

**Status of WP4:
Review of ocean and coastal
information products and
services**

**National Marine Environmental
Forecasting Center**

Sep 18, 2008

Outlines

- Review of the annual report
- Short-term, medium range and long-term forecast
- Cases of emergency forecast and pre-warning

Review of Annual report

- Brief introduction of ocean forecast and services in China
- Major operational forecast organizations and products
- Contribution by research institutes and universities
- Introduction of ocean forecast and services in Europe

SOA and CMA

- State Ocean Administration of China (SOA) is responsible for the marine environment forecasting and information products and services
- China Meteorological Agency (CMA) provides marine weather forecast services.

SOA

China Marine Surveillance Headquarters (Beijing)
Northern Seas Branch (Qingdao)
East China Sea Branch (Shanghai)
South China Sea Branch (Guangzhou)
National Marine Data and Information Service (Tianjin)
National Marine Environmental Monitoring Center (Dalian)
National Marine Environmental Forecasting Center (Beijing)
National Satellite Ocean Application Services (Beijing)
Institute of Ocean Technology (Tianjin)
National Center of Oceanographic Standards & Metrology (Tianjin)
Polar Research Institute of China (Shanghai)
Hangzhou Research and Development Center for Water Treatment
Technologies (Hangzhou)
First Institute of Oceanography (Qingdao)
Second Institute of Oceanography (Hangzhou)
Third Institute of Oceanography (Xiamen)
Tianjin Institute of Sea Water Desalination and Multipurpose Utilization (Tianjin)
Institute for Ocean Development Strategy (Beijing)
Marine Advisory Service Center (Beijing)
Office of Polar Expedition (Beijing)
Office of China Ocean Mineral Resources Research and Development
Association (Beijing)
China Ocean Press (Beijing)
Office of Retired Staff and Veteran Cadres (Beijing)
Service Center of the Headquarters of the SOA (Beijing)
Beijing Training and Education Center (Beijing)

CMA

Chinese Academy of Meteorological Sciences;
Research Institute of Urban Meteorology, Beijing;
Research Institute of Atmospheric Environment, Shenyang;
Research Institute of Heavy Rain, Wuhan;
Shanghai Typhoon Institute;
Research Institute of Tropical Meteorology, Guangzhou;
Research Institute of Plateau Meteorology, Chengdu;
Research Institute of Arid Meteorology, Lanzhou;
Research Institute of Desert Meteorology, Urumuqi

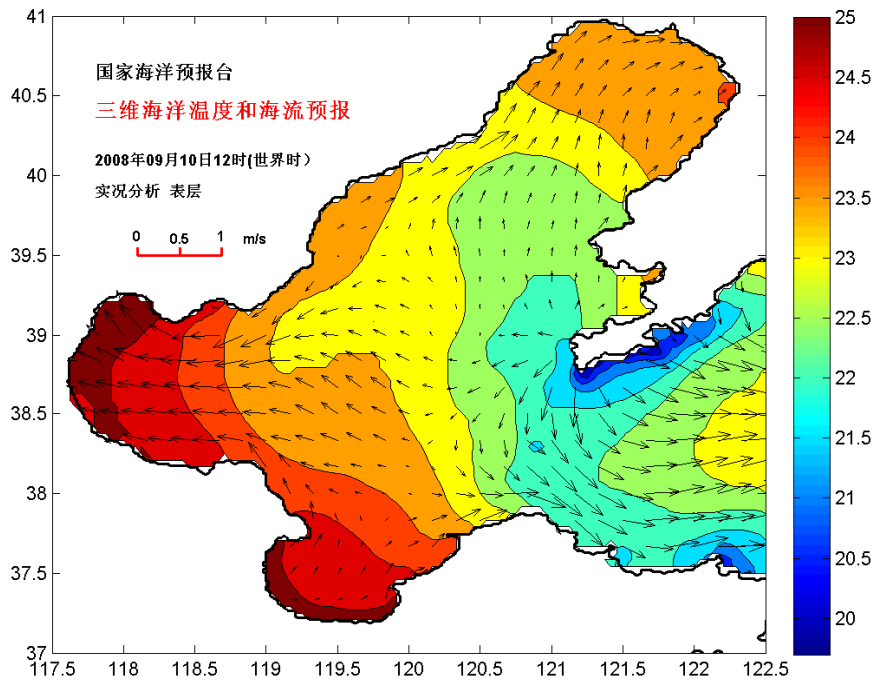
Office of General Affairs;
Department of Observation and Telecommunication;
Department of Forecasting Services and Disaster Mitigation;
Department of Scientific and Technological Development;
Department of Planning and Finance;
Department of Human Resources and Education;
Department of Policy and Regulations;
Department of International Cooperation;
Committee of the Communist Party of China at CMA,
Office for Retired Personnel;
Discipline Inspection Office, and
Auditing Office.

National Meteorological Centre (the Central Meteorological Observatory);
National Satellite Meteorological Centre
(National Centre for Space Weather Monitoring and Warning);
National Climate Centre;
National Meteorological Information Centre;
Chinese Academy of Meteorological Sciences;
Atmospheric Observation Technology Centre;
China Meteorological Administration Training Centre;
Department of Capital Construction & Real Estate Management;
Logistic Service Centre;
Audio-Visual Publicity Center;
China Meteorological News Press, and Meteorological Press.

Short-term forecast products

- Sea Surface temperature (NMEFC and other centers)
- Ocean wave and swell (NMEFC and other centers)
- Tide (other centers)
- Beach (water quality, temperature, significant wave and tide etc.) (NMEFC)
- Ship Routing (NMEFC)

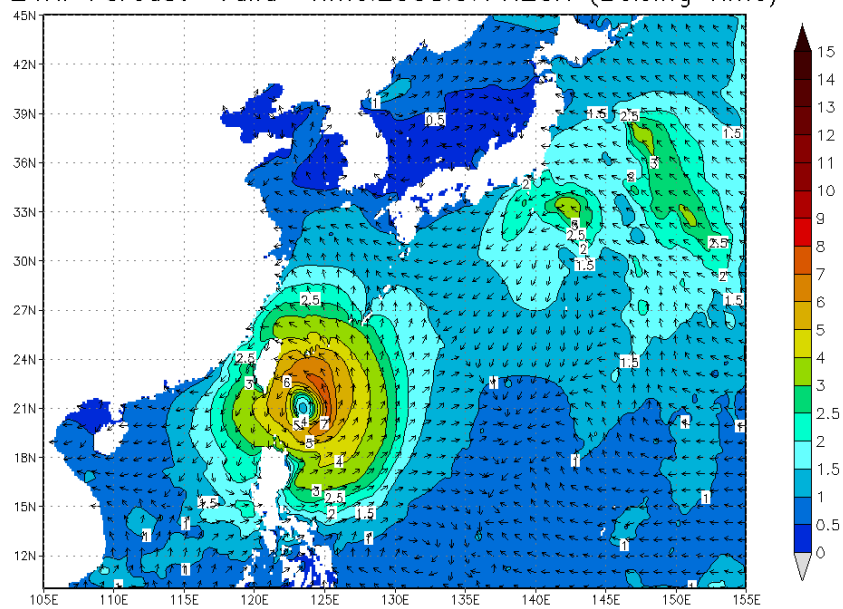
SST and Sea current



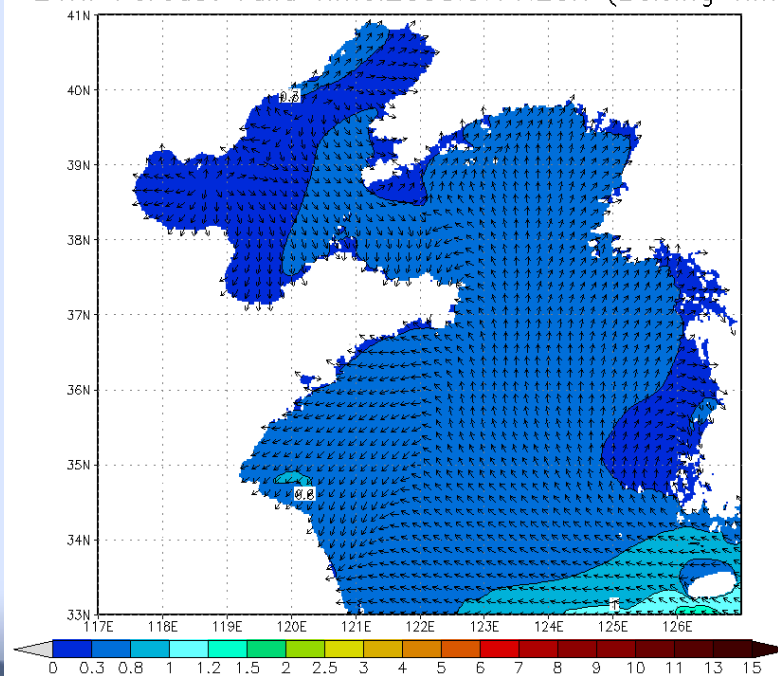
Bohai Sea
Sep 10, 2008

Ocean wave

24Hr Forecast Valid Time:2008:9:11:20H (BeiJing Time)



24Hr Forecast Valid Time:2008:9:11:20H (BeiJing Time)

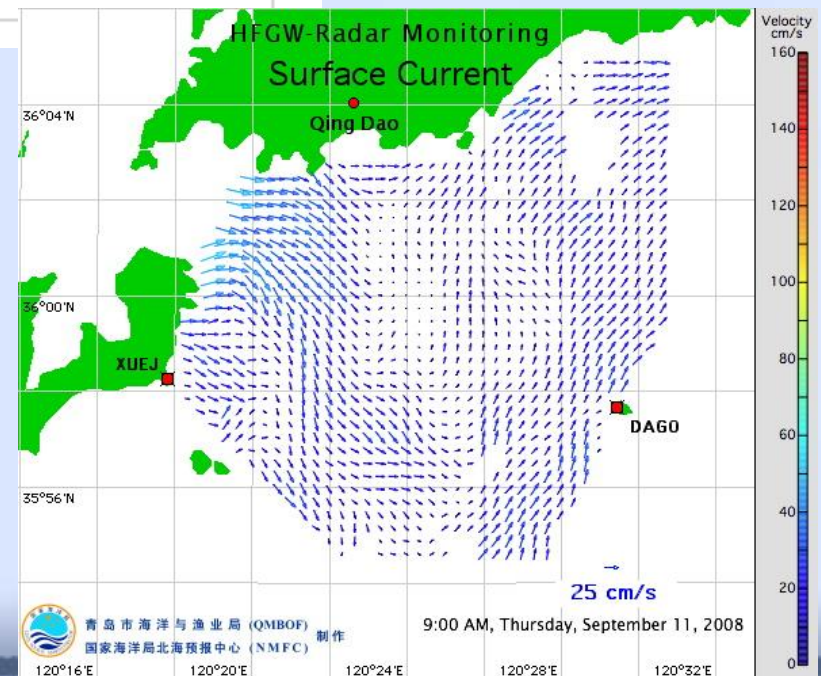


Northwest Pacific and Bohai Sea, Huanghai Sea
Sep 10, 2008

Ocean wave, Swell and Surface Current

	波高 (米)	波向	涌向
渤海	1.0	北	-
黄海北部	1.0	南转北	-
黄海中部	1.5	南转北	南转北
黄海南部	1.0-1.5	东南	东南

North China Sea Marine Prediction Center
Sep 11, 2008



Sea Level



堡镇防汛资料信息框

预报发布时间:

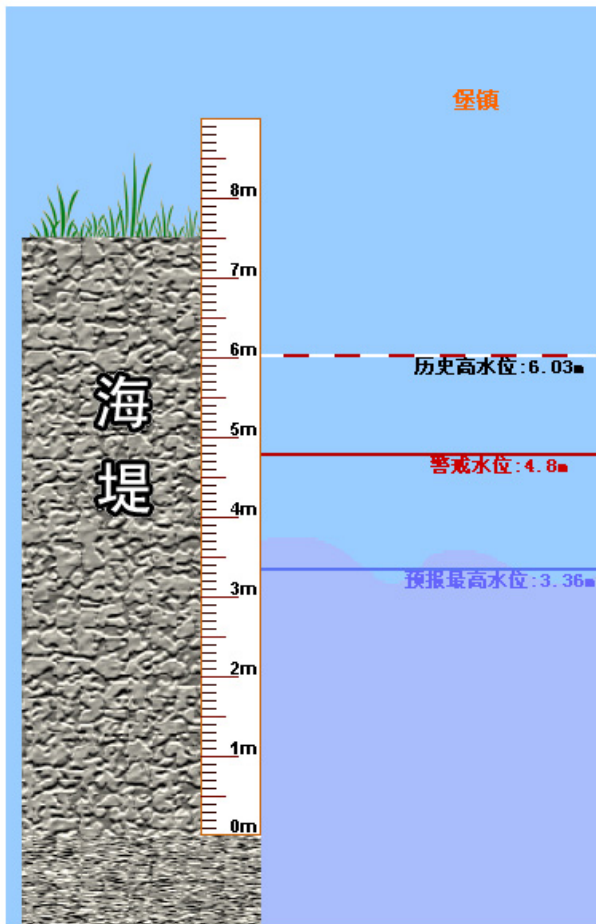
2008-9-11

预报内容:

第一高潮时:	
2008-09-11 22:21	
水位	3.36 m
第二高潮时:	
2008-09-12 10:48	
水位	2.86 m
沿海波高: 1.1 m	

站址基础资料:

海堤高	7.5 m
历史高水位	6.03 m
警戒水位	4.8 m



East China Sea Marine Prediction Center
Sep 10, 2008

Travel industry sites

旅游区	浪高(m)	水温	高潮时	低潮时		
汕头海域	1.5-2.3	26.5-27.4	0032	0822	0504	1705
汕尾海域	1.2-2.0	28.1-29.0	0614	2100	1348	
深圳海域	0.6-1.0	29.6-30.4	0523	2113	1401	
珠海海域	0.5-0.8	30.2-31.0	0657	2152	0116	1500
上川岛海域	1.0-1.8	29.8-30.6	0720	2105	0105	1444
闸坡海域	0.5-1.0	29.5-30.4	0744	2148	0122	1511
水东海域	0.8-1.6	29.4-30.3	0810	2201	0136	1509
湛江海域	1.0-1.8	29.3-30.2	0853	2233	0220	1551
北海海域	0.4-0.8	28.5-29.7	1511		0110	
三亚海域	0.7-1.2	29.0-30.2	0746		1655	

24 hours forecast of SST,
Wave Height and tide
Sep 11, 2008
South China Sea Marine Prediction Center

旅游区海洋预报

发布时间: 2008年09月11日上午
有效时间: 24小时



相关旅游信息

三亚海域

浪高: 0.7-1.2 m

水温: 29.0-30.2 °C

高潮时: 0746 /

低潮时: 1655 /

Beach

海水浴场名称	水质	水温	浪高	游泳适宜度	最佳游泳时段	高潮	低潮	提示
三亚亚龙湾	优	29.6℃	1.2米	较适宜	06:00-11:00	05:45	15:51	注意风浪
防城港海水浴场	良	30.4℃	0.6米	较适宜	08:00-18:00	13:31		水质一般
湛江东海岛	优	29.3℃	0.9米	适宜	06:00-10:00	21:52	15:18	无
广东江门川岛	优	29.5℃	0.6米	适宜	06:00-09:00	21:58	13:26	无
广东汕尾红海湾	优	28.4℃	1.2米	较适宜	06:00-08:00	04:23	14:08	注意风浪
福建东山马銮湾	优	28.6℃	0.8米	适宜	06:00-10:00	21:51	14:47	无
福建平潭龙王头	良	27.2℃	1.3米	较适宜	17:00-21:00	19:53	13:06	注意风浪
舟山朱家尖	优	27.1℃	0.9米	适宜	15:00-21:00	18:28	10:25	无
山东日照海水浴场	优	26.8℃	0.5米	适宜	11:00-16:00	13:34	20:23	无
威海国际海水浴场	优	22.9℃	0.5米	较适宜	06:00-09:00	19:33	13:03	水温较低
北戴河老虎石	优	25.4℃	0.9米	较适宜	08:00-20:00	15:03	01:08	注意降水
大连金石滩	优	22.6℃	0.9米	较适宜	06:00-10:00	18:18	13:06	水温较低

Routing forecast

旅游航线预报

大连—烟台航线

风险指数: **1**



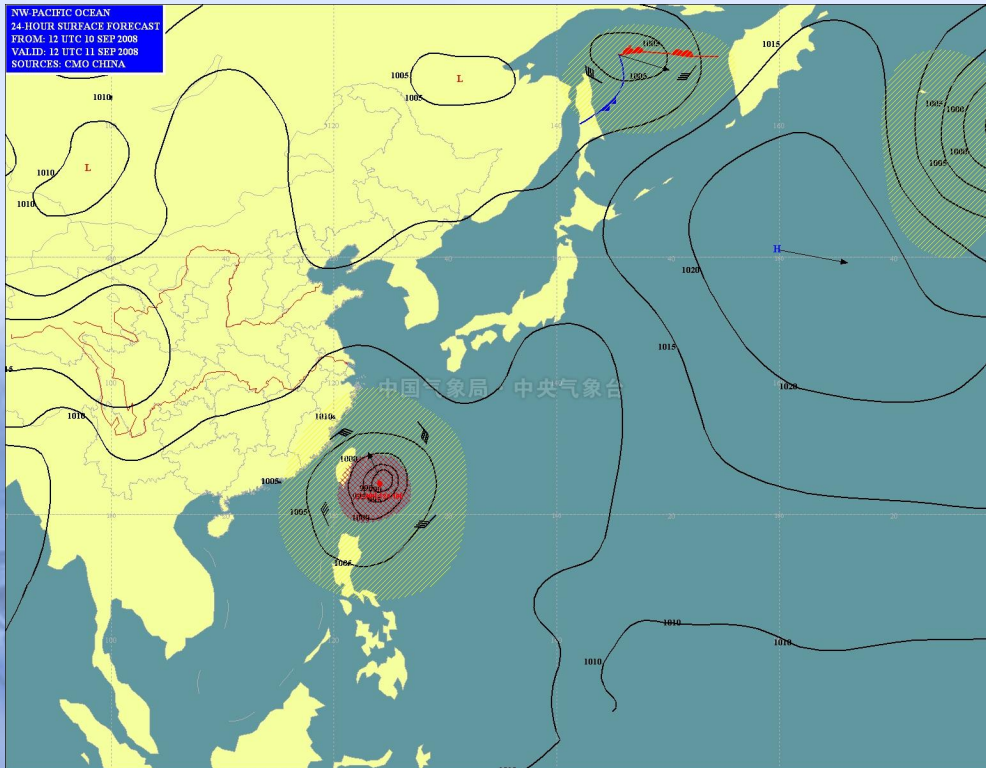
晕船指数: **2**



国家海洋局
国家海洋预报台

Between Dalian and Yantai
Risk index and Seasick index

Marine weather forecast of CMA



surface pressure, trough-line
and ridge line
Sep 10, 2008

Medium range forecast

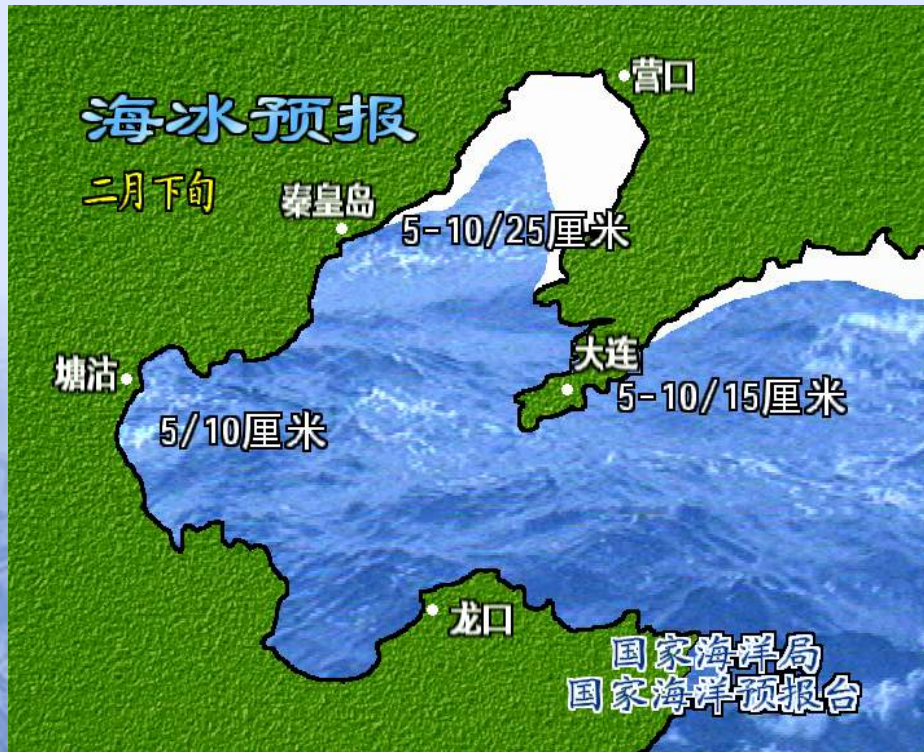
- Ten-day SST
- Ten-day Sea Ice (winter)

Sea Surface Temperature



Sep 9-19, 2008

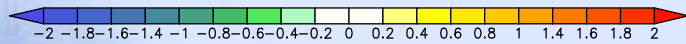
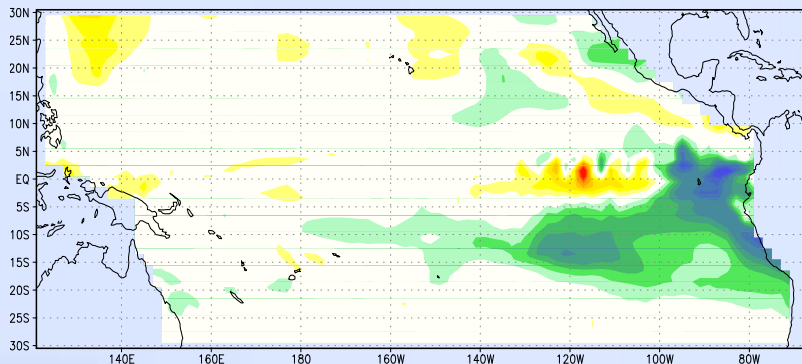
Sea ice



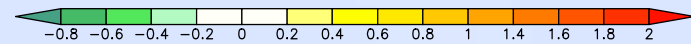
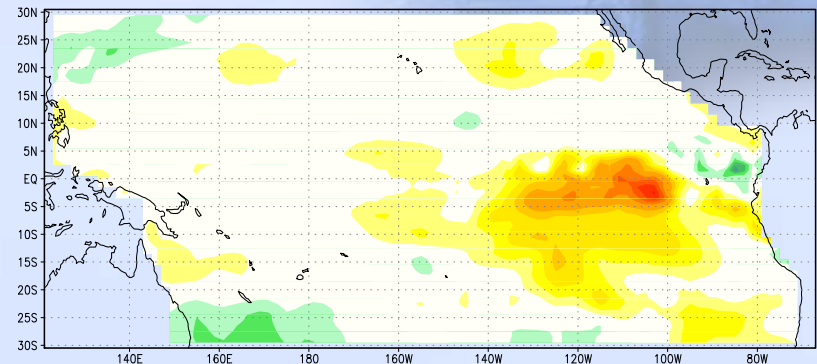
Feb 20-29, 2008

Long-term forecast----El Nino

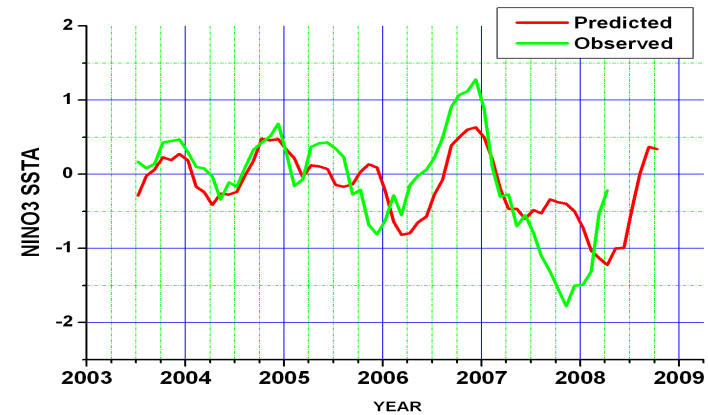
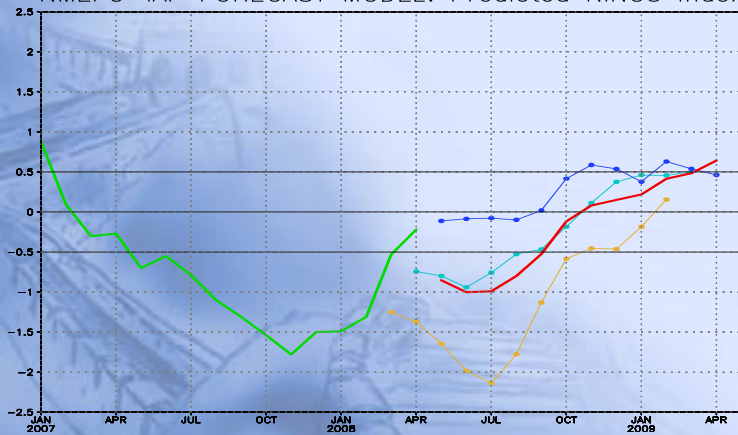
FORECASTING SSTA AUG2008



FORECASTING SSTA NOV2008



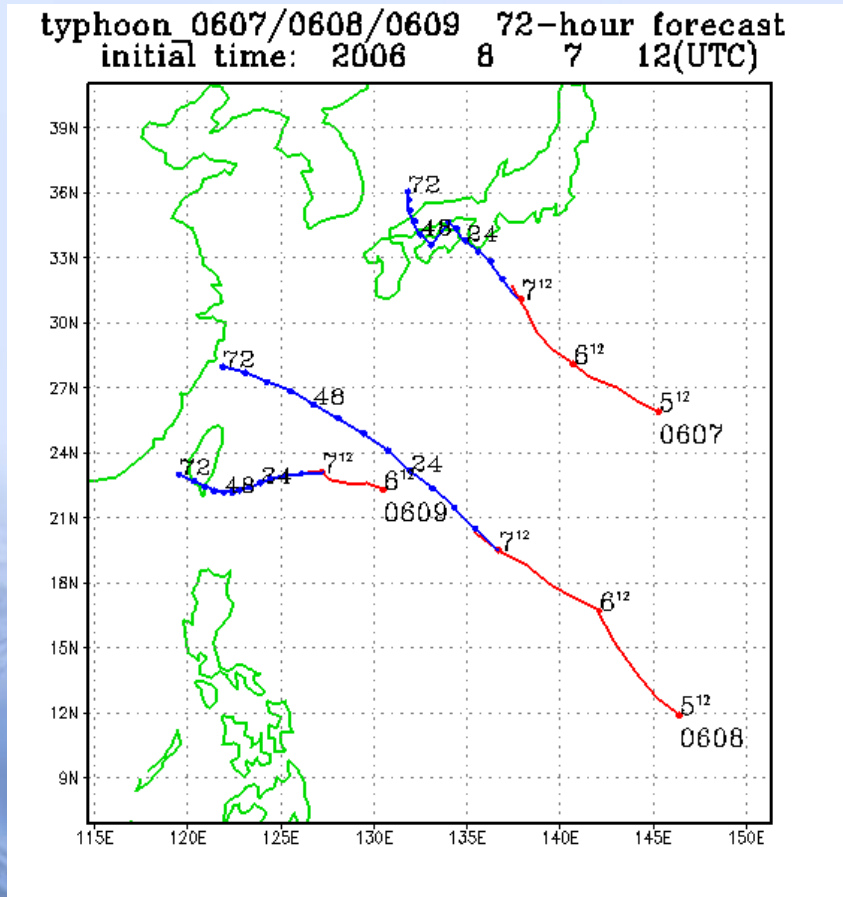
NMEFC-IAP FORECAST MODEL: Predicted NINO3 Index



Marine disaster pre-warning

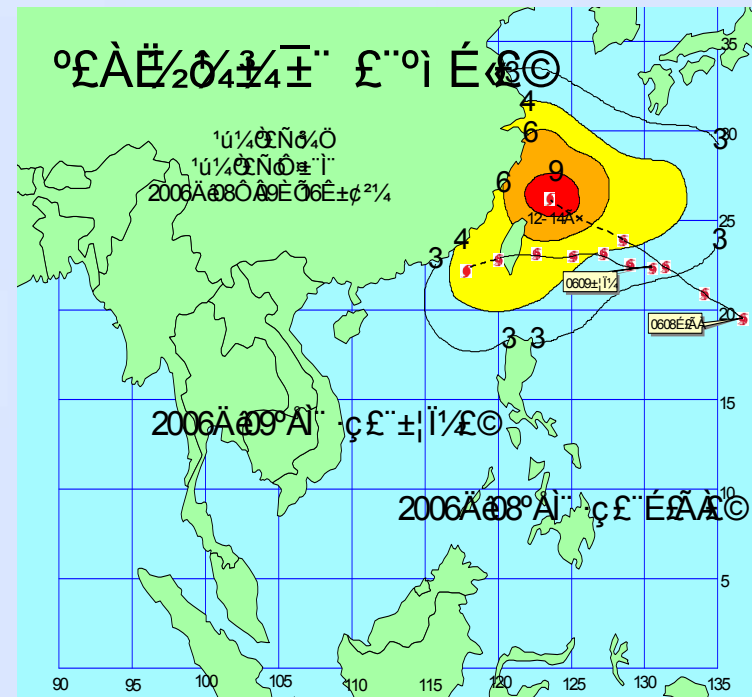
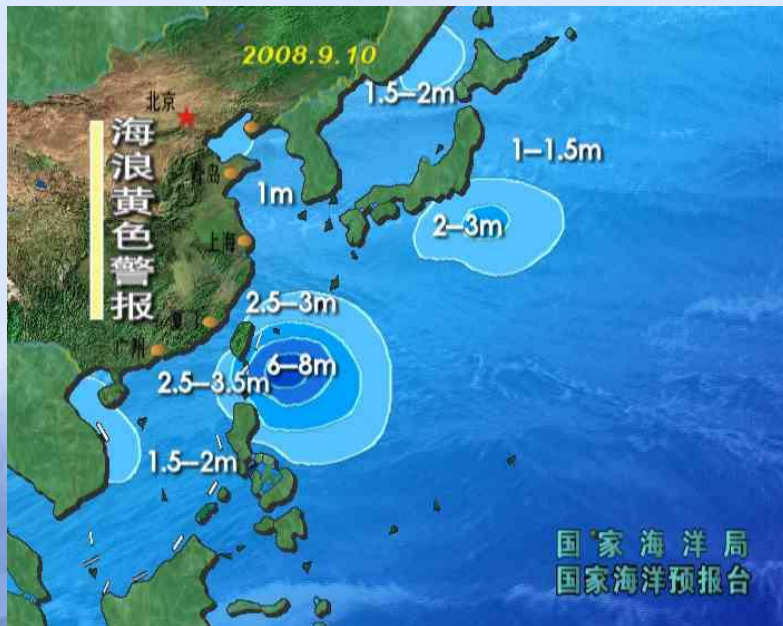
- Typhoon
- Ocean wave
- Storm surge
- Tsunami
- Sea ice
- Oil spill

A case: typhoon forecast



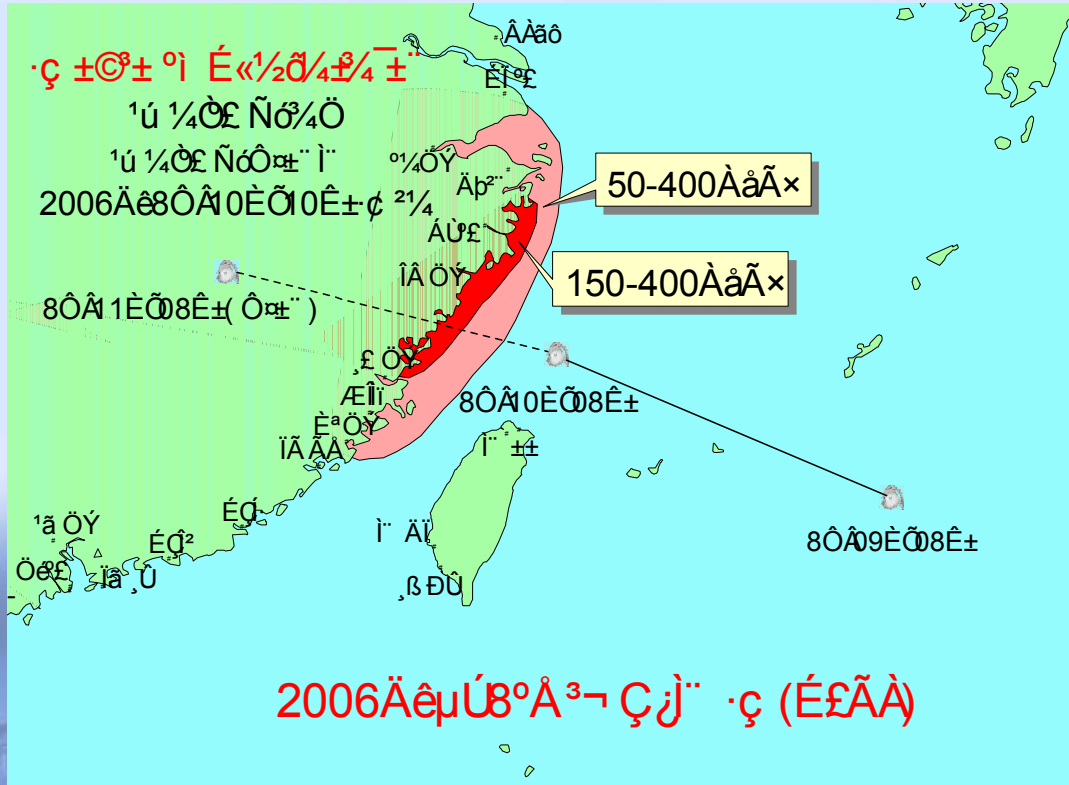
Path of "MARIA"
and "SAOMEI"

A case: Ocean wave forecast and pre-warning



Significant wave
 Red (I) 6.0-8.9m
 Orange (II) 4.0-5.9m
 Yellow (III) 2.5-3.9m
 Blue (IV) Daily forecast

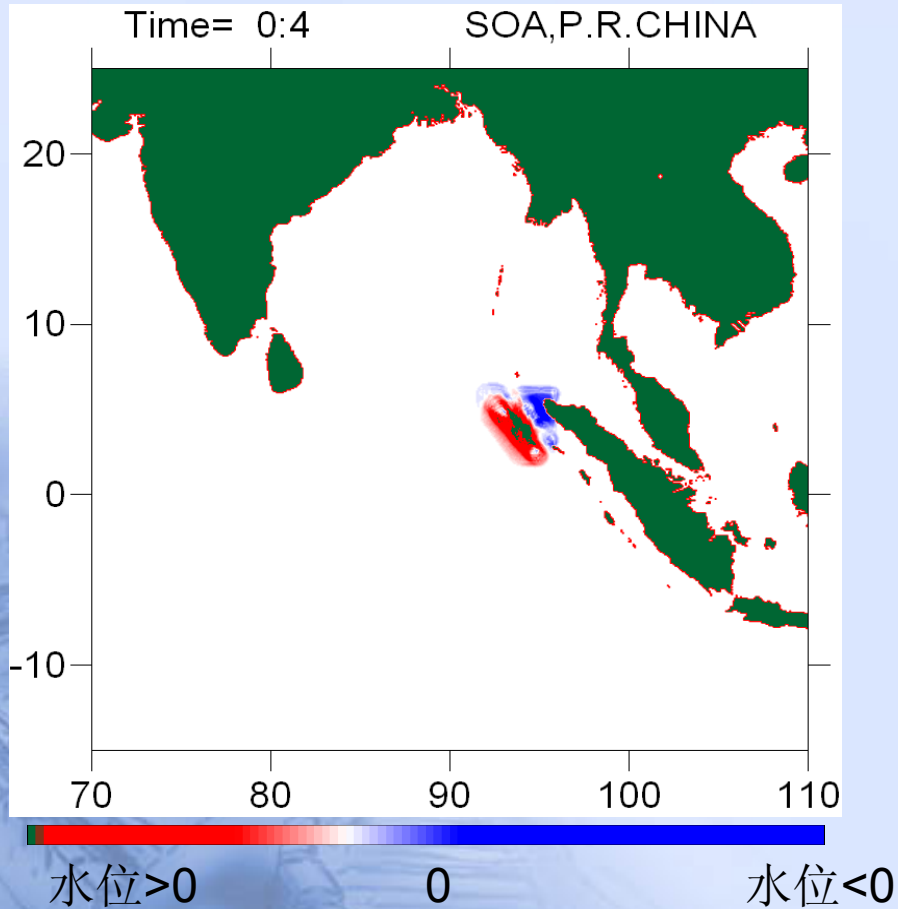
A case: typhoon storm surge



Sea level anomaly

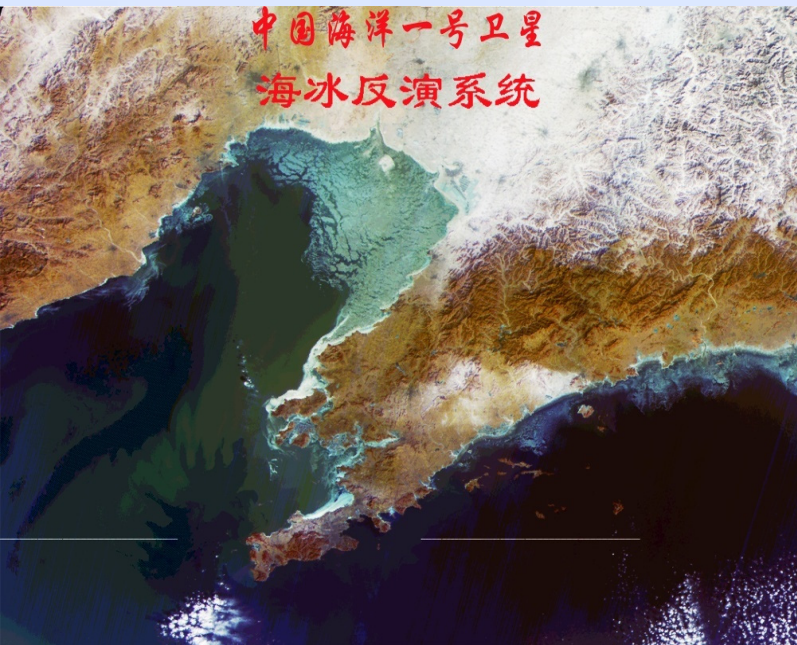
- Red (I) over 80cm
- Orange (II) 30-80cm
- Yellow (III) about 30cm
- Blue (IV) below 30cm

A case: Tsunami

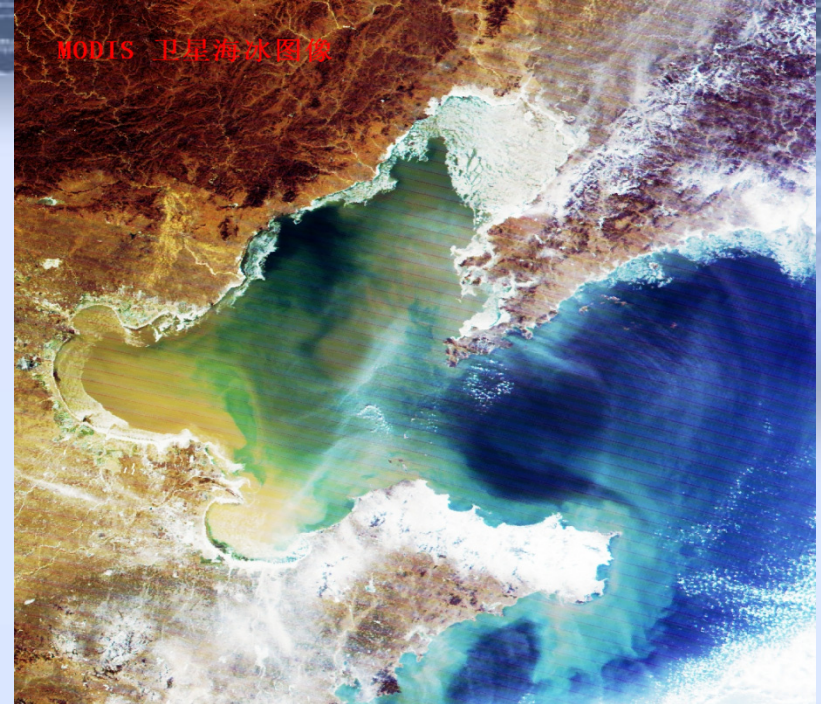


Significant wave of Tsunami
Red (I) 3m and cover 300km
Orange (II) 2-3m
Yellow (III) 1-2m
Blue (IV) below 1m

● A case:
numerical forecast of
Sea Ice in Bohai Sea



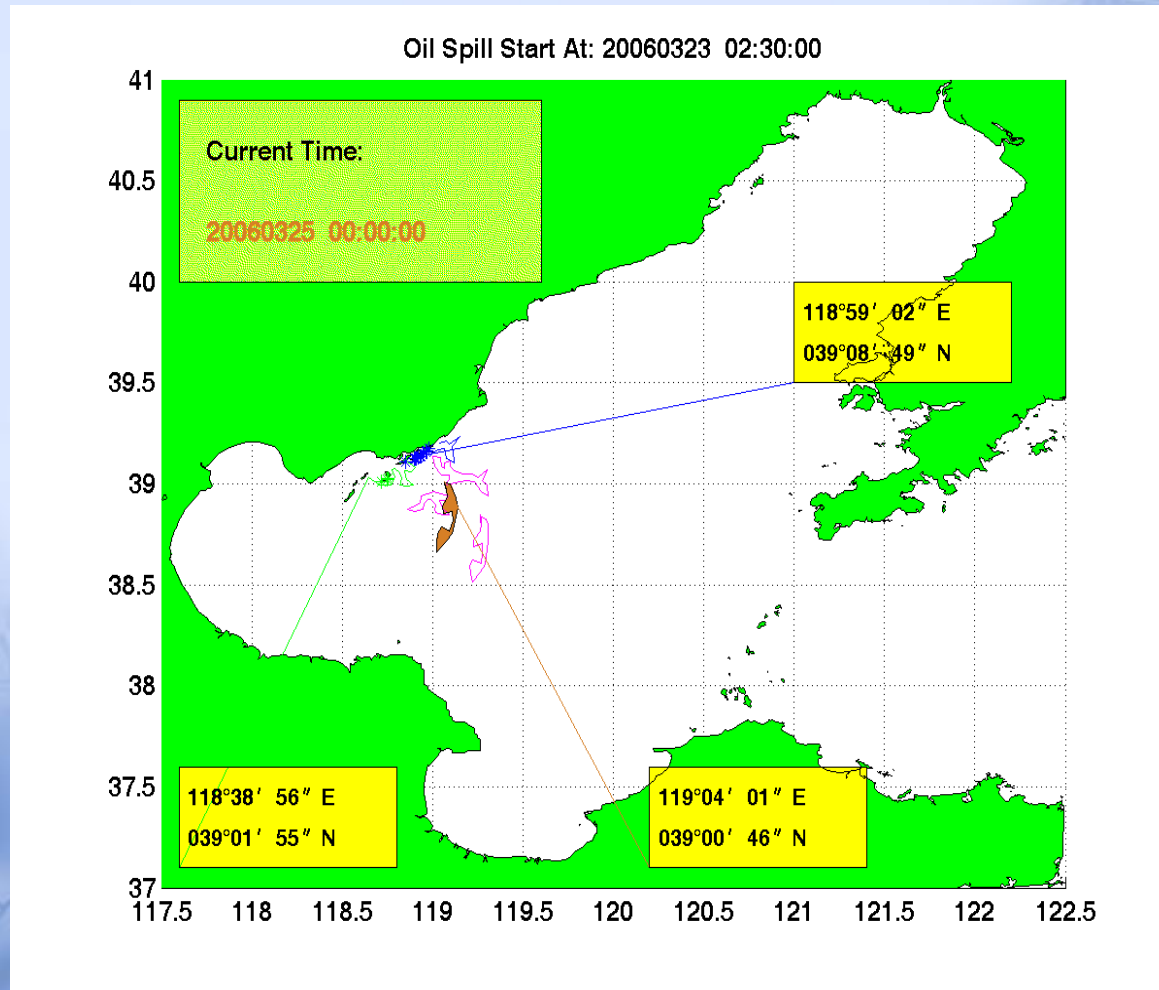
HY-1



MODIS



A case: Track of Oil spill in Bohai Sea



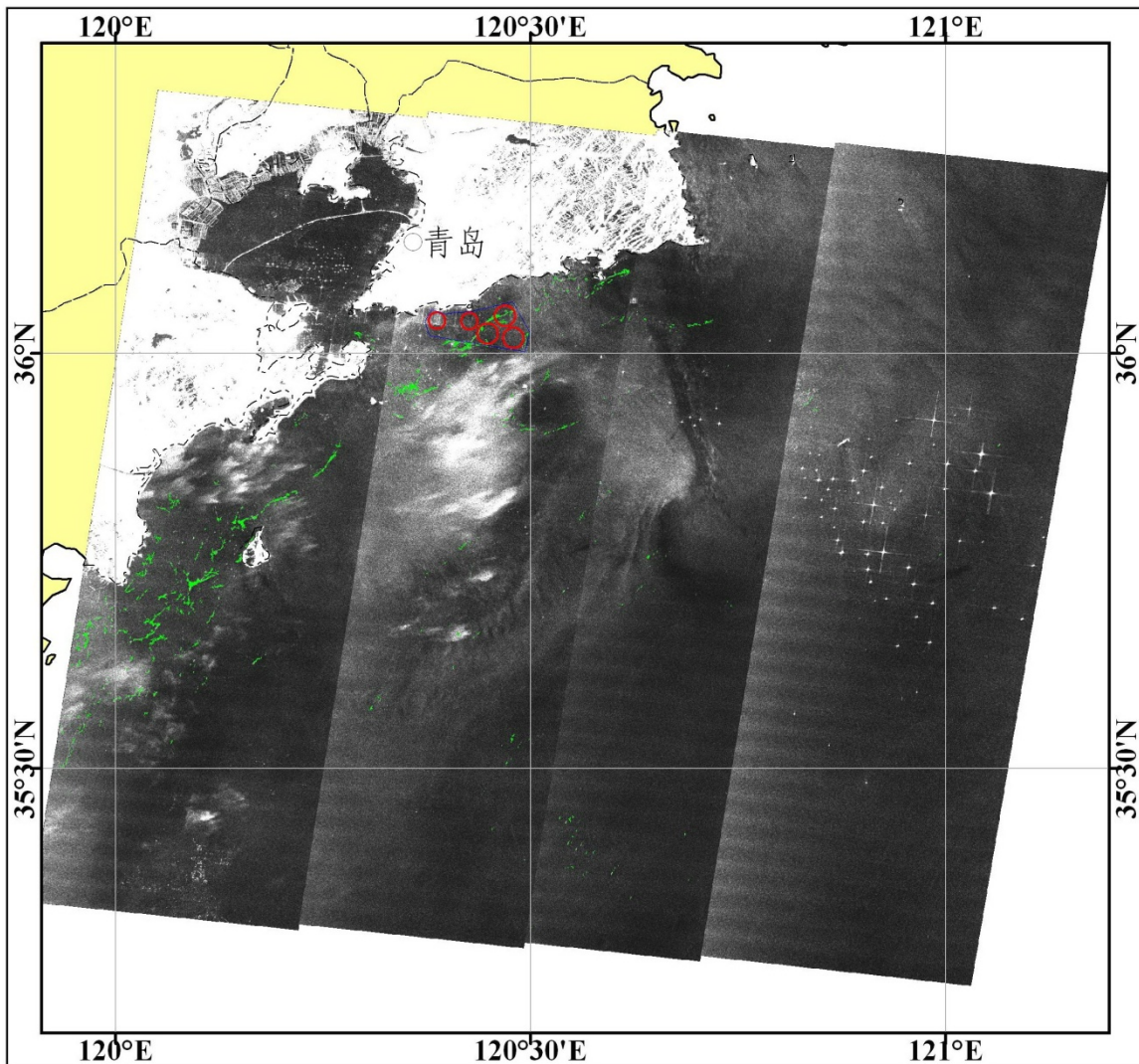
Entermorpha Emergency Forecast

- May 2008, a large amount of phytoplankton – Entermorpha occurs in the Middle of the Yellow Sea (especially near Qingdao city) .
- June 2008, Entermorpha substantial growth, endangered the safety of the Olympic sailing in Qingdao. State Oceanic Administration started the emergency plans rapidly, which include strengthening of the satellites, aircraft and ships' monitoring and observation.
- The forecast on the drift of the Entermorpha has been started in NMEFC, which provided the forecasting products to Emergency Command Center every day.

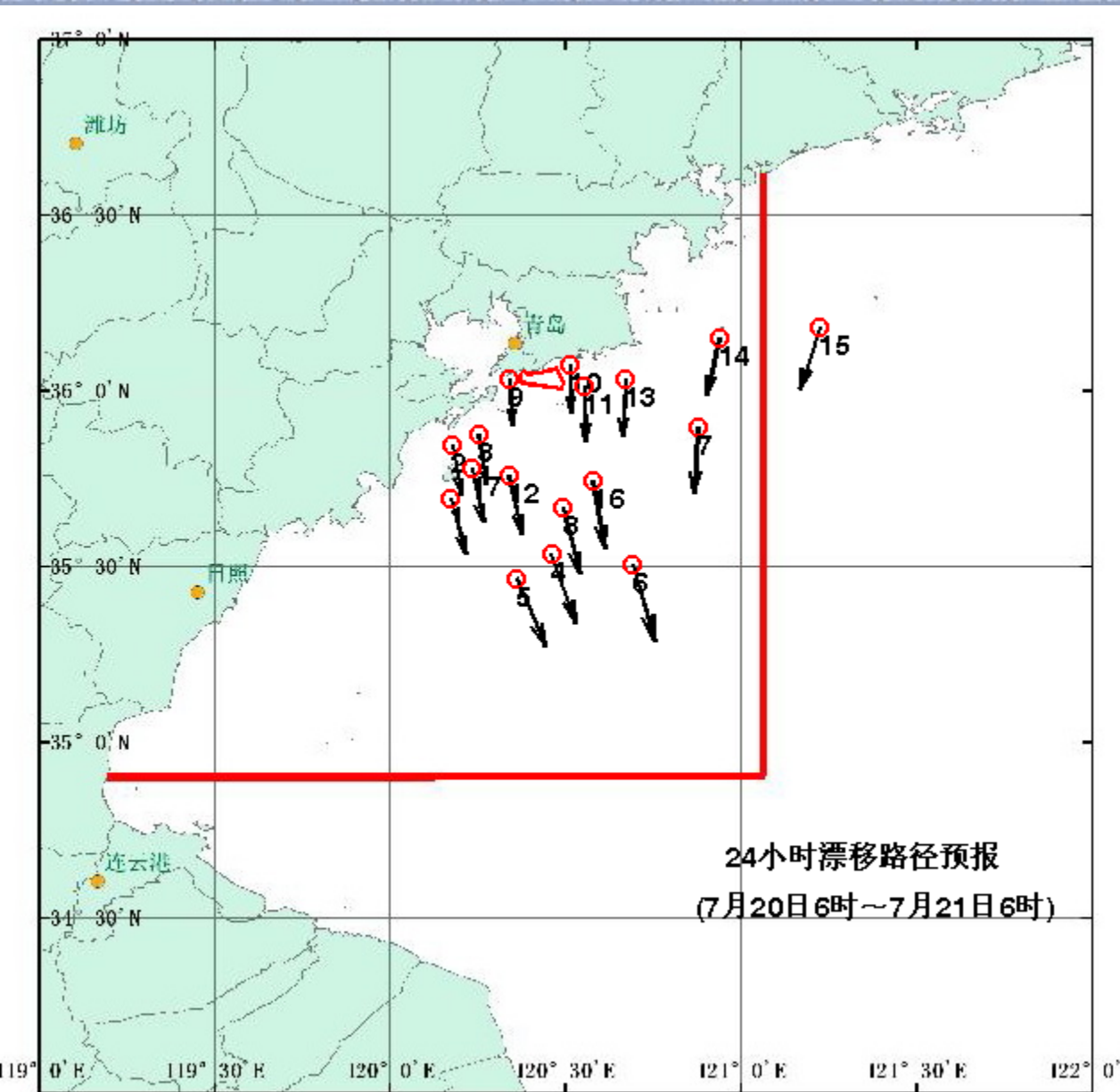


The photos of
Enteromorpha
by aircraft

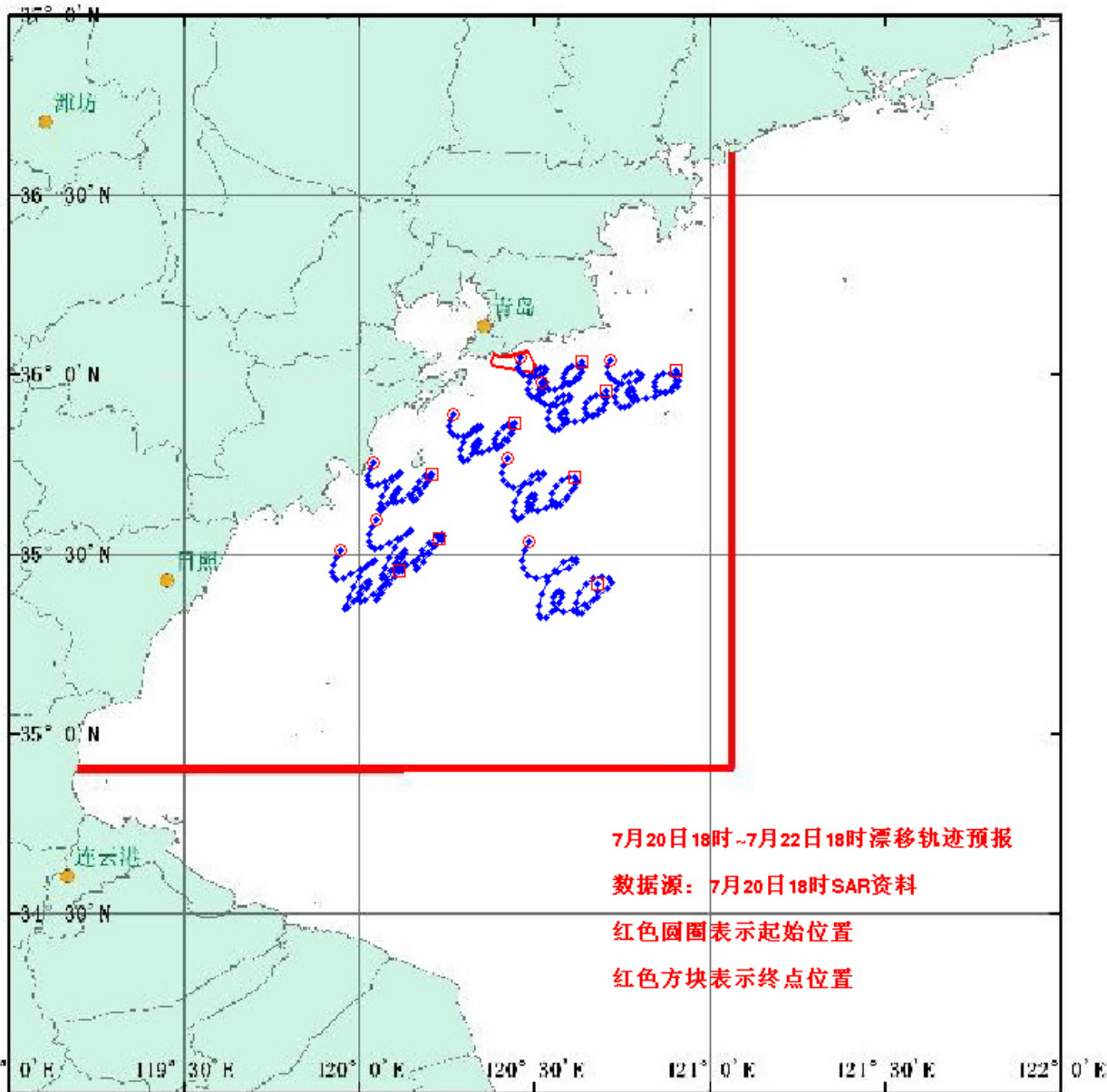
2008.06.27



Satellite remote
sensing image
of Entermorpha
2008.07.20



The drift trace
of the
Entermorpha
2008.07.20



The drift
 direction and
 distance of the
 Entermorpha
 2008.7.20



Thank you !