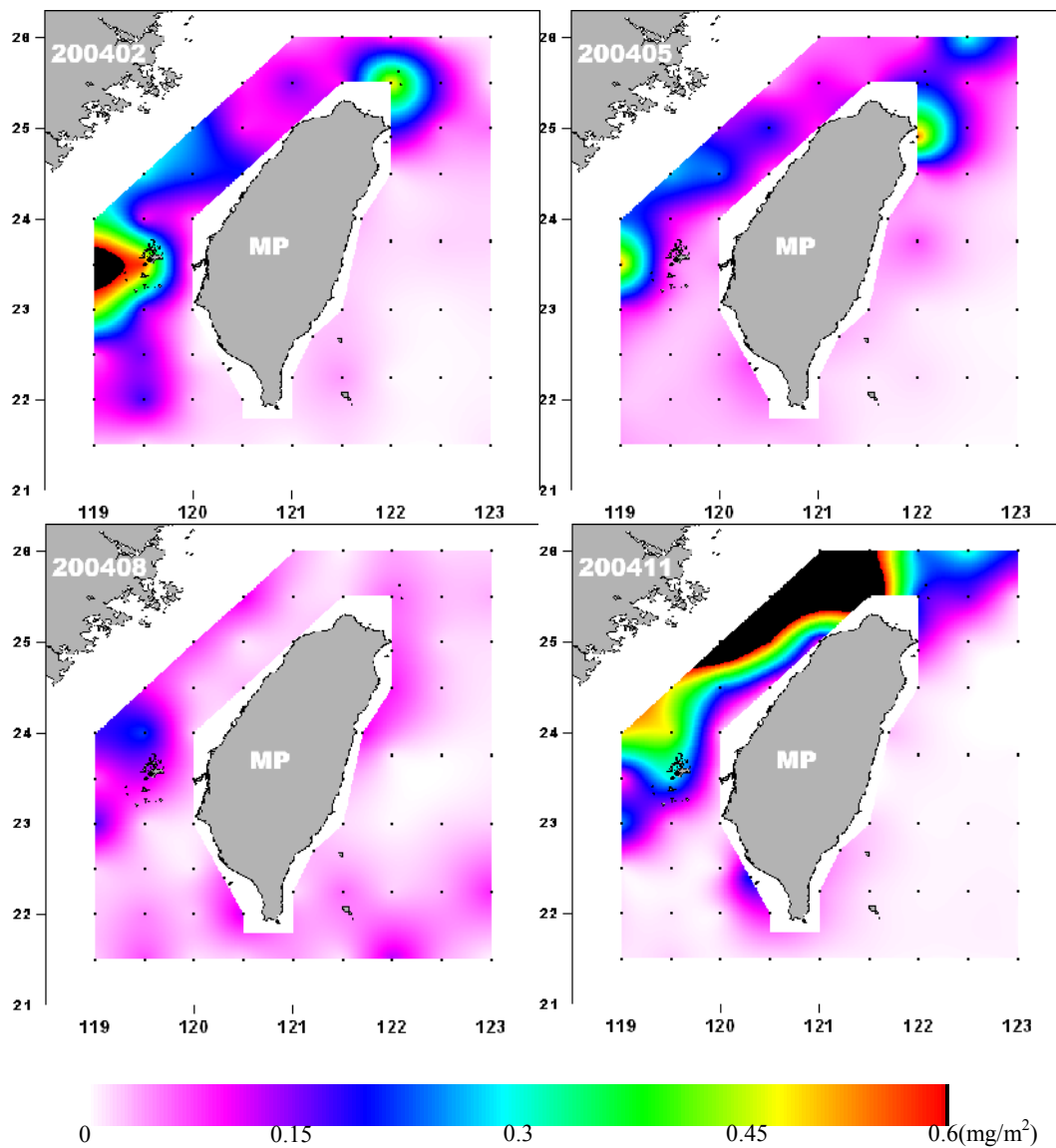


圖 36. 2004 年 2 月、5 月、8 及 11 月小型葉綠素甲(Micro-chl-*a*)分布
 Fig.36. Seasonal distribution of micro-chlorophyll-*a* in 2004

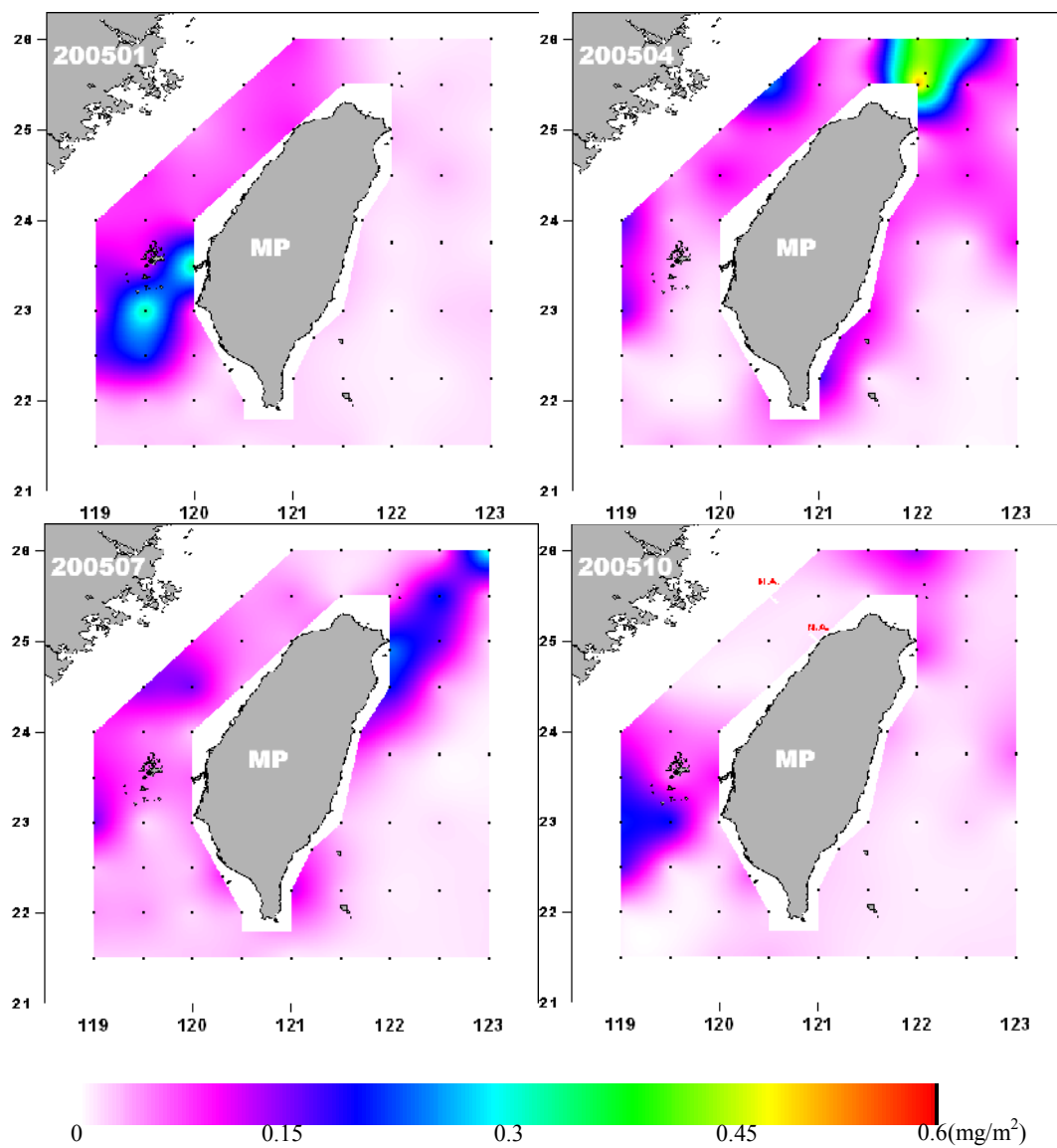


圖 37. 2005 年 1 月、4 月、7 月及 10 月小型葉綠素甲(Micro-chl-*a*)分布
 Fig.37. Seasonal distribution of micro-chlorophyll-*a* in 2005

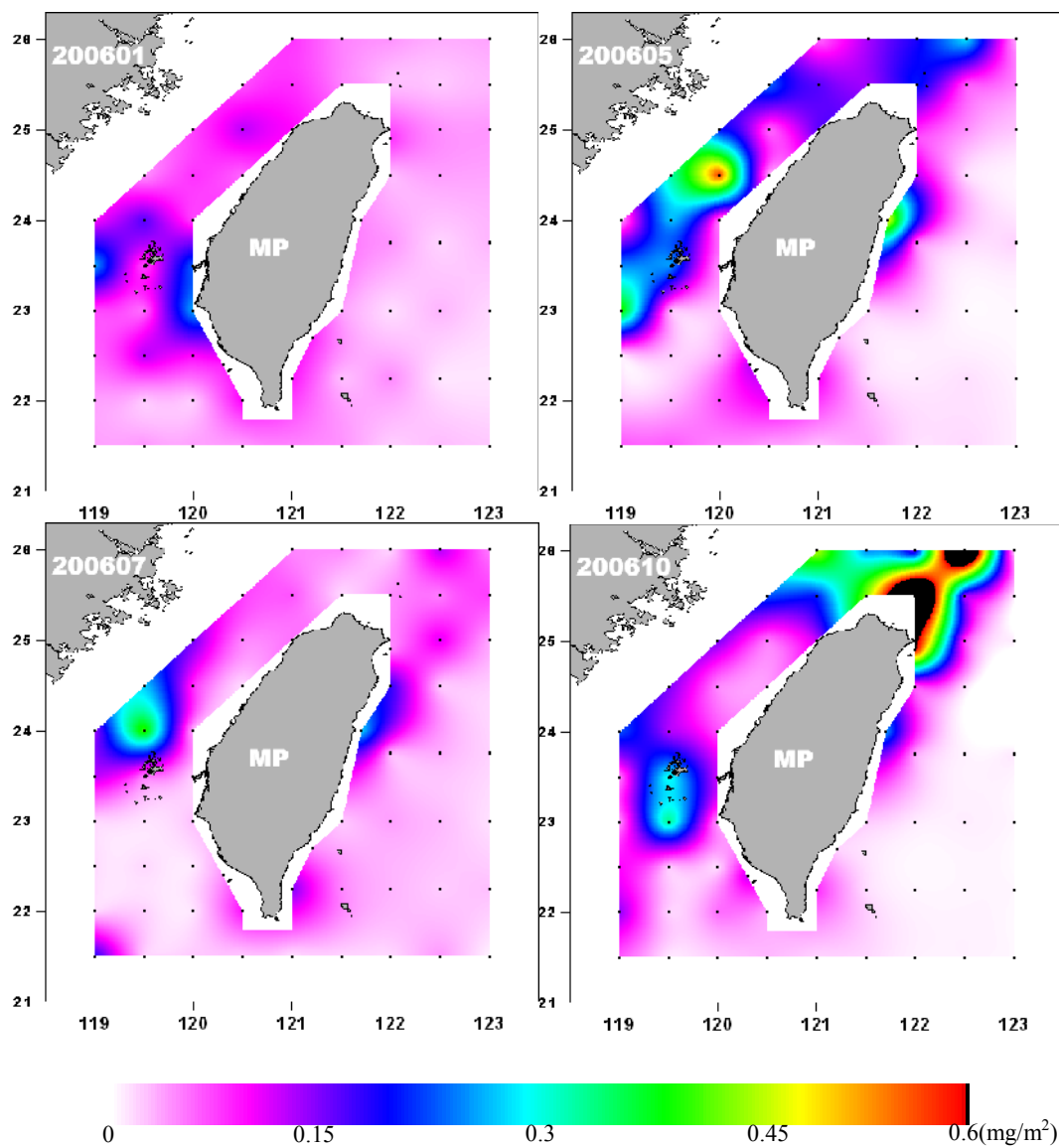


圖 38. 2006 年 1 月、5 月、7 月及 10 月小型葉綠素甲(Micro-chl-*a*)分布
 Fig.38. Seasonal distribution of micro-chlorophyll-*a* in 2006

表 01. 2004-08-04 航次基礎觀測資料
Chart 01. Basic observation data in Aug. 2004

Station	Date	SM T	Lati.	Long.	Depth	SST	AirT.	AirP.	W indD.	W indF.	O N D	Fl.Ct.	V M S.
St01	20040804	1330	24.87	122.01	436	29.5	29.2	1002.80	143	3.0	200	1414	848.4
St02	20040804	1646	25.01	122.51	1449	30.7	29.8	1001.60	132	4.0	200	943	565.8
St03	20040804	2005	25.00	123.01	1647	30.6	29.3	1003.40	155	5.0	200	1237	742.2
St04	20040805	0151	24.51	122.51	582	20.6	28.4	1003.50	175	5.3	200	1138	682.8
St05	20040805	0540	24.48	122.01	1319	29.2	27.4	1004.60	341	0.1	200	777	466.2
St06	20040805	1000	24.00	121.69	356	29.8	29.2	1004.90	167	3.4	200	643	385.8
St07	20040805	1325	23.76	122.02	3270	31.8	30.1	1004.30	146	3.4	200	753	451.8
St08	20040805	1643	23.74	122.51	3116	31.9	29.7	1004.90	102	3.4	200	748	448.8
St09	20040805	2000	23.75	123.00	3664	31.6	29.6	1005.90	102	6.1	200	1060	636.0
St10	20040806	0117	23.00	122.98	4918	30.7	29.9	1005.30	051	6.0	200	836	501.6
St11	20040806	0433	23.01	122.50	5463	30.7	29.0	1005.60	088	4.8	200	850	510.0
St12	20040806	0742	23.01	122.00	4847	30.7	29.5	1006.70	085	6.3	200	893	535.8
St13	20040806	1110	23.00	121.49	1947	31.0	29.7	1006.30	028	5.9	200	826	495.6
St14	20040806	1518	22.65	121.24	1071	31.1	29.7	1004.60	054	7.8	200	1199	719.4
St15	20040806	1836	22.24	120.99	1179	31.6	29.3	1005.30	032	7.5	200	722	433.2
St16	20040806	2221	22.22	121.48	893	31.1	29.4	1006.30	035	8.3	200	945	567.0
St17	20040807	0221	22.23	121.99	4590	30.1	29.2	1003.30	047	7.6	200	1016	609.6
St18	20040807	0603	22.27	122.49	4837	30.1	28.9	1004.90	035	5.9	200	817	490.2
St19	20040807	0945	22.26	123.00	3669	30.5	29.2	1004.60	050	9.7	200	910	546.0
St20	20040807	1519	21.50	122.98	4503	30.5	29.6	1001.90	041	6.4	200	1069	641.4
St21	20040807	1851	21.51	122.50	4793	30.9	29.4	1003.30	048	8.6	200	1006	603.6
St22	20040807	2247	21.50	121.99	3464	30.4	29.0	1003.80	053	7.2	200	866	519.6
St23	20040808	0217	21.49	121.49	2136	30.1	28.7	1002.80	023	7.9	200	1005	603.0
St24	20040808	0553	21.51	121.01	1072	30.0	28.7	1003.30	030	9.2	200	722	433.2
St25	20040808	0932	21.51	120.52	1850	30.4	29.0	1004.90	169	7.4	200	861	516.6
St26	20040808	1307	21.49	119.98	2977	31.1	29.5	1003.30	071	7.4	200	870	522.0
St27	20040808	1627	21.50	119.50	2972	31.1	29.3	1002.80	110	4.3	200	623	373.8
St28	20040808	1958	21.49	119.00	2606	30.6	29.0	1003.70	200	4.3	200	918	550.8
St29	20040808	2335	22.00	119.02	1779	30.7	28.9	1003.50	180	6.7	200	1096	657.6
St30	20040809	0307	21.98	119.51	2436	30.3	28.6	1002.40	184	3.3	200	1142	685.2
St31	20040809	0633	22.00	120.01	1177	30.1	28.8	1003.70	290	0.1	200	706	423.6
St32	20040809	0951	21.99	120.50	301	30.5	29.2	1004.40	275	4.3	200	609	365.4
St33	20040809	1415	22.38	120.32	468	31.1	29.3	1002.60	312	6.7	200	637	382.2
St34	20040810	0831	22.50	119.98	795	30.3	28.6	1001.90	342	5.8	200	980	588.0
St35	20040810	1141	22.51	119.50	233	30.5	28.2	1001.40	339	8.6	200	714	428.4
St36	20040810	1450	22.50	119.01	90	30.2	28.1	999.90	348	10.6	90	543	325.8
St37	20040810	1755	22.96	119.10	32	29.8	27.3	998.30	004	8.6	30	166	99.6
St38	20040810	2020	23.01	119.50	75	29.9	28.1	1000.10	005	10.0	70	360	216.0
St39	20040810	2258	23.00	119.91	131	30.2	28.6	999.00	350	12.8	122	403	241.8
St40	20040811	0227	23.50	119.91	117	30.2	28.5	996.20	020	14.5	113	606	363.6
St41	20040811	0507	23.45	119.49	68	29.5	27.5	997.30	353	10.5	58	307	184.2
St42	20040811	0750	23.51	119.00	59	29.5	28.1	998.90	358	10.4	55	214	128.4
St43	20040811	1154	24.00	119.00	63	29.8	28.3	998.90	015	9.8	60	175	105.0
St44	20040811	1514	24.01	119.49	68	29.2	28.4	997.10	020	6.7	60	101	60.6
St45	20040811	1837	24.01	120.00	46	29.7	28.2	995.70	011	10.1	50	193	115.8
St46	20040821	1545	24.50	120.51	57	30.5	29.0	1006.20	346	4.0	50	195	117.0
St47	20040821	1841	24.50	120.00	63	30.5	29.0	1006.70	240	0.2	55	316	189.6
St48	20040821	2141	24.51	119.50	66	30.5	28.7	1008.30	220	2.0	68	208	124.8
St49	20040822	0127	25.00	120.01	57	30.2	28.5	1007.40	188	0.1	49	221	132.6
St50	20040822	0425	25.01	120.52	71	30.2	28.0	1006.50	045	0.8	65	428	256.8
St51	20040822	0645	25.08	120.91	76	29.7	27.5	1006.90	070	2.0	77	383	229.8
St52	20040822	1012	25.52	120.49	67	30.5	28.7	1007.80	015	4.0	58	214	128.4
St53	20040822	1411	25.99	121.00	85	30.7	29.5	1005.60	040	2.0	80	371	222.6
St54	20040822	1612	25.51	121.02	96	30.7	28.9	1004.70	065	7.1	86	464	278.4
St55	20040822	1942	25.52	121.49	114	30.1	28.4	1005.90	065	4.6	110	806	483.6
St56	20040822	2246	26.00	121.50	75	30.1	28.5	1006.20	020	3.6	66	290	174.0
St57	20040823	0150	26.00	122.01	104	29.2	28.1	1003.70	012	6.1	100	371	222.6
St58	20040823	0445	25.98	122.50	109	29.8	28.4	1001.90	017	9.4	100	462	277.2
St59	20040908	0023	26.00	123.00	98	29.4	27.2	1007.04	045	7.8	90	404	242.4
St60	20040908	0426	25.50	123.00	777	29.3	28.7	1006.15	040	9.0	200	1005	603.0
St61	20040823	0740	25.50	122.50	470	30.4	28.8	1001.90	355	12.8	200	1099	659.4
St62	20040823	1105	25.50	122.00	123	29.9	28.4	1001.70	345	12.1	116	484	290.4

表 02. 2005-01-02 航次基礎觀測資料
Chart 02. Basic observation data in Jan. 2005

Station	Date	SM T	Lati.	Long.	Depth	SST	AirT.	AirP.	W indD.	W indF.	O N D	Fl.Ct.	V M S.
St01	20050119	2038	24.87	122.00	340	20.3	17.0	1021.46	032	12.0	200	-	-
St02	20050120	0831	25.01	122.51	1142	22.7	17.4	1025.02	046	90.0	200	-	-
St03	20050120	0504	24.99	123.00	1669	22.6	16.9	1021.99	045	13.1	200	-	-
St04	20050120	0022	24.51	122.50	586	22.4	18.9	1020.93	038	10.7	200	-	-
St05	20050106	2204	24.50	122.00	958	23.3	18.4	1020.93	336	6.7	200	-	-
St06	20050106	1840	24.01	121.68	452	23.7	20.2	1019.19	013	5.7	200	-	-
St07	20050106	1506	23.76	122.00	3247	24.4	20.5	1016.48	014	11.8	200	-	-
St08	20050106	1151	23.76	122.50	3184	24.4	21.2	1017.90	030	14.8	200	-	-
St09	20050106	0837	23.75	123.00	3646	24.3	20.3	1019.50	011	3.1	200	-	-
St10	20050106	0404	23.00	123.00	5384	24.3	21.7	1015.59	076	5.2	200	-	-
St11	20050106	0039	23.00	122.50	4528	24.0	21.0	1016.48	076	3.1	200	-	-
St12	20050105	2122	23.01	122.00	4874	24.3	20.7	1018.08	056	8.0	200	-	-
St13	20050105	1748	23.02	121.53	2099	24.2	20.5	1017.01	012	11.2	200	-	-
St14	20050105	1500	22.67	121.25	1189	24.7	21.0	1016.12	048	10.4	200	-	-
St15	20050105	1131	22.25	121.00	1205	24.1	20.8	1017.54	028	12.5	200	-	-
St16	20050105	0602	22.26	121.50	3568	24.0	19.8	1018.43	020	15.6	200	-	-
St17	20050105	0113	22.26	122.00	4336	24.3	20.8	1016.83	031	14.2	200	-	-
St18	20050104	2057	22.26	122.50	4867	23.8	19.8	1017.54	034	10.5	200	-	-
St19	20050104	1654	22.27	123.02	3912	23.7	20.6	1016.30	063	6.5	200	-	-
St20	20050104	1205	21.51	122.99	4920	18.5	18.5	1015.94	052	10.8	200	-	-
St21	20050104	0821	21.51	122.48	4729	23.9	19.3	1017.90	017	11.7	200	-	-
St22	20050104	0435	21.51	122.00	3472	12.3	19.9	1014.87	030	10.8	200	-	-
St23	20050104	0049	21.51	121.51	2088	12.7	20.0	1014.16	051	14.1	200	-	-
St24	20050103	2119	21.50	121.01	932	24.0	20.8	1015.05	055	12.5	200	-	-
St25	20050103	1742	21.51	120.50	1782	23.9	20.0	1014.52	023	11.2	200	-	-
St26	20050103	1406	21.50	120.00	2957	23.4	20.4	1013.09	063	12.1	200	-	-
St27	20050103	1022	21.51	119.50	2995	22.9	19.4	1000.00	070	8.6	200	-	-
St28	20050103	0700	21.51	119.01	2817	22.5	19.6	1015.41	045	10.1	200	-	-
St29	20050103	0325	22.00	118.99	1480	22.4	18.8	1015.41	027	7.0	200	-	-
St30	20050103	0024	22.01	119.50	2420	22.9	19.0	1016.83	036	8.2	200	-	-
St31	20050102	2116	22.00	119.99	1136	23.9	19.4	1017.54	090	5.0	200	-	-
St32	20050102	1759	22.01	120.51	624	23.2	18.7	1016.65	074	10.5	200	-	-
St33	20050124	0405	22.38	120.33	235	23.0	19.6	1016.30	355	4.3	160	-	-
St34	20050124	0140	22.51	120.00	646	22.7	19.2	1017.19	004	6.6	200	-	-
St35	20050123	2243	22.51	119.50	245	22.3	19.7	1017.19	012	7.6	200	-	-
St36	20050123	1946	22.49	119.00	93	22.4	18.9	1016.63	012	6.7	80	-	-
St37	20050123	1642	22.94	119.08	33	20.5	16.6	1015.00	029	14.2	25	-	-
St38	20050123	1424	23.00	119.50	78	21.4	17.4	1016.00	021	9.6	74	-	-
St39	20050123	1153	23.00	119.92	128	22.0	18.6	1016.20	007	10.5	120	-	-
St40	20050123	0835	23.51	119.91	103	20.5	17.6	1017.72	015	14.1	109	-	-
St41	20050123	0602	23.43	119.50	59	18.8	16.8	1017.00	015	92.0	56	-	-
St42	20050123	0311	23.50	119.00	57	19.1	16.7	1017.00	017	6.4	52	-	-
St43	20050123	0015	24.00	119.00	64	18.4	16.1	1018.61	045	3.4	55	-	-
St44	20050122	2122	24.00	119.51	70	16.0	16.1	1019.32	126	6.0	60	-	-
St45	20050122	1836	24.01	120.01	43	17.2	14.3	1019.50	047	2.2	38	-	-
St46	20050122	1432	24.51	120.50	55	16.8	13.9	1017.50	297	4.7	51	-	-
St47	20050122	1146	24.50	119.99	68	15.9	12.2	1019.86	350	600.0	55	-	-
St48	20050122	0845	24.51	119.51	64	16.2	11.8	1020.75	022	9.5	55	-	-
St49	20050122	0446	25.00	120.00	55	16.1	11.2	1019.00	014	10.6	50	-	-
St50	20050122	0155	25.00	120.50	81	17.7	14.0	1020.00	003	16.0	75	-	-
St51	20050121	2319	25.09	120.92	84	19.2	17.7	1021.99	035	10.3	80	-	-
St52	20050121	1951	25.50	120.50	70	14.2	18.3	1023.42	020	10.6	67	-	-
St53	20050121	1603	25.99	121.00	85	17.9	12.3	1024.00	017	11.8	75	-	-
St54	20050121	1237	25.50	121.01	98	19.4	15.9	1024.80	054	11.8	90	-	-
St55	20050121	0944	25.51	121.50	123	20.2	15.5	1020.05	049	10.6	128	-	-
St56	20050121	0631	26.00	121.50	73	20.1	14.6	1026.27	050	10.1	75	-	-
St57	20050121	0358	26.00	122.00	103	21.0	14.2	1026.62	038	10.2	99	-	-
St58	20050121	0107	26.00	122.51	109	21.5	14.7	1026.80	045	12.3	105	-	-
St59	20050120	2230	25.99	123.01	88	24.2	21.2	1027.51	042	13.0	90	-	-
St60	20050120	1757	25.50	123.00	779	21.8	15.5	1025.91	043	9.5	200	-	-
St61	20050120	1435	25.50	122.50	430	21.3	14.4	1023.60	037	14.3	200	-	-
St62	20050117	2156	25.50	122.00	119	20.1	15.6	1021.10	067	2.8	111	-	-

表 03. 2005-04-07 航次基礎觀測資料
Chart 03. Basic observation data in Apr. 2005

Station	Date	SM T	Lati.	Long.	Depth	SST	AirT.	AirP.	W indD.	W indF.	O N D	Fl.Ct.	V M S.
St01	20050407	1518	24.86	122.00	388	24.9	24.3	1010.20	060	0.1	200	1468	880.8
St02	20050407	1816	25.01	122.50	1453	24.8	24.6	1010.96	149	5.9	200	1349	809.4
St03	20050407	2154	25.00	122.99	1637	26.1	24.8	1012.03	170	7.6	200	1271	762.6
St04	20050408	0245	24.50	122.54	670	26.0	25.0	1010.78	171	6.9	200	704	422.4
St05	20050408	0633	24.50	122.01	1045	26.0	24.9	1011.85	193	5.5	200	1400	840.0
St06	20050408	1106	24.00	121.68	523	26.2	26.0	1013.09	127	4.2	200	1302	781.2
St07	20050408	1352	23.76	122.01	3400	27.5	25.5	1011.67	147	7.2	200	1559	935.4
St08	20050408	1700	23.75	122.51	3131	27.0	24.8	1011.31	149	5.0	200	1183	709.8
St09	20050408	1943	23.74	123.00	3641	26.5	24.2	1013.63	142	8.7	200	1461	876.6
St10	20050409	0025	23.00	123.00	5160	24.4	23.1	1013.81	126	5.4	200	1432	859.2
St11	20050409	0337	23.00	122.50	5542	26.1	24.6	1012.20	143	5.2	200	1479	887.4
St12	20050409	0635	23.00	122.01	4928	26.7	25.5	1013.81	153	5.2	200	1310	786.0
St13	20050409	1206	23.00	121.51	2079	26.8	26.1	1014.16	181	4.8	200	1162	697.2
St14	20050409	1413	22.67	121.25	1186	27.0	26.3	1011.31	189	5.7	200	1310	786.0
St15	20050409	0515	22.25	121.00	1213	26.2	25.5	1011.49	216	7.5	200	1161	696.6
St16	20050410	0925	22.25	121.51	790	27.1	26.9	1011.49	192	10.8	200	1305	783.0
St17	20050410	1340	22.25	122.01	4599	27.5	26.9	1009.36	212	9.8	200	1385	831.0
St18	20050410	1746	22.26	122.50	4859	27.3	26.4	1009.53	188	7.2	200	1707	1024.2
St19	20050410	2159	22.24	123.01	3906	27.4	26.1	1012.92	164	5.2	200	1448	868.8
St20	20050411	0255	21.50	123.00	4976	26.8	25.8	1011.31	155	6.4	200	1431	858.6
St21	20050411	0646	21.50	122.50	4791	27.0	26.1	1012.38	173	6.5	200	1290	774.0
St22	20050411	1030	21.51	122.00	3470	27.1	26.6	1013.09	184	6.4	200	1335	801.0
St23	20050411	1426	21.51	121.51	2072	27.4	26.2	1010.25	020	3.7	200	1381	828.6
St24	20050411	1847	21.50	121.00	1026	27.8	25.7	1010.60	304	0.1	200	1512	907.2
St25	20050411	2246	21.51	120.50	1828	26.9	25.9	1011.67	336	3.6	200	1421	852.6
St26	20050412	0304	21.50	119.99	2965	27.1	25.7	1011.14	303	6.0	200	1110	666.0
St27	20050412	0640	21.51	119.49	2964	26.8	25.2	1012.38	310	2.4	200	1104	662.4
St28	20050412	1031	21.50	119.01	28323	27.5	26.8	1013.63	203	2.6	200	903	541.8
St29	20050412	1509	22.00	118.99	1439	28.0	26.4	1011.14	304	3.4	200	1375	825.0
St30	20050412	1938	22.01	119.49	2389	27.6	25.6	1012.20	349	7.1	200	1447	868.2
St31	20050313	0018	22.00	119.99	1104	27.1	24.8	1012.92	003	3.1	200	1490	894.0
St32	20050413	0505	22.00	120.50	362	26.9	23.8	1013.09	072	7.9	200	1380	828.0
St33	20050413	0957	22.37	120.33	179	26.4	21.8	1015.41	318	5.6	200	937	562.2
St34	20050413	1036	22.51	120.00	623	26.0	22.3	1016.65	013	4.7	200	1480	888.0
St35	20050414	1351	22.51	119.51	251	26.2	23.1	1015.05	023	5.4	200	1483	889.8
St36	20050414	1655	22.50	119.00	95	25.6	22.5	1015.05	043	4.5	85	553	331.8
St37	20050414	1836	22.93	119.09	23	24.8	22.5	1015.94	038	7.0	18	104	62.4
St38	20050414	2152	22.99	119.48	81	25.5	23.6	1017.19	007	4.1	70	491	294.6
St39	20050415	0023	23.00	119.91	130	26.0	23.3	1016.48	118	0.1	120	921	552.6
St40	20050415	0257	23.50	119.92	123	25.8	23.1	1016.12	033	0.1	114	1039	623.4
St41	20050415	0528	23.44	119.50	57	24.6	21.8	1016.83	017	9.2	61	498	298.8
St42	20050415	0809	23.50	119.00	56	24.6	21.6	1017.90	030	8.2	50	341	204.6
St43	20050415	1101	24.00	119.00	63	24.4	20.4	1017.90	023	12.2	56	414	248.4
St44	20050415	1343	24.00	119.50	67	24.4	21.6	1015.59	015	10.1	62	350	210.0
St45	20050415	1633	24.00	120.00	45	25.6	23.8	1013.98	021	9.3	40	277	166.2
St46	20050415	1923	24.50	120.50	53	26.1	23.4	1015.41	040	10.3	52	348	208.8
St47	20050415	2303	24.50	120.01	63	25.2	22.7	1015.94	035	10.3	55	322	193.2
St48	20050416	0148	24.51	119.50	67	24.5	20.2	1015.23	020	14.5	64	447	268.2
St49	20050416	0624	25.00	120.00	56	23.4	19.6	1015.23	020	14.7	51	356	213.6
St50	20050416	0909	25.00	120.49	79	24.1	21.8	1016.12	028	12.2	79	544	326.4
St51	20050416	1135	25.09	120.91	79	24.9	22.9	1015.23	055	15.9	75	447	268.2
St52	20050416	1438	25.51	120.49	68	22.5	21.0	1016.12	070	13.5	65	458	274.8
St53	20050416	1833	26.00	121.00	82	24.3	22.2	1017.37	070	10.0	75	516	309.6
St54	20050416	2143	25.52	121.00	89	24.8	23.1	1017.54	072	10.0	85	554	332.4
St55	20050417	0043	25.50	121.50	121	25.4	23.2	1016.12	102	10.2	110	784	470.4
St56	20050417	0323	25.99	121.50	74	24.6	22.7	1015.76	100	7.2	68	483	289.8
St57	20050417	0602	26.00	122.00	104	24.9	22.9	1015.59	093	11.3	100	646	387.6
St58	20050417	0835	26.00	122.50	110	25.4	23.3	1017.54	110	7.8	104	647	388.2
St59	20050417	1000	26.00	123.00	98	26.3	23.8	1016.65	106	9.5	93	631	378.6
St60	20050417	1420	25.49	123.00	757	26.2	23.9	1015.05	118	10.0	200	1213	727.8
St61	20050417	1751	25.50	122.51	440	25.9	23.4	1015.05	123	6.2	200	1198	718.8
St62	20050417	2100	25.50	122.01	121	25.0	22.6	1015.76	130	4.2	117	990	594.0

表 04. 2005-07-05 航次基礎觀測資料
Chart 04. Basic observation data in Jul. 2005

Station	Date	SM T	Lati.	Long.	Depth	SST	AirT.	AirP.	W indD.	W indF.	O N D	Fl.Ct.	V M S.
St01	20050705	1334	24.86	122.00	368	29.0	27.9	1006.15	174	9.0	200	1287	772.2
St02	20050705	1635	25.00	122.50	1479	29.0	28.6	1005.62	191	7.9	200	1289	773.4
St03	20050705	1935	25.00	123.01	1623	29.6	28.9	1006.33	184	10.2	200	1485	891.0
St04	20050706	0204	24.51	122.52	589	29.9	28.7	1004.91	187	10.2	200	1492	895.2
St05	20050706	0604	24.50	122.01	1133	29.1	27.9	1005.80	203	8.7	200	1376	825.6
St06	20050706	1101	24.02	121.69	759	29.4	28.4	1006.33	208	5.3	200	1250	750.0
St07	20050706	1408	23.76	122.01	3103	30.7	29.3	1004.73	172	10.3	200	1673	1003.8
St08	20050706	1711	23.75	122.50	3051	30.5	29.3	1005.62	182	11.2	200	1439	863.4
St09	20050706	2016	23.75	123.00	3638	30.2	29.1	1007.40	177	10.0	200	1166	699.6
St10	20050707	0117	23.00	123.00	5213	30.7	29.0	1007.40	185	10.1	200	1550	930.0
St11	20050707	0425	22.99	122.48	5544	30.4	27.0	1006.33	162	8.9	200	1701	1020.6
St12	20050707	0741	23.00	122.00	4912	30.5	29.2	1006.51	195	9.2	200	1525	915.0
St13	20050707	1105	23.00	121.52	2075	31.0	29.4	1006.86	199	10.5	200	1484	890.4
St14	20050707	1712	22.67	121.26	1202	30.8	29.7	1007.04	196	11.7	200	988	592.8
St15	20050707	2332	22.24	121.00	1180	30.0	28.7	1009.89	211	5.4	200	1551	930.6
St16	20050708	0355	22.25	121.51	850	30.5	29.1	1008.02	203	7.1	200	4342	2605.2
St17	20050708	0817	22.24	122.00	4581	30.5	29.0	1009.71	184	6.9	200	738	442.8
St18	20050708	1243	22.24	122.50	4859	30.4	29.4	1008.47	180	8.5	200	1998	1198.8
St19	20050708	1652	22.25	123.00	3756	30.5	29.2	1008.40	179	8.6	200	1421	852.6
St20	20050708	2132	21.50	123.01	5070	30.1	29.1	1011.67	174	5.4	200	896	537.6
St21	20050709	0102	21.49	122.51	4792	30.1	28.9	1010.42	176	9.5	200	2240	1344.0
St22	20050709	0422	21.49	122.00	3470	30.3	28.9	1008.82	174	8.4	200	794	476.4
St23	20050709	0730	21.51	121.51	2046	30.6	30.5	1009.53	172	6.7	200	2399	1439.4
St24	20050709	1058	21.50	121.01	929	30.8	29.6	1010.07	204	4.8	200	1398	838.8
St25	20050709	1455	21.51	120.51	1860	31.2	30.4	1009.36	053	0.0	200	522	313.2
St26	20050709	1836	21.49	120.01	2939	31.1	29.4	1009.53	177	0.0	200	2987	1792.2
St27	20050709	2205	21.50	119.51	2977	30.7	29.3	1010.78	129	3.6	200	665	399.0
St28	20050710	0125	21.50	119.02	2813	30.4	29.2	1010.25	147	5.4	200	3940	2364.0
St29	20050710	0436	21.99	119.01	1554	30.2	28.9	1009.89	164	5.9	200	1626	975.6
St30	20050710	1335	22.00	119.50	2408	31.0	29.5	1010.25	151	5.0	200	1519	911.4
St31	20050710	1648	22.00	120.00	1151	31.0	29.7	1009.53	115	9.7	200	1524	914.4
St32	20050710	1952	22.00	120.51	576	30.8	29.5	1011.14	108	10.2	200	1768	1060.8
St33	20050710	2238	22.36	120.32	153	30.7	29.3	1010.78	142	6.0	200	1313	787.8
St34	20050711	0038	22.50	120.00	603	30.7	29.0	1010.07	155	7.2	200	1663	997.8
St35	20050710	1035	22.50	119.51	251	30.7	29.0	1010.42	162	4.8	200	1660	996.0
St36	20050710	0755	22.50	119.01	90	30.8	29.0	1010.07	122	76.0	85	709	425.4
St37	20050712	1705	22.94	119.10	34	30.8	28.1	1008.47	247	4.0	28	228	136.8
St38	20050712	1437	23.00	119.50	79	31.5	29.0	1009.00	280	4.2	70	734	440.4
St39	20050712	1210	23.00	119.92	130	31.1	29.4	1010.07	227	6.4	120	1159	695.4
St40	20050713	0130	23.50	119.91	116	30.1	28.8	1010.25	205	7.0	110	1033	619.8
St41	20050712	1112	23.43	119.49	53	28.8	27.4	1010.78	213	4.3	54	599	359.4
St42	20050712	2033	23.50	119.00	56	30.4	28.6	1009.53	200	6.3	50	415	249.0
St43	20050713	0923	24.00	119.00	62	29.6	28.4	1010.25	211	7.4	57	321	192.6
St44	20050713	0639	23.99	119.50	67	29.0	27.2	1010.25	195	4.3	62	491	294.6
St45	20050713	0355	24.00	119.99	46	30.1	28.0	1009.00	200	8.0	40	489	293.4
St46	20050713	1750	24.50	120.50	56	30.1	28.8	1008.82	225	5.8	56	342	205.2
St47	20050713	1525	24.50	120.01	66	30.0	28.9	1008.64	205	7.2	66	358	214.8
St48	20050713	1242	24.50	119.51	61	29.4	28.3	1009.53	193	7.0	58	404	242.4
St49	20050713	2137	25.00	120.00	54	29.3	27.4	1011.49	216	5.3	49	324	194.4
St50	20050713	2351	25.00	120.50	79	29.5	28.4	1011.14	206	6.9	75	571	342.6
St51	20050714	0214	25.09	120.92	84	29.7	28.3	1010.07	228	5.1	85	522	313.2
St52	20050714	0528	25.51	120.49	68	28.5	26.7	1010.25	205	5.8	62	564	338.4
St53	20050714	0850	26.00	121.01	83	29.5	27.8	1011.85	220	6.0	82	452	271.2
St54	20050714	1226	25.50	121.00	95	29.5	28.6	1012.03	246	4.5	91	624	374.4
St55	20050714	1513	25.50	121.50	123	30.7	29.7	1011.14	334	1.0	121	724	434.4
St56	20050714	1804	25.99	121.51	75	30.7	28.8	1011.14	137	2.6	68	655	393.0
St57	20050714	2025	26.00	122.00	106	30.4	28.6	1012.38	150	7.0	200	821	492.6
St58	20050714	2255	25.99	122.48	110	30.3	28.6	1013.09	159	5.0	200	882	529.2
St59	20050715	0148	26.00	123.00	99	30.0	28.6	1012.20	125	4.2	200	751	450.6
St60	20050715	0518	25.51	123.01	749	30.4	28.7	1011.67	115	4.5	200	1374	824.4
St61	20050715	0836	25.50	122.50	440	29.8	28.5	1012.20	126	4.2	200	1137	682.2
St62	20050715	1155	25.48	122.00	125	29.8	28.8	1020.00	107	4.4	120	699	419.4

表 05. 2005-10-06 航次基礎觀測資料
Chart 05. Basic observation data in Oct. 2005

Station	Date	SM T	Lat.	Long.	Depth	SST	AirT.	AirP.	WindD.	WindF.	OND	Fl.Ct.	V.M.S.
St01	20051006	1815	24.85	121.99	319	28.1	26.6	1011.14	349	2.8	200	3218	1930.8
St02	20051006	2127	25.01	122.51	1436	29.3	27.9	1011.85	062	6.5	200	1756	1053.6
St03	20051007	0043	25.00	123.00	1588	29.2	27.6	1010.78	067	6.4	200	1657	994.2
St04	20051007	0536	24.51	122.50	585	29.4	27.8	1009.71	063	6.5	200	1818	1090.8
St05	20051007	0902	24.52	122.01	848	28.9	25.8	1011.49	358	4.2	200	1769	1061.4
St06	20051007	1337	24.00	121.69	392	28.8	26.9	1009.53	045	7.2	200	1809	1085.4
St07	20051007	1623	23.76	121.98	3214	29.2	26.6	1009.18	344	4.0	200	1426	855.6
St08	20051007	1929	23.75	122.51	3075	29.5	25.6	1010.60	350	1.0	200	1295	777.0
St09	20051007	2230	23.76	123.01	3655	29.1	25.1	1010.42	322	2.4	200	2389	1433.4
St10	20051008	0325	23.00	123.00	5345	28.9	25.8	1009.53	018	2.1	200	2051	1230.6
St11	20051008	0637	23.01	122.51	5532	29.2	24.4	1010.78	066	12.0	200	2463	1477.8
St12	20051008	0948	23.00	122.00	4890	29.0	25.1	1012.20	045	5.4	200	1433	859.8
St13	20051008	1259	23.02	121.50	2023	28.9	26.4	1010.78	030	12.4	200	2077	1246.2
St14	20051008	1638	22.67	121.25	1143	29.6	27.1	1009.89	036	4.5	200	3363	2017.8
St15	20051008	2031	22.26	121.02	1207	29.1	27.4	1011.14	030	14.8	200	1412	847.2
St16	20051009	0132	22.26	121.50	708	28.7	23.4	1011.85	025	8.8	200	1745	1047.0
St17	20051009	0604	22.26	122.00	4594	29.6	27.7	1011.14	050	7.0	200	1930	1158.0
St18	20051009	1032	22.26	122.49	4838	29.9	28.1	1011.67	042	11.8	200	2248	1348.8
St19	20051009	1005	22.26	122.99	3546	30.0	28.0	1009.89	040	12.0	200	1759	1055.4
St20	20051009	2053	21.50	123.00	5024	29.9	28.1	1009.89	066	12.5	200	1757	1054.2
St21	20051009	2353	21.50	122.50	4789	30.0	28.0	1010.42	056	9.2	200	1579	947.4
St22	20051010	0252	21.51	122.01	3490	29.9	27.7	1009.36	052	10.0	200	1759	1055.4
St23	20051010	0614	21.51	121.50	2071	29.4	27.5	1010.42	038	12.8	200	1762	1057.2
St24	20051010	0938	21.50	121.01	926	29.4	27.2	1011.31	039	12.8	200	1769	1061.4
St25	20051010	1251	21.51	120.49	1818	29.9	28.0	1009.53	052	12.1	200	2318	1390.8
St26	20051010	1606	21.51	120.02	2964	29.8	28.1	1009.71	072	8.8	200	2688	1612.8
St27	20051010	1918	21.50	119.50	2983	29.6	27.5	1011.67	026	6.5	200	1953	1171.8
St28	20051010	2224	21.50	119.00	2810	29.4	25.7	1012.38	078	6.4	200	1447	868.2
St25	20051011	0208	22.00	119.00	1581	29.2	26.6	1010.60	005	7.6	200	2026	1215.6
St26	20051011	0526	21.99	119.50	2365	29.1	24.9	1011.31	048	7.3	200	1109	665.4
St27	20051011	0848	22.00	120.00	1146	29.7	27.9	1012.03	072	1.4	200	2752	1651.2
St28	20051011	1153	22.00	120.47	662	30.2	28.6	1010.60	032	3.3	200	2682	1609.2
St33	20051011	1438	22.40	120.30	111	30.3	28.1	1009.53	279	3.1	119	1537	922.2
St34	20051012	1150	22.49	120.00	570	29.7	27.8	1009.89	315	2.4	200	2854	1712.4
St35	20051012	1450	22.51	119.51	241	29.7	26.9	1008.29	010	8.6	200	1615	969.0
St36	20051012	1737	22.50	119.01	86	28.9	25.9	1009.00	013	10.8	80	726	435.6
St37	20051012	2033	22.93	119.10	28	28.7	25.9	1010.78	030	9.6	26	117	70.2
St38	20051012	2251	23.00	119.50	74	28.9	26.5	1010.25	016	9.8	70	539	323.4
St39	20051013	0122	23.01	119.91	129	29.0	26.9	1009.53	011	3.6	125	1303	781.8
St40	20051013	0401	23.50	119.92	113	28.8	25.5	1008.82	023	5.7	100	833	499.8
St41	20051013	0620	23.43	119.50	50	28.6	25.9	1009.71	025	9.8	50	715	429.0
St42	20051013	0855	23.50	119.01	54	28.1	25.3	1011.31	022	10.2	45	384	230.4
St43	20051013	1208	23.99	119.00	57	27.7	25.2	1010.78	035	10.4	50	471	282.6
St44	20051013	1455	24.00	119.50	59	27.8	25.5	1009.18	020	11.2	50	343	205.8
St45	20051013	1741	24.00	119.99	41	28.0	25.8	1008.47	026	10.7	35	310	186.0
St46	20051021	0233	24.50	120.50	52	26.6	24.5	1011.31	038	13.5	47	384	230.4
St47	20051020	2335	24.51	119.99	60	26.6	24.8	1013.27	028	15.0	56	469	281.4
St48	20051020	2035	24.50	119.50	55	27.4	24.7	1009.18	032	14.8	50	1010	606.0
St49	20051020	1654	25.00	120.00	50	27.1	24.2	1013.90	037	14.1	45	480	288.0
St50	20051021	0531	24.98	120.50	73	26.9	24.9	1013.98	034	10.5	68	300	180.0
St51	-	-	-	-	-	-	-	-	-	-	-	-	-
St52	20051020	1300	25.50	120.51	67	27.1	23.8	1014.70	015	13.4	62	358	214.8
St53	20051020	0924	26.00	121.00	81	26.7	23.3	1011.72	036	12.3	75	447	268.2
St54	20051021	0935	25.49	120.99	91	27.1	24.7	1016.65	027	10.2	85	708	424.8
St55	20051021	1245	25.50	121.49	116	26.6	24.2	1015.05	027	10.3	107	1319	791.4
St56	20051020	0705	26.00	121.50	69	26.8	24.7	1017.19	042	10.1	63	549	329.4
St57	20051020	0429	26.00	122.00	98	26.5	24.3	1015.76	052	9.6	90	1178	706.8
St58	20051020	0130	26.00	122.51	103	28.0	24.9	1016.12	051	13.2	95	1575	945.0
St59	20051019	2232	26.00	123.01	96	28.2	25.6	1017.01	048	9.6	95	1036	621.6
St60	20051019	1920	25.50	123.00	762	27.9	25.4	1016.30	055	12.8	200	1563	937.8
St61	20051019	1601	25.51	122.50	368	27.2	24.9	1015.94	028	13.1	200	2242	1345.2
St62	20051019	1232	25.50	121.99	116	25.1	23.2	1017.01	025	9.6	110	974	584.4

表 06. 2006-01-03 航次基礎觀測資料
Chart 06. Basic observation data in Jan. 2006

Station	Date	SM T	Lati.	Long.	Depth	SST	AirT.	AirP.	W indD.	W indF.	O N D	Fl.Ct.	V M S.
St01	20060103	1630	24.86	122.01	385	22.1	20.3	1015.23	159	3.4	200	1590	954.0
St02	20060103	1953	25.01	122.51	1460	23.7	20.3	1015.94	101	6.3	200	1896	1137.6
St03	20060103	2310	25.01	123.00	1606	20.5	23.9	1014.70	131	7.6	200	1851	1110.6
St04	20060104	0338	24.50	122.51	640	19.9	24.3	1013.98	238	5.0	200	1978	1186.8
St05	20060104	0651	24.50	122.01	1065	24.3	19.3	1014.87	223	2.4	200	2095	1257.0
St06	20060104	1102	24.00	121.68	474	25.0	21.1	1013.98	190	2.0	200	2430	1458.0
St07	20060104	1350	23.76	122.00	3424	25.4	21.5	1011.49	150	2.0	200	1815	1089.0
St08	20060104	1706	23.75	122.50	3053	25.4	21.2	1012.20	115	3.2	200	1366	819.6
St09	20060104	2043	23.75	123.00	3644	25.2	22.3	1012.92	138	3.7	200	1896	1137.6
St10	20060105	0104	23.00	123.01	5530	24.8	20.7	1013.09	099	4.6	200	2072	1243.2
St11	20060105	0424	23.01	122.50	5534	25.0	20.5	1013.63	354	3.8	200	1310	786.0
St12	20060105	0734	23.00	122.01	4895	25.4	21.4	1014.52	006	13.8	200	1365	819.0
St13	20060105	1043	23.00	121.51	2059	24.5	20.0	1016.30	025	16.4	200	1739	1043.4
St14	20060105	1347	22.68	121.25	1113	24.6	19.0	1013.98	024	15.5	200	1643	985.8
St15	20060105	1705	22.25	121.00	1208	24.8	19.9	1015.41	030	20.0	200	1726	1035.6
St16	20060106	1224	22.26	121.51	490	24.5	19.8	1016.00	027	17.0	200	1620	972.0
St17	20060106	1534	22.26	121.99	4576	24.0	16.8	1017.00	013	12.1	200	1895	1137.0
St18	20060106	1935	22.26	122.51	4847	23.6	16.5	1016.00	026	15.5	200	3151	1890.6
St19	20060106	2300	22.26	123.00	3618	23.5	16.3	1018.43	035	14.5	200	1425	855.0
St20	20060107	0342	21.51	123.00	5036	24.4	17.9	1017.01	024	15.1	200	1781	1068.6
St21	20060107	0757	21.51	122.51	4777	23.9	18.6	1018.00	033	15.2	200	1667	1000.2
St22	20060107	1025	21.51	122.00	3484	24.1	18.5	1019.00	030	12.2	200	1421	852.6
St23	20060107	1340	21.51	121.50	2064	24.2	18.6	1017.00	024	13.5	200	1320	792.0
St24	20060107	1651	21.51	121.01	962	24.4	18.9	1017.00	042	12.2	200	1486	891.6
St25	20060107	2006	21.51	120.51	1859	24.4	18.9	1017.00	042	15.1	200	1790	1074.0
St26	20060107	2321	21.51	120.01	2957	23.8	18.2	1017.00	112	8.9	200	1641	984.6
St27	20060108	0218	21.50	119.50	2990	23.6	17.5	1019.00	012	11.3	200	1265	759.0
St28	20060108	0524	21.50	119.00	2800	23.6	17.7	1018.00	012	9.3	200	1532	919.2
St29	20060108	0907	22.00	119.00	1460	23.9	17.6	1021.00	017	6.3	200	1432	859.2
St30	20060108	1236	22.01	119.50	2402	23.6	17.6	1018.00	350	7.6	200	1428	856.8
St31	20060108	1542	22.00	119.99	1081	23.5	17.8	1017.00	022	5.8	200	1820	1092.0
St32	20060108	1845	21.99	120.50	279	23.5	17.8	1017.00	000	6.6	200	1795	1077.0
St33	20060108	2128	22.36	120.31	258	23.5	17.8	1017.00	001	6.1	200	1759	1055.4
St34	20060108	2330	22.50	120.00	627	22.9	17.4	1017.00	020	9.2	200	2336	1401.6
St35	20060109	0220	22.50	119.50	239	22.2	16.6	1018.00	006	10.8	200	1346	807.6
St36	20060109	0515	22.50	119.00	86	22.6	16.4	1017.00	020	12.2	81	538	322.8
St37	20060109	0801	22.93	119.10	27	20.9	15.2	1018.00	030	13.8	17	125	75.0
St38	20060109	1020	23.00	119.49	78	21.3	16.7	1017.00	026	12.3	70	516	309.6
St39	20060109	1251	23.02	119.91	125	22.2	17.5	1016.00	010	13.5	115	1030	618.0
St40	20060109	1541	23.51	119.92	96	20.9	15.9	1015.00	014	16.3	109	682	409.2
St41	20060109	1857	23.43	119.49	47	20.0	15.9	1015.00	034	12.3	43	488	292.8
St42	20060109	2020	23.50	119.02	52	19.8	16.0	1018.00	028	14.2	50	290	174.0
St43	20060109	2355	23.99	119.00	57	18.7	14.3	1018.00	033	18.7	50	535	321.0
St44	20060110	0310	24.02	119.48	61	18.4	15.6	1017.00	016	17.3	55	399	239.4
St45	20060110	0635	24.00	120.00	42	18.4	16.1	1016.00	030	19.7	43	266	159.6
St46	20060110	1123	24.50	120.49	50	19.4	17.1	1016.00	018	12.2	50	328	196.8
St47	20060110	1355	24.50	120.00	59	18.6	15.9	1014.00	014	11.3	50	367	220.2
St48	20060110	1620	24.51	119.52	52	17.1	12.8	1015.00	022	16.3	45	331	198.6
St49	20060110	2041	25.00	120.00	54	17.1	13.0	1015.00	071	13.4	50	466	279.6
St50	20060110	2316	25.01	120.49	80	17.1	13.0	1015.00	030	13.5	75	505	303.0
St51	20060111	0125	25.09	120.91	74	19.5	18.2	1014.00	041	11.2	70	414	248.4
St52	20060111	0435	25.49	120.50	64	18.7	14.7	1015.00	070	16.2	55	427	256.2
St53	20060111	0924	26.00	121.00	81	20.0	16.9	1018.00	030	7.8	50	495	297.0
St54	20060111	1220	25.50	121.02	97	20.0	18.6	1015.00	080	10.2	97	765	459.0
St55	20060111	1455	25.50	121.50	116	20.5	18.4	1013.00	115	16.7	110	931	558.6
St56	20060111	1744	26.00	121.50	70	20.7	19.3	1016.00	096	10.6	60	371	222.6
St57	20060111	2038	26.00	121.99	102	23.2	22.5	1017.00	110	14.5	95	593	355.8
St58	20060111	2315	26.00	122.50	104	24.3	22.3	1017.00	116	13.0	100	581	348.6
St59	20060112	0200	26.00	123.00	94	24.0	21.7	1016.00	114	14.5	89	643	385.8
St60	20060112	0514	25.51	123.01	755	23.7	21.5	1015.00	090	15.8	200	1436	861.6
St61	20060112	0820	25.50	122.51	452	23.4	21.4	1014.00	100	14.4	200	1355	813.0
St62	20060112	1124	25.51	122.00	117	23.5	21.5	1012.00	070	8.1	110	800	480.0

表 07. 2006-05-04 航次基礎觀測資料
Chart 07. Basic observation data in May 2006

Station	Date	SM T	Lati.	Long.	Depth	SST	AirT.	AirP.	W indD.	W indF.	O N D	Fl.Ct.	V M S.
St01	20060504	1601	24.86	122.00	346	26.9	24.5	1013.27	235	4.3	200	1507	904.2
St02	20060504	1838	24.99	122.51	1478	28.4	26.1	1013.45	152	8.9	200	1590	954.0
St03	20060504	2129	24.99	123.00	1672	28.5	26.0	1014.52	166	8.3	200	1553	931.8
St04	20060505	0251	24.50	122.51	598	28.5	25.5	1012.56	158	8.5	200	1241	744.6
St05	20060505	0647	24.50	122.00	1039	28.4	25.5	1013.27	218	4.4	155	910	546.0
St06	20060505	1047	24.02	121.70	952	28.3	26.0	1013.63	179	7.0	200	1383	829.8
St07	20060505	1345	23.75	122.00	3432	29.2	26.6	1011.85	164	7.4	200	1916	1149.6
St08	20060505	1655	23.75	122.50	3057	28.8	25.9	1010.67	184	6.0	200	1198	718.8
St09	20060505	1952	23.75	123.00	3635	28.9	26.5	1012.56	180	6.3	200	1606	963.6
St10	20060506	0100	23.01	123.01	5875	28.2	25.4	1010.78	130	5.2	200	1277	766.2
St11	20060506	0424	23.00	122.49	5531	27.8	25.6	1009.71	145	1.7	200	1465	879.0
St12	20060506	0730	23.01	122.01	4893	29.0	26.4	1010.20	150	7.6	200	1470	882.0
St13	20060506	1108	23.00	121.53	2190	29.7	28.2	1009.18	196	10.1	200	1333	799.8
St14	20060506	1509	22.69	121.28	1241	30.0	28.6	1004.55	200	13.5	200	1806	1083.6
St15	20060506	1935	22.25	121.00	1208	30.0	28.8	1005.15	228	13.2	200	1215	729.0
St16	20060506	2354	22.26	121.50	601	30.0	28.1	1007.75	248	8.7	200	1519	911.4
St17	20060507	1011	22.24	121.99	3208	30.3	28.6	1008.82	250	9.0	200	1531	918.6
St18	20060507	1427	22.25	122.49	4846	29.3	27.8	1006.86	239	8.3	200	1402	841.2
St19	20060507	1857	22.25	123.00	3612	26.5	28.0	1008.64	283	4.2	200	1004	602.4
St20	20060507	0000	21.50	123.00	4992	26.8	28.1	1009.00	331	0.0	200	1272	763.2
St21	20060508	0323	21.50	122.50	4785	29.0	26.9	1008.29	323	3.0	200	1461	876.6
St22	20060508	0617	21.51	121.99	3470	29.5	27.4	1010.25	331	3.6	200	1499	899.4
St23	20060508	0915	21.52	121.49	2075	29.8	27.7	1011.31	297	4.1	200	1300	780.0
St24	20060508	1211	21.50	121.01	926	30.3	29.2	1010.20	012	2.0	200	1352	811.2
St25	20060508	1518	21.50	120.49	1739	30.7	28.9	1009.18	285	4.6	200	2298	1378.8
St26	20060508	1835	21.50	120.00	2952	30.5	28.1	1009.71	291	9.8	200	1250	750.0
St27	20060508	2144	21.49	119.50	2974	30.0	27.6	1010.78	019	1.7	200	1696	1017.6
St28	20060509	0050	21.49	119.01	2822	30.0	27.4	1009.71	008	1.0	200	1173	703.8
St29	20060509	0418	22.00	119.01	1600	29.7	27.2	1009.00	008	4.2	200	1584	950.4
St30	20060509	0715	21.99	119.50	2266	29.8	27.7	1010.07	099	6.2	200	1453	871.8
St31	20060509	1019	22.00	119.99	1105	29.2	28.0	1010.42	310	4.1	200	1563	937.8
St32	20060509	1342	22.00	120.50	283	29.9	28.0	1008.29	314	5.7	200	1093	655.8
St33	20060509	1618	22.37	120.33	182	29.4	28.2	1007.22	290	5.0	142	860	516.0
St34	20060509	1821	22.50	120.00	574	30.0	27.9	1007.58	288	6.0	200	1323	793.8
St35	20060509	2113	22.50	119.50	235	30.2	28.1	1009.53	268	3.0	200	1447	868.2
St36	20060509	0000	22.50	119.00	87	29.9	28.1	1008.82	214	4.5	81	518	310.8
St37	20060510	0250	22.96	119.12	25	27.5	25.8	1007.58	193	2.6	20	234	140.4
St38	20060510	0450	23.00	119.50	73	29.6	27.6	1007.93	133	3.8	68	543	325.8
St39	20060510	0703	23.00	119.92	124	29.8	28.3	1009.36	213	1.7	124	806	483.6
St40	20060510	0927	23.50	119.92	114	29.4	28.2	1010.60	254	3.7	115	889	533.4
St41	20060510	1146	23.43	119.50	60	27.8	26.7	1009.53	225	3.6	50	365	219.0
St42	20060510	1430	23.50	119.01	51	27.8	26.8	1007.75	245	8.3	45	391	234.6
St43	20060510	1710	24.01	119.00	50	27.6	27.5	1006.86	180	4.8	51	450	270.0
St44	20060510	1933	24.00	119.50	62	28.4	28.4	1009.18	214	2.8	61	347	208.2
St45	20060510	2208	24.00	119.99	42	28.9	27.1	1044.49	043	4.0	35	216	129.6
St46	20060511	0142	24.50	120.50	51	28.9	26.7	1011.78	026	11.0	47	497	298.2
St47	20060511	0421	24.50	120.00	58	28.2	24.8	1011.49	037	12.4	56	368	220.8
St48	20060511	0656	24.51	119.50	59	27.1	23.1	1013.09	027	13.4	58	386	231.6
St49	20060511	1210	24.99	119.99	52	25.7	21.8	1014.70	030	14.1	45	267	160.2
St50	20060511	1505	25.00	120.49	74	26.0	23.4	1012.03	047	17.2	68	446	267.6
St51	20060511	1740	25.08	120.92	70	27.0	23.4	1012.20	040	14.0	60	414	248.4
St52	20060511	2045	25.50	120.50	64	25.6	22.5	1015.41	032	9.0	64	606	363.6
St53	20060512	0052	26.00	121.00	79	25.9	22.0	1014.34	043	10.2	75	441	264.6
St54	20060512	0346	25.50	120.99	90	26.1	22.3	1013.45	069	7.3	85	898	538.8
St55	20060512	0647	25.50	121.49	115	27.1	23.6	1013.63	060	9.1	110	651	390.6
St56	20060512	0938	25.99	121.50	70	26.7	22.3	1014.16	051	7.5	68	369	221.4
St57	20060512	1207	26.00	121.99	100	26.8	23.4	1012.03	066	13.6	100	654	392.4
St58	20060512	1435	26.00	122.50	104	27.1	24.7	1011.49	073	13.0	100	666	399.6
St59	20060512	1704	26.00	123.00	96	28.5	25.9	1010.96	077	6.7	95	747	448.2
St60	20060512	2027	25.51	122.99	777	29.2	27.1	1012.74	132	5.3	200	1697	1018.2
St61	20060512	2312	25.50	122.49	446	29.2	27.1	1012.38	209	5.9	200	1408	844.8
St62	20060513	0221	25.49	122.01	110	27.9	25.4	1010.07	131	7.0	120	892	535.2

表 08. 2006-07-18 航次基礎觀測資料
Chart 08. Basic observation data in Jul. 2006

Station	Date	SM T	Lati.	Long.	Depth	SST	AirT.	AirP.	W indD.	W indF.	O N D	Fl.Ct.	V M S.
St01	20060718	1916	24.87	122.01	400	29.0	27.7	1008.82	173	6.9	200	1476	885.6
St02	20060718	2222	25.00	122.50	1453	28.9	27.4	1009.53	174	5.5	200	1285	771.0
St03	20060719	0145	25.00	122.99	1605	28.8	27.0	1007.58	152	9.1	200	1292	775.2
St04	20060719	0717	24.50	122.50	614	29.2	27.7	1008.11	182	4.7	200	1237	742.2
St05	20060719	1106	24.50	122.02	1133	29.2	28.0	1007.58	190	5.5	200	1113	667.8
St06	20060719	1625	24.01	121.69	757	29.8	28.4	1005.44	189	11.1	200	1624	974.4
St07	20060719	1925	23.75	122.00	3214	30.3	28.4	1006.86	187	6.0	200	1230	738.0
St08	20060719	2243	23.74	122.50	3082	29.5	27.5	1007.22	158	4.5	200	1073	643.8
St09	20060720	0212	23.75	123.00	3636	29.1	27.2	1006.15	166	4.2	200	1316	789.6
St10	20060720	0654	23.00	123.01	5483	28.3	27.3	1006.86	129	4.5	200	1399	839.4
St11	20060720	1023	22.98	122.49	5544	29.9	28.6	1007.22	161	3.3	200	1098	658.8
St12	20060720	1338	23.00	122.01	4926	30.6	29.0	1005.44	128	3.1	200	1707	1024.2
St13	20060720	1716	23.00	121.54	2182	30.7	28.9	1004.19	232	5.0	200	1101	660.6
St14	20060720	2101	22.67	121.26	1165	30.6	28.4	1007.22	099	0.1	200	1582	949.2
St15	20060721	0130	22.25	121.00	1190	30.2	27.8	1004.73	333	3.6	200	1309	785.4
St16	20060721	0438	22.25	121.49	547	30.3	27.6	1004.73	230	0.1	200	1330	798.0
St17	20060721	0749	22.25	121.99	4576	30.3	28.7	1005.26	128	3.1	200	1128	676.8
St18	20060721	1050	22.26	122.51	4843	30.7	27.0	1006.33	342	7.0	200	1329	797.4
St19	20060721	1347	22.25	123.01	3896	31.1	29.2	1004.73	131	3.7	200	1378	826.8
St20	20060721	1846	21.50	123.00	4991	30.6	29.3	1004.73	125	6.1	200	1425	855.0
St21	20060721	2208	21.50	122.57	4774	30.4	28.9	1006.86	205	4.0	200	1715	1029.0
St22	20060722	0109	21.49	122.01	3476	30.4	28.6	1005.26	152	4.1	200	1671	1002.6
St23	20060722	0430	21.50	121.51	2082	30.4	28.5	1004.55	128	4.5	200	1453	871.8
St24	20060722	0825	21.49	121.02	942	30.7	29.2	1005.62	120	1.7	200	1316	789.6
St25	20060722	1206	21.50	120.51	1862	31.3	29.4	1004.37	207	2.0	200	1125	675.0
St26	20060722	1542	21.50	120.00	2932	32.0	29.7	1003.13	250	2.2	200	1160	696.0
St27	20060722	1902	21.50	119.50	2981	31.9	29.3	1003.84	183	1.7	200	1193	715.8
St28	20060722	2212	21.49	119.01	2824	31.1	29.1	1005.26	159	3.0	200	1215	729.0
St29	20060723	0134	21.98	119.00	1616	31.3	28.8	1003.66	357	2.8	200	1371	822.6
St30	20060723	0430	22.00	119.51	2434	30.9	28.5	1002.77	112	2.0	200	561	336.6
St31	-	-	-	-	-	-	-	-	-	-	-	-	-
St32	-	-	-	-	-	-	-	-	-	-	-	-	-
St33	20060807	1603	22.37	120.28	144	30.5	28.4	999.92	320	8.0	145	864	518.4
St34	20060807	0639	22.50	120.00	630	29.5	27.5	1002.77	331	5.5	200	1342	805.2
St35	20060807	0348	22.51	119.50	232	29.4	27.2	1003.13	355	5.0	200	1249	749.4
St36	20060807	0115	22.50	119.00	86	29.4	27.2	1004.02	348	3.8	84	599	359.4
St37	20060806	2246	22.84	119.10	29	28.7	26.4	1005.26	000	0.0	25	185	111.0
St38	20060806	1158	23.00	119.50	72	30.1	27.5	1006.51	320	4.0	70	456	273.6
St39	20060806	0930	23.00	119.91	126	30.1	27.9	1005.97	334	3.3	125	890	534.0
St40	20060806	0617	23.51	119.92	110	29.6	27.5	1005.44	325	4.8	105	853	511.8
St41	20060806	0358	23.44	119.49	51	28.5	26.3	1005.08	320	3.8	40	263	157.8
St42	20060806	0116	23.50	119.00	51	29.1	27.0	1006.51	108	0.1	46	422	253.2
St43	20060805	2229	24.00	119.00	60	29.0	27.0	1007.40	036	4.2	57	445	267.0
St44	20060805	1949	24.00	119.51	64	29.6	27.4	1007.40	065	3.4	58	358	214.8
St45	20060805	1708	24.01	120.00	37	30.6	27.9	1005.62	020	8.3	35	264	158.4
St46	20060805	1256	24.50	120.50	49	29.5	28.1	1007.22	356	4.2	40	378	226.8
St47	20060805	1032	24.50	120.01	60	29.1	27.5	1008.64	358	5.7	58	430	258.0
St48	20060805	0757	24.50	119.51	63	29.9	27.2	1005.47	002	4.2	61	377	226.2
St49	20060805	0400	25.01	120.00	52	28.7	27.0	1005.04	340	48.0	40	381	228.6
St50	20060805	0124	25.00	120.50	75	29.3	27.2	1008.82	327	4.2	70	572	343.2
St51	20060804	2254	25.09	120.92	73	29.6	27.3	1009.53	298	2.8	65	728	436.8
St52	20060804	1937	25.50	120.50	65	29.8	27.2	1009.36	140	0.1	60	481	288.6
St53	20060804	1553	26.00	121.00	80	29.9	28.0	1007.58	096	5.6	75	655	393.0
St54	20060804	1309	25.51	121.00	88	29.8	28.0	1008.11	013	2.6	90	769	461.4
St55	20060717	1825	25.51	121.52	119	31.1	29.6	1008.64	196	3.7	111	852	511.2
St56	20060717	2125	26.00	121.52	69	30.2	28.5	1009.53	180	4.3	61	577	346.2
St57	20060718	0005	26.00	121.99	101	28.8	26.7	1009.00	182	5.9	90	605	363.0
St58	20060718	0305	26.01	122.51	105	27.8	26.3	1007.93	177	5.7	90	734	440.4
St59	20060718	0537	26.00	123.01	94	29.0	27.4	1008.47	186	6.7	94	644	386.4
St60	20060718	0854	25.51	123.01	743	28.8	27.7	1009.53	191	5.6	200	1493	895.8
St61	20060718	1222	25.50	122.50	414	27.3	27.1	1009.18	204	4.2	200	561	336.6
St62	20060718	1505	25.50	122.01	114	26.7	27.2	1008.47	175	5.3	100	740	444.0

表 09. 2006-10-12 航次基礎觀測資料
Chart 09. Basic observation data in Oct. 2006

Station	Date	SM T	Lat.	Long.	Depth	SST	AirT.	AirP.	W indD.	W indF.	O N D	Fl.Ct.	V M S.
S101	20061021	0630	24.88	122.00	346	24.6	24.5	1013.00	040	3.8	200	1297	778.2
S102	20061021	0226	25.01	122.51	1452	27.8	24.7	1015.00	058	6.6	200	1484	890.4
S103	20061020	2235	25.00	123.00	1670	28.4	25.0	1014.00	042	12.5	200	1540	924.0
S104	20061020	1802	24.51	122.50	603	28.4	25.5	1014.00	048	10.7	200	1579	947.4
S105	20061020	1324	24.51	122.00	815	27.9	31.0	1014.00	024	6.0	200	1466	879.6
S106	20061020	0915	23.99	121.72	1120	27.3	26.2	1016.00	007	5.0	200	1604	962.4
S107	20061020	0627	23.76	122.01	3524	28.8	25.2	1015.00	040	5.4	200	1497	898.2
S108	20061020	0245	23.76	122.51	3183	28.2	25.0	1014.00	067	5.5	200	1752	1051.2
S109	20061019	2306	23.75	123.01	3642	27.9	26.1	1015.00	065	7.1	200	1816	1089.6
S110	20061019	1755	23.01	123.00	5151	29.1	26.2	1013.00	006	9.0	200	1611	966.6
S111	20061019	1404	23.01	122.50	5501	29.1	25.9	1013.00	052	6.4	200	1553	931.8
S112	20061019	1018	23.01	122.00	4855	28.9	26.3	1014.00	021	7.3	200	1666	999.6
S113	20061019	0640	23.01	121.50	1981	28.9	26.1	1015.00	018	7.3	200	1478	886.8
S114	20061019	0233	22.68	121.25	1067	28.2	24.2	1012.00	020	6.4	200	1760	1056.0
S115	20061018	2255	22.26	121.01	1208	29.0	26.0	1015.00	012	9.5	200	1701	1020.6
S116	20061018	1907	22.25	121.51	828	28.8	26.3	1014.00	036	9.1	200	1682	1009.2
S117	20061018	1550	22.26	122.01	4576	27.5	26.2	1013.00	007	7.4	200	1550	930.0
S118	20061018	1229	22.26	122.50	4842	28.9	26.2	1013.00	002	8.1	200	1579	947.4
S119	20061018	0915	22.25	123.00	3374	29.0	28.0	1015.00	002	7.2	200	1541	924.6
S120	20061018	0437	21.50	123.00	5007	28.7	24.3	1013.00	026	6.2	200	2206	1323.6
S121	20061018	0101	21.51	122.49	4789	27.9	25.1	1014.00	052	4.7	200	1076	645.6
S122	20061017	2123	21.50	122.00	3463	27.6	25.0	1012.00	066	7.0	200	1357	814.2
S123	20061017	1730	21.50	121.49	2177	29.3	26.5	1012.00	063	6.9	200	1673	1003.8
S124	20061017	1341	21.51	121.00	1111	29.5	29.2	1012.00	053	7.6	200	1803	1081.8
S125	20061017	1044	21.51	120.51	1789	28.5	27.6	1014.00	007	7.6	200	1492	895.2
S126	20061017	0726	21.51	120.00	2968	28.2	26.0	1014.00	008	7.4	200	1295	777.0
S127	20061017	0404	21.50	119.50	2994	29.5	26.5	1013.00	102	5.0	200	1799	1079.4
S128	20061017	0047	21.50	119.01	2796	27.7	25.0	1011.00	010	7.9	200	1334	800.4
S129	20061016	2106	22.00	120.27	1602	27.8	25.8	1010.00	014	2.6	200	1938	1162.8
S130	20061016	1755	21.99	119.50	2396	29.3	26.2	1013.00	290	6.0	200	1597	958.2
S131	20061016	1448	21.99	120.00	1140	29.6	27.3	1012.00	177	4.0	200	1500	900.0
S132	20061016	1154	22.01	120.51	327	29.8	27.8	1013.00	009	4.0	200	1619	971.4
S133	20061016	0851	22.37	120.33	144	29.3	27.0	1014.00	045	2.2	142	1040	624.0
S134	20061016	0630	22.50	119.99	643	29.3	26.0	1013.00	285	2.4	200	1939	1163.4
S135	20061016	0330	22.50	119.50	240	29.1	26.3	1012.00	284	4.2	200	1602	961.2
S136	20061015	0035	22.51	119.00	85	28.6	26.4	1012.00	018	6.5	80	598	358.8
S137	20061015	2153	22.94	119.10	26	27.5	24.9	1013.00	049	6.5	20	79	47.4
S138	20061015	1452	23.00	119.50	73	28.2	26.0	1010.00	010	9.6	68	492	295.2
S139	20061015	1238	23.01	119.92	122	29.2	27.2	1011.00	010	5.4	118	826	495.6
S140	20061015	0941	23.50	119.92	110	28.1	26.1	1012.00	027	9.4	115	758	454.8
S141	20061015	0718	23.43	119.50	49	27.5	25.0	1012.00	029	8.0	40	288	172.8
S142	20061015	0438	23.50	119.00	53	27.7	25.0	1011.00	034	8.1	49	361	216.6
S143	20061015	0136	24.00	119.00	58	27.5	25.1	1011.00	036	9.0	53	467	280.2
S144	20061014	2256	24.00	119.51	63	28.0	25.8	1102.00	032	10.6	58	473	283.8
S145	20061014	2030	24.00	120.00	40	28.2	25.6	1010.00	040	10.5	30	210	126.0
S146	20061014	1654	24.50	120.49	53	27.5	28.0	1010.00	020	10.4	45	366	219.6
S147	20061014	1414	24.50	120.00	60	27.5	25.7	1010.00	026	10.9	55	445	267.0
S148	20061014	1137	24.50	119.50	62	28.5	26.2	1013.00	029	9.5	57	325	195.0
S149	20061014	0732	25.00	120.00	50	26.9	24.8	1013.00	003	9.0	47	415	249.0
S150	20061014	0449	25.01	120.51	77	27.1	24.4	1012.00	005	8.6	70	500	300.0
S151	20061014	0231	25.09	120.92	79	27.0	25.0	1011.00	044	8.4	70	532	319.2
S152	20061013	2311	25.50	120.50	63	27.7	25.2	1014.00	050	7.4	57	411	246.6
S153	20061013	1923	26.00	121.01	79	27.3	25.3	1014.00	043	9.4	73	457	274.2
S154	20061013	1622	25.50	121.00	91	27.5	25.5	1013.00	006	9.6	85	685	411.0
S155	20061013	1357	25.51	121.49	114	27.9	25.5	1013.00	003	6.4	110	952	571.2
S156	20061013	1100	26.00	121.50	67	27.3	25.1	1016.00	029	7.5	60	460	276.0
S157	20061013	0829	26.00	122.00	99	27.1	25.3	1016.00	005	7.6	94	865	519.0
S158	20061013	0549	26.02	122.50	102	27.9	24.0	1015.00	004	5.8	97	751	450.6
S159	20061013	0244	25.50	123.00	94	28.2	25.4	1015.00	004	7.4	80	586	351.6
S160	20061012	2337	25.50	122.99	772	28.0	25.0	1015.00	032	9.0	200	1773	1063.8
S161	20061012	2040	25.51	122.50	338	27.7	25.0	1016.00	030	7.8	200	1825	1095.0
S162	20061012	1715	25.50	122.00	117	27.3	26.3	1015.00	043	6.5	117	376	225.6

2003-2006 年台灣周邊海域漁場環境監測航次報告

發行所：行政院農業委員會水產試驗所

發行人：蘇偉成

編輯顧問：蘇茂森

總編輯：劉燈城

編輯委員：吳繼倫、陳世欽、鄭學淵

地址：基隆市中正區 20246 和一路 199 號

電話：(02)24622101

傳真：(02)24629388

網址：<http://www.tfrin.gov.tw>

信箱：service@mail.tfrin.gov.tw

執行單位：海洋漁業組

編輯：陳郁凱、蘇博堃、張伯瑋

設計印刷：新視界國際文化(股)公司

電話：(07)3456131

定價：新台幣 200 元

出版日期：九十九年十二月

展售處：

1.五南文化廣場台中總店 台中市中山路 6 號 (04)22260330

2.國家書店 台北市松江路 209 號 1 樓 (02)25180207

<http://www.govbooks.com.tw>

ISBN : 978-986-02-5969-8

GPN : 1009904751

本書刊登本所同仁研究成果，非經本所同意，不得重製、數位化或轉載。



ISBN 978-986025969-8

定價:200



9 789860 259698 04751