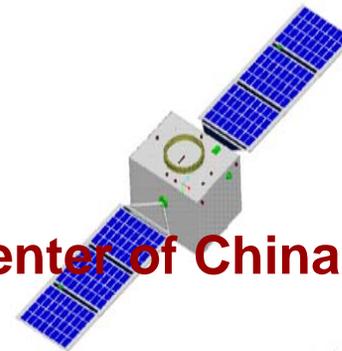




HJ-1 Small Satellites and Application for Disaster Reduction



National Disaster Reduction Center of China

Feb.11, 2010



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NDRCC



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Disaster Information in China in 2009

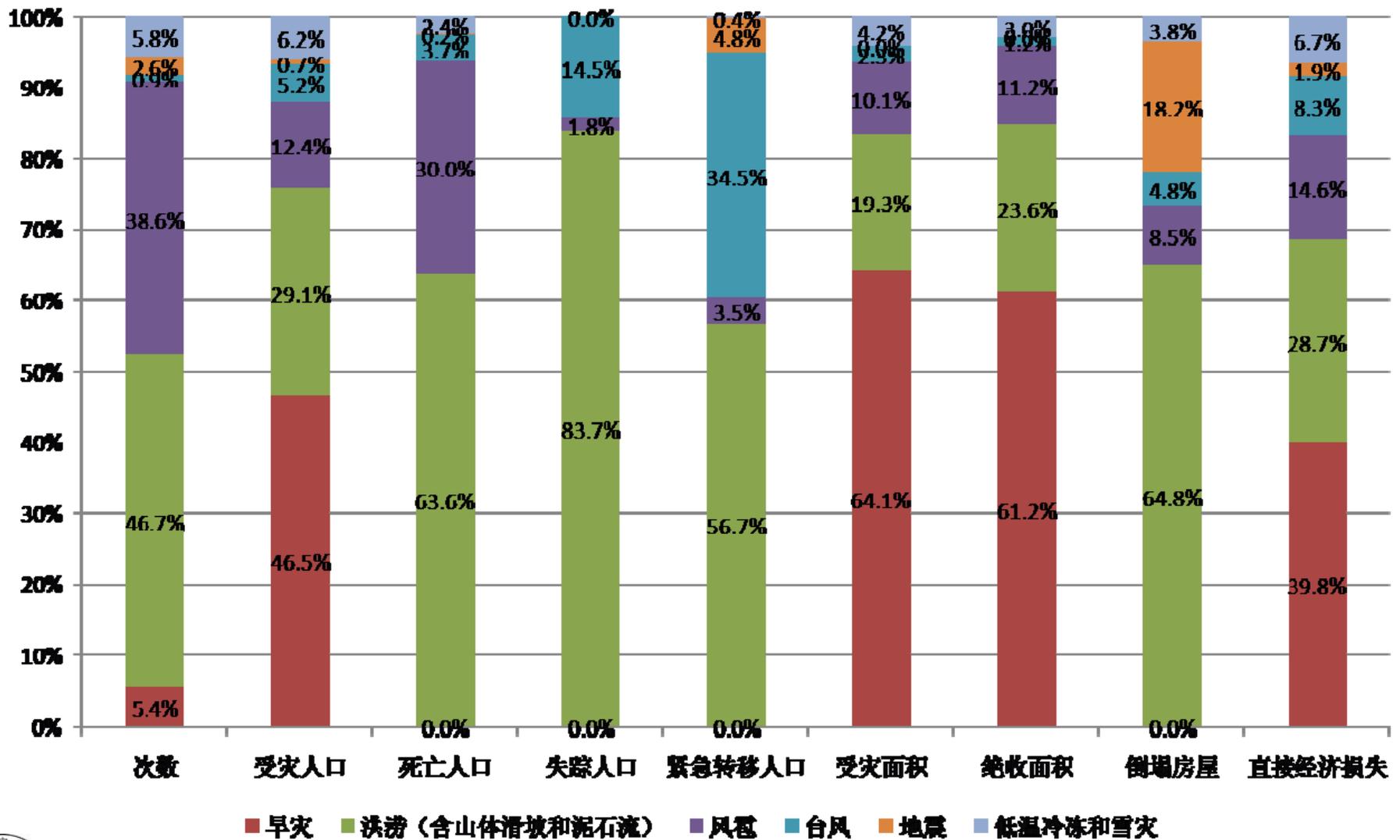
❖ China is one of the countries which suffers the most natural disasters in the world. In 2009, because of the natural disasters, there were

- 480 million people affected;
- 1528 people dead or missing;
- 7.1 million people evacuated and resettled;
- 47.2 million ha crops affected;
- 838 thousand houses collapsed.

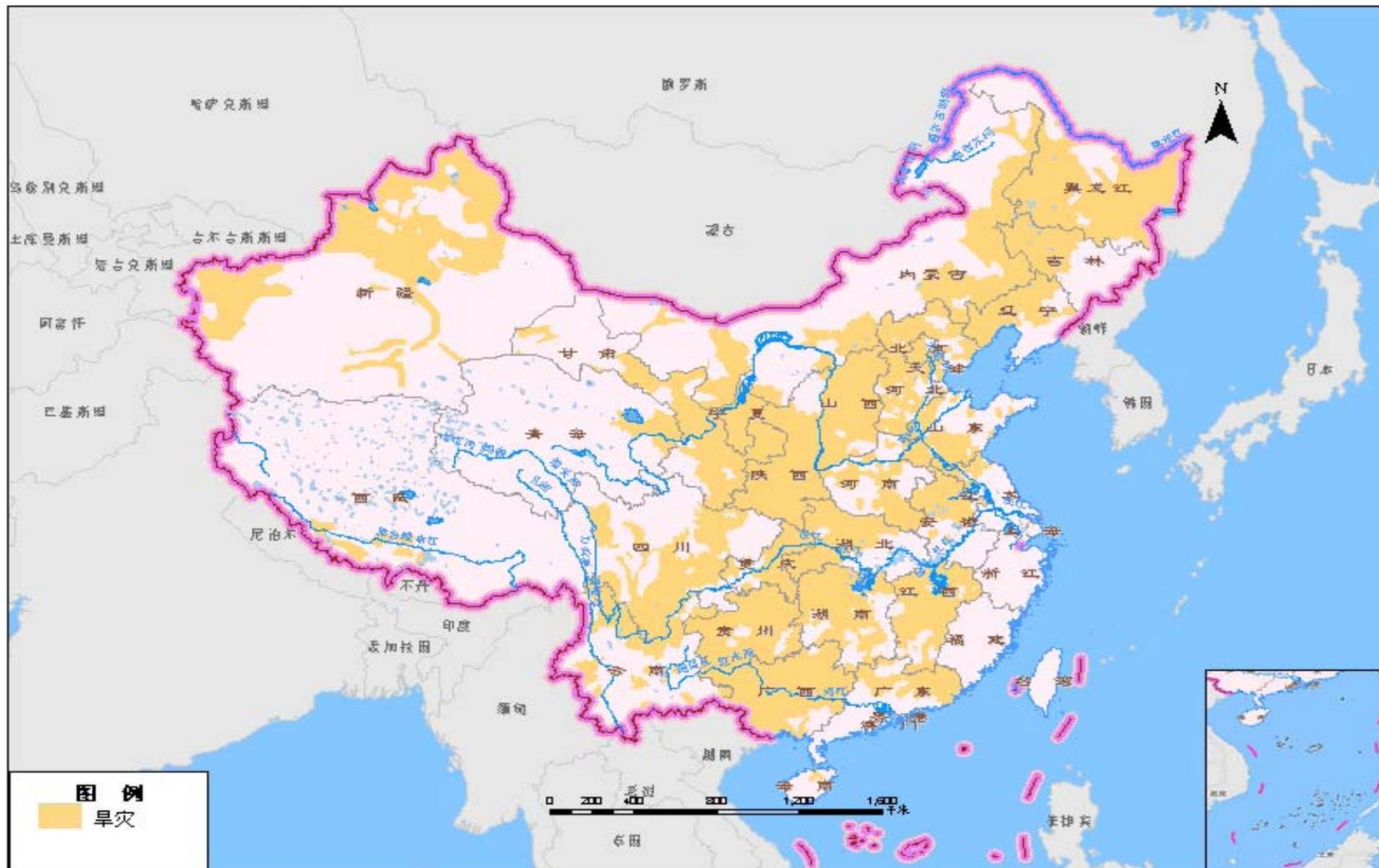
The direct economic loss is 252.3 billion RMB.



Figure of main natural disaster damage indexes



Drought Disaster Distribution Map in 2009



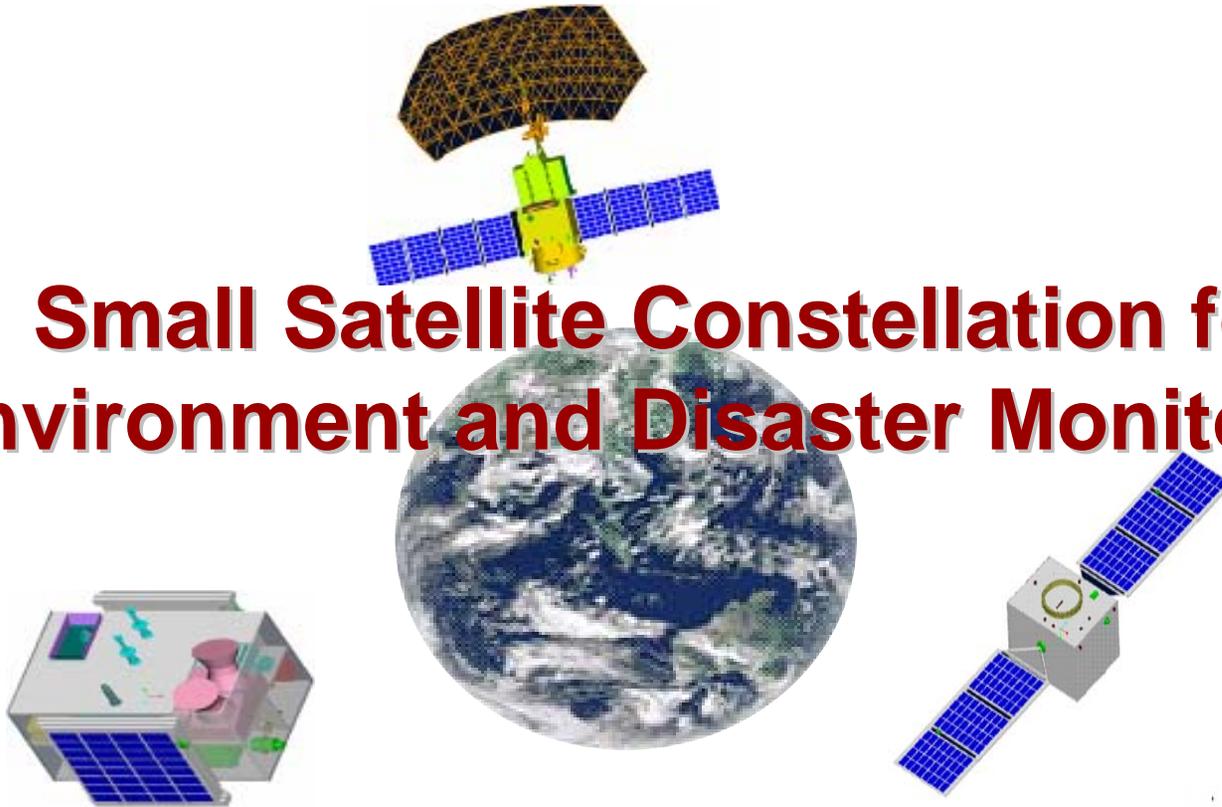
制作单位：国家减灾中心灾害信息部

制图时间：2009-11-20





Small Satellite Constellation for Environment and Disaster Monitoring



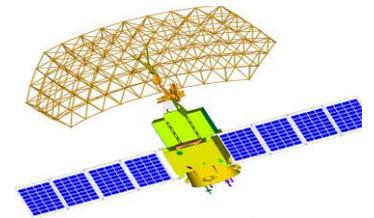
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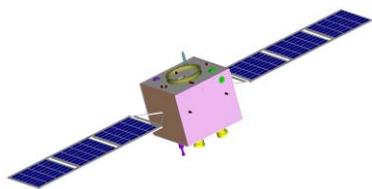


Constellation Construction Plan

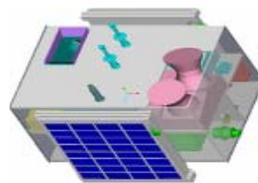
- ◆ On Sep.,6th 2008, China launched two optical satellites named HJ-1-A and HJ-1-B separately.
- ◆ A SAR small satellite named HJ-1-C will be launched in coming years.
- ◆ The final object is to realize the plan of a constellation consisting of **four optical satellites and four SAR satellites.**



HJ-1-C



HJ-1-B



HJ-1-A



中新网图
Nikon 特约



Satellites Parameters

Satellite	Payload	Spatial Resolution (m)	Swath (km)	Band Number	Revisit time (hour)
HJ-1-A	CCD	30	700	4	96
	HSI	100	50	115	96
HJ-1-B	CCD	30	700	4	96
	IRS	B1、B2、B3 : 150 B4: 300	720	4	96



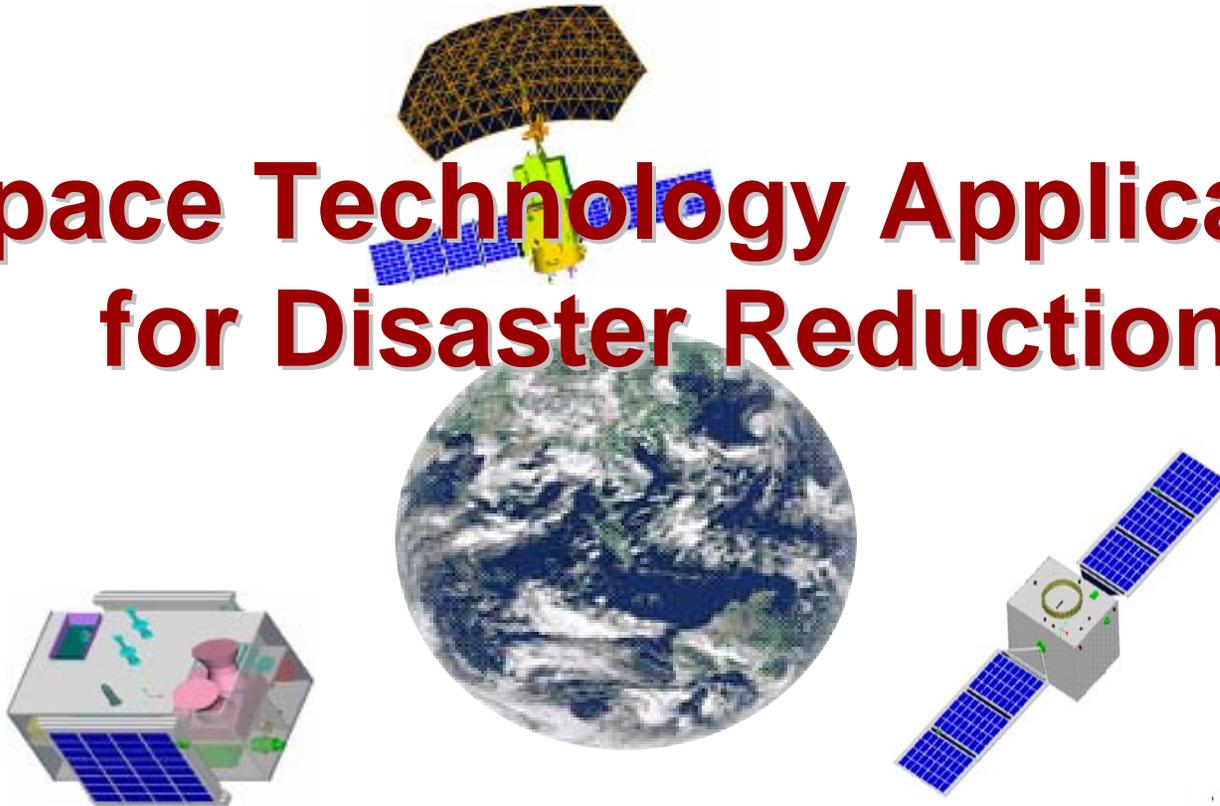
Operation Management

National Disaster Reduction Center of China (NDRCC) is in charge of the operation management of the HJ-1-A/B satellites. Till now, the satellites and payloads are in well operation conditions. There are totally more than 3,400 orbit of images have been acquired and the tasking time of the two satellites is more than 400 hours since being launched. Totally more than 170,000 scenes images were acquired.





Space Technology Application for Disaster Reduction

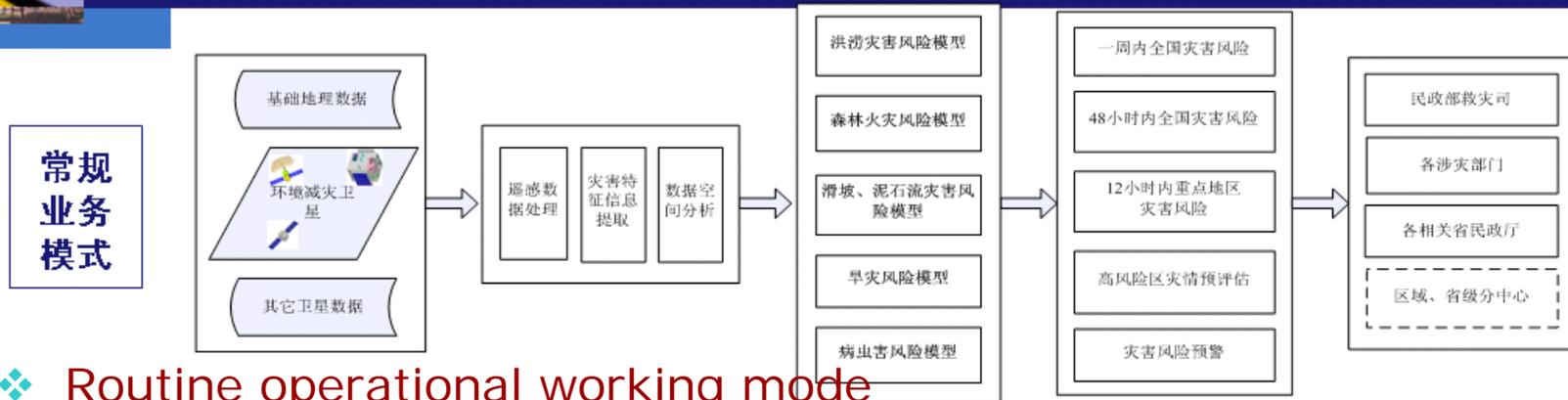


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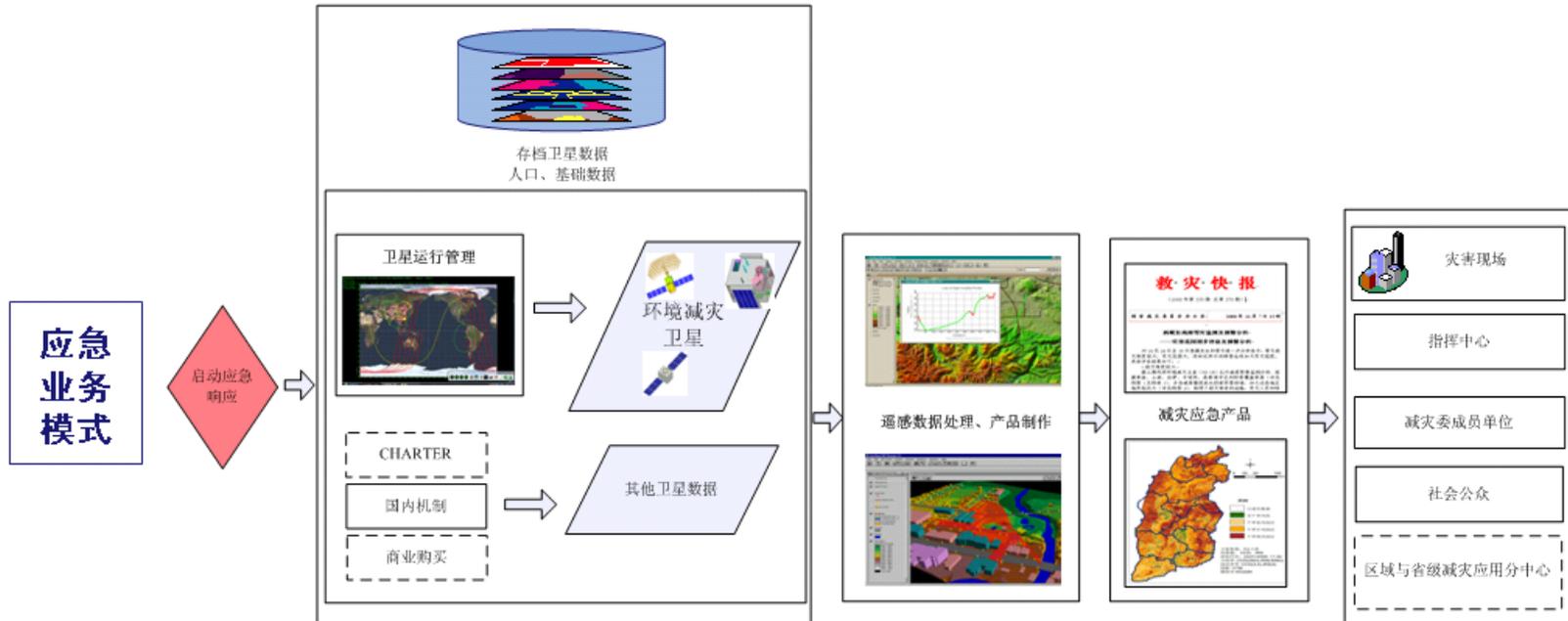
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Operational Working Modes



❖ Routine operational working mode



❖ Emergency operational working mode

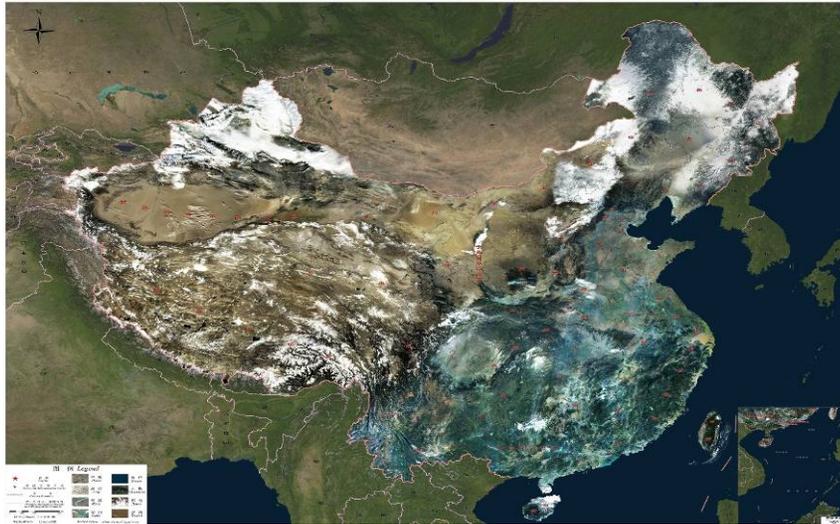


Products System

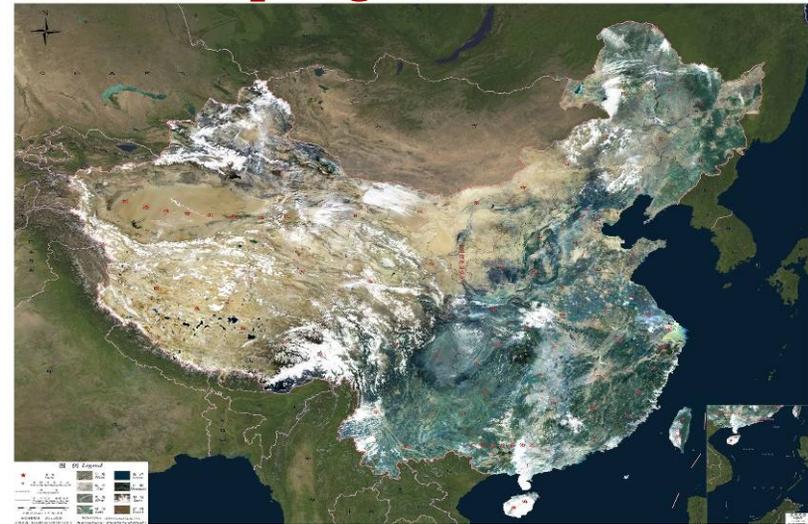


China Mosaic Maps for Different Seasons

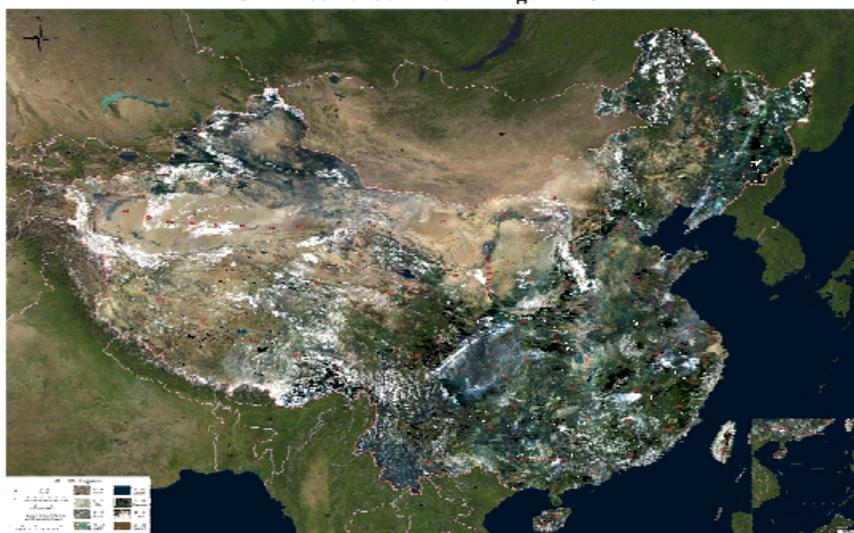
Winter in 2008



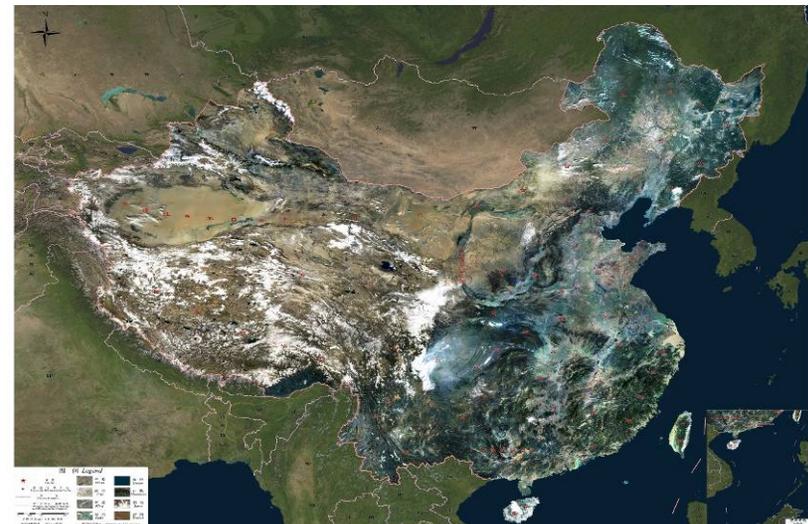
Spring in 2009



Summer in 2009

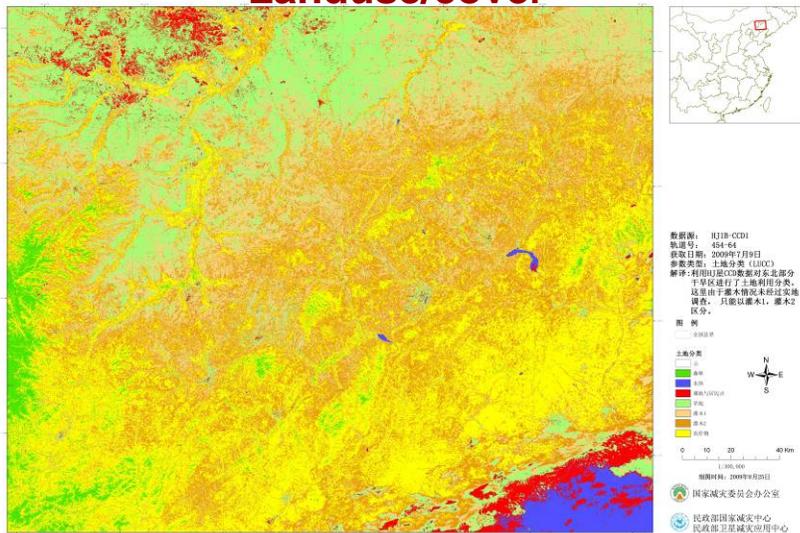


Autumn in 2009



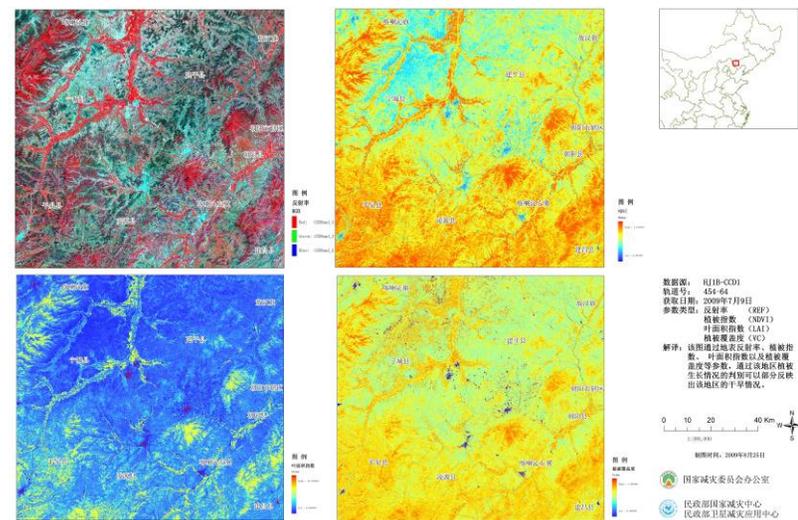
Background Parameters Extraction

东北部分干旱区土地分类图

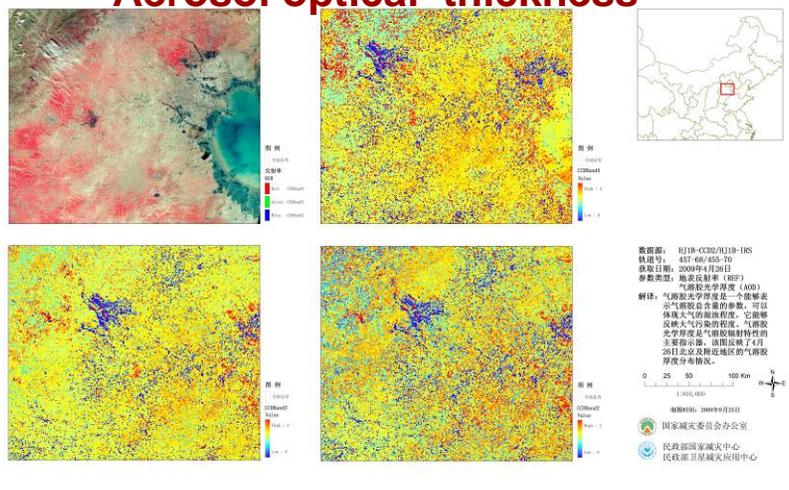


Vegetation characteristic parameters

辽宁省部分地区植被特征参数图

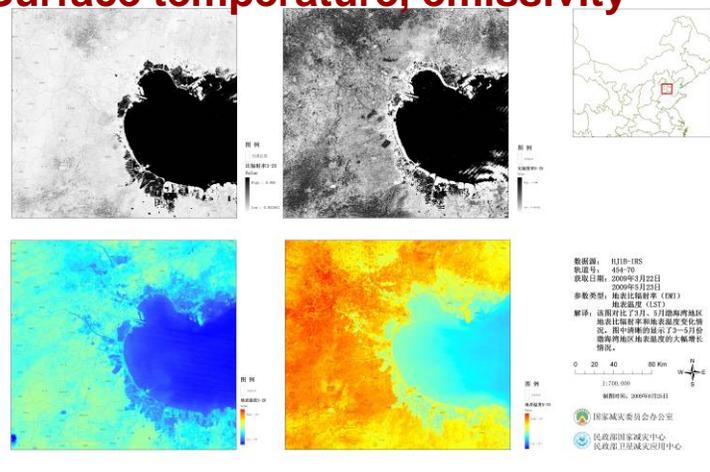


渤海湾地区气溶胶光学厚度图

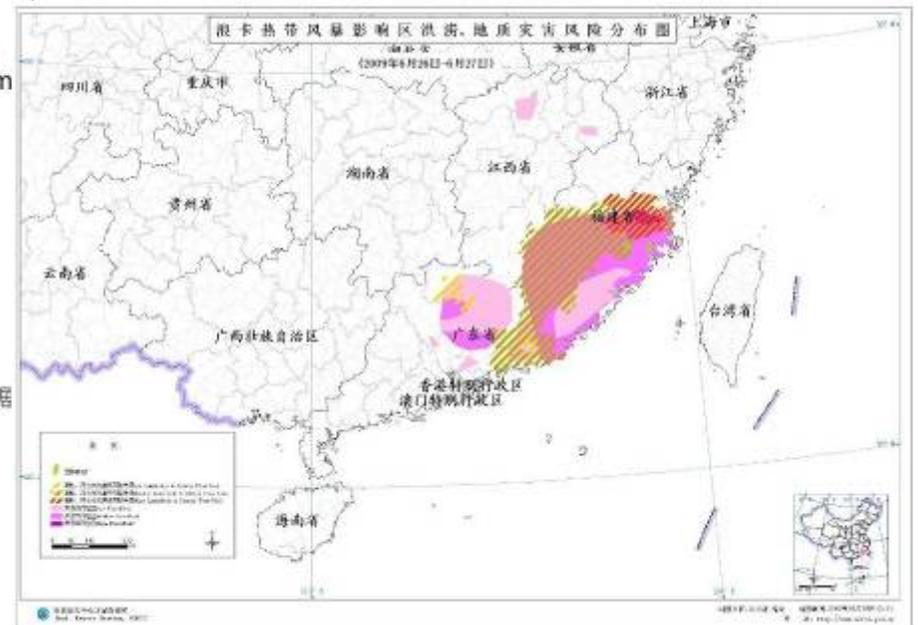
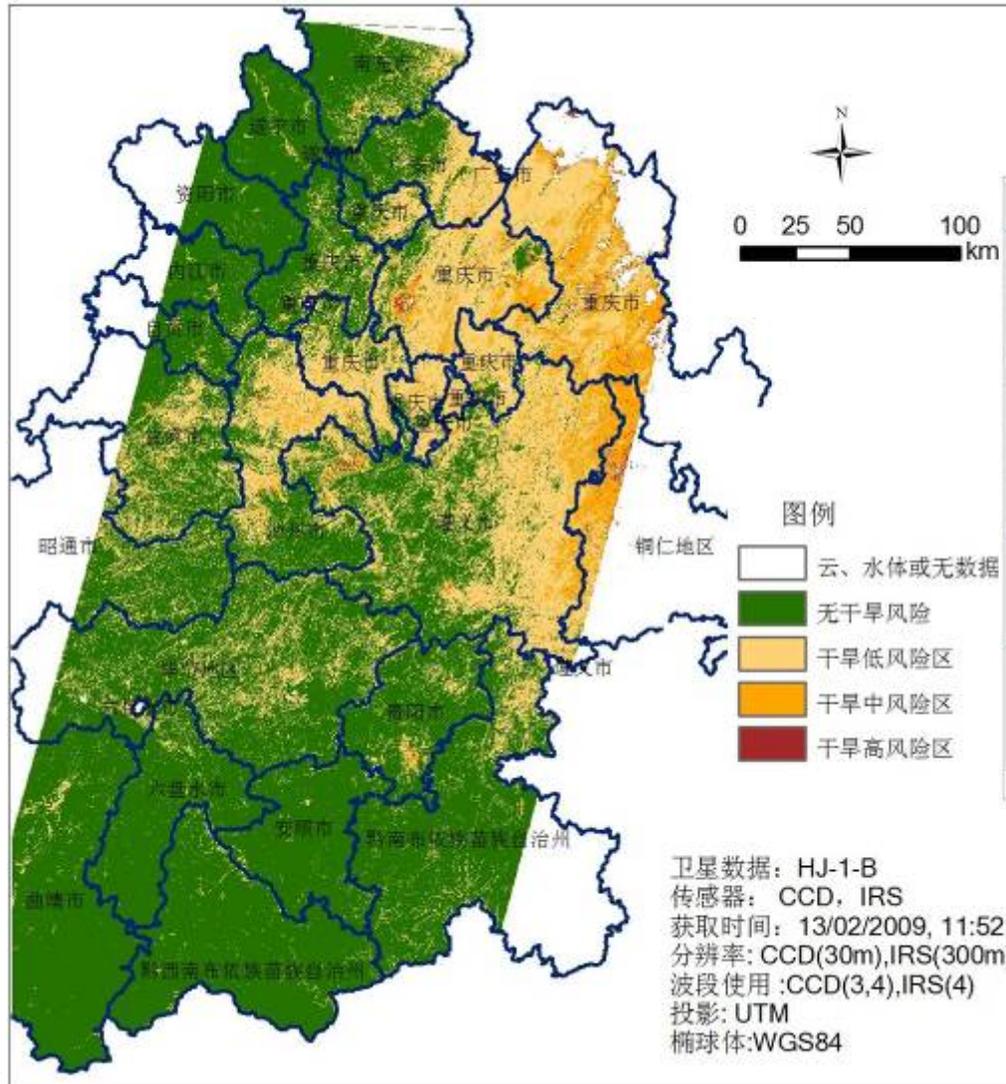


Surface temperature, emissivity

渤海湾3月、5月份地表温度参数对比图

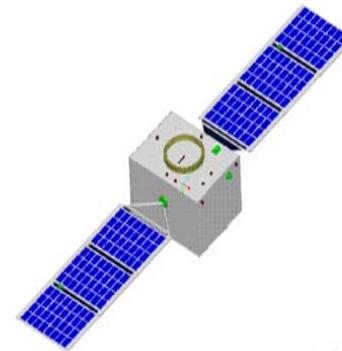
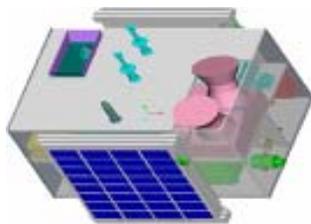
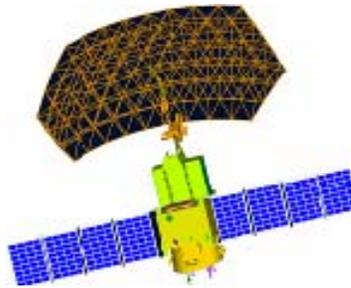


Disaster Risk Assessment





International Product Service



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Fire monitoring and Assessment in Australia

From Feb. 9 to the mid of March in 2009, NDRCC provided more than 126 scenes of HJ satellite images and 24 products to Australia government to support their emergency relief. Australia government expressed great appreciation for the support effect.

Fires Assessment in Southeast Australia Using HJ-1 Satellite Data(Feb. 16/23)



Mr. Yang Supan
National Disaster Reduction Center of China
Beijing 100051
People's Republic of China

Dear Mr. Yang,

I am writing to you to thank you, and through you, to thank other Chinese governments, for your wonderful support for fire-fighting Victoria, Australia, by providing HJ and other satellite imagery and timely information about the extent of the disaster from the Victorians perspective on the natural environment is critical. The assistance of your China is increasing your satellite fire detection and loss the Australia is giving the Australia-China friendship. "A friend is a treasure that the Chinese Ministry of Foreign Affairs, Ministry of Education, Ministry of Civil Affairs, and Chinese Academy of Sciences the very beginning of this highly successful cooperation coordinated by the Australia in order to respond quickly to our urgent request.

During the disaster relief, NDRCC had the honor to receive the Hon. Mr. Zhang Jinsan's visit on 13 February and the visit of Youxi He, Minister of Science and Technology of China on 2 March. Our two visits were a good opportunity of exchange and related results to VICT.

It is a great relief that Victoria is now under the influence of cold weather. Fire danger indexes necessary have been contained. I trust we look forward to collaborating with you further in disaster relief.

Yours sincerely,

Mr. Yang Supan
Chief Executive Officer

Dr. Liu Hong-jian, Ambassador of the People's Republic of China
Professor Guo Jianping, Deputy Secretary-General, China

NDRCC National Disaster Reduction Center of China
100051 Beijing, P.R. China
Tel: 86-10-64573000

海地地震灾区遥感监测 (3) Haiti Earthquake monitoring using HJ-1 of China



卫星型号(Satellite): HJ-1B
获取时间(Data Acquired): 14/01/2010
投影(Projection): UTM

传感器类型(Sensor): CCD
分辨率(Spatial resolution): 30m
椭球体(spheroid): WGS84



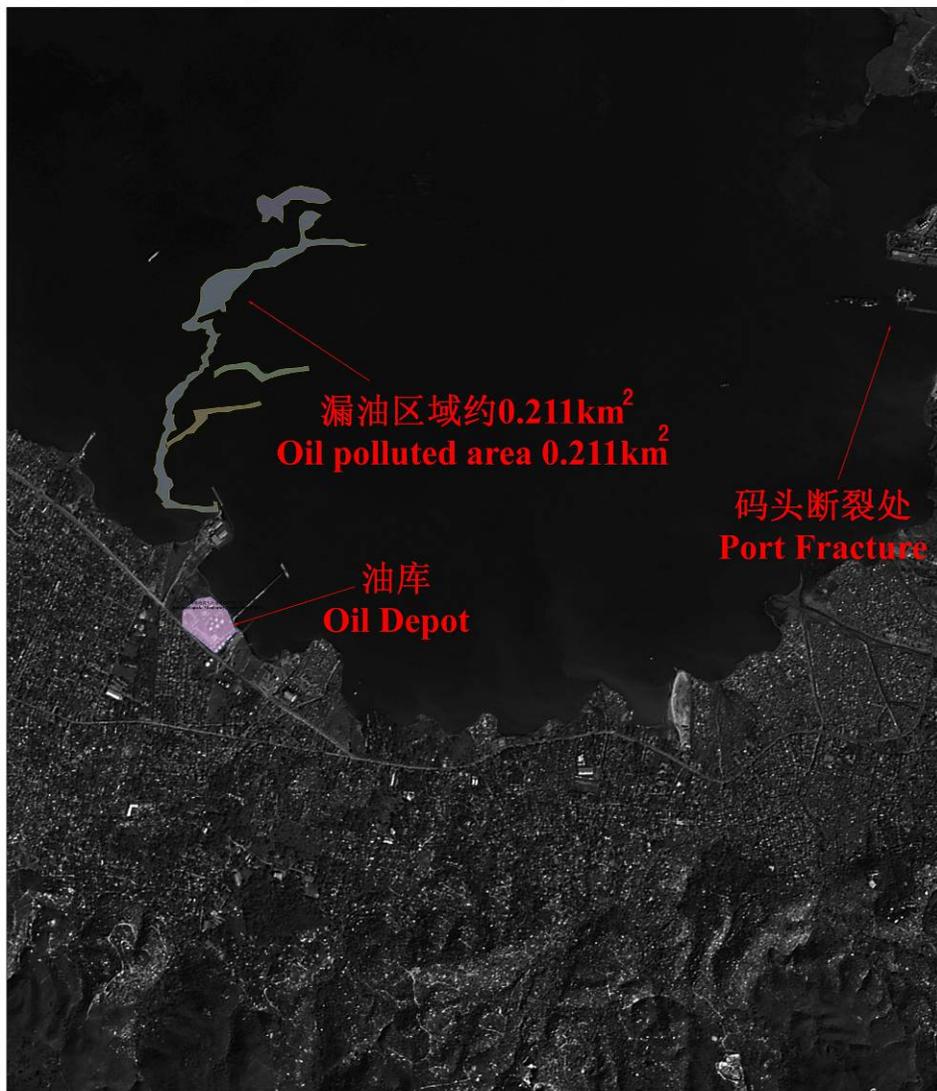
E_mail: remotesensing@ndrcc.gov.cn
Phone: (86-10) 8354 5980



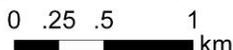
国家减灾委员会办公室
Office of National Committee for Disaster Reduction
民政部国家减灾中心 / 民政部卫星减灾应用中心
National Disaster Reduction Center of China

海地地震灾区遥感监测图 (1)

Haiti Earthquake Monitoring Using China-DMC+4



卫星型号(Satellite): China - DMC+4
 传感器类型(Sensor): PAN
 获取时间(Data Acquired): 13/01/2010
 分辨率(Spatial resolution): 4m
 投影(Projection): UTM
 椭球体(spheroid): WGS84

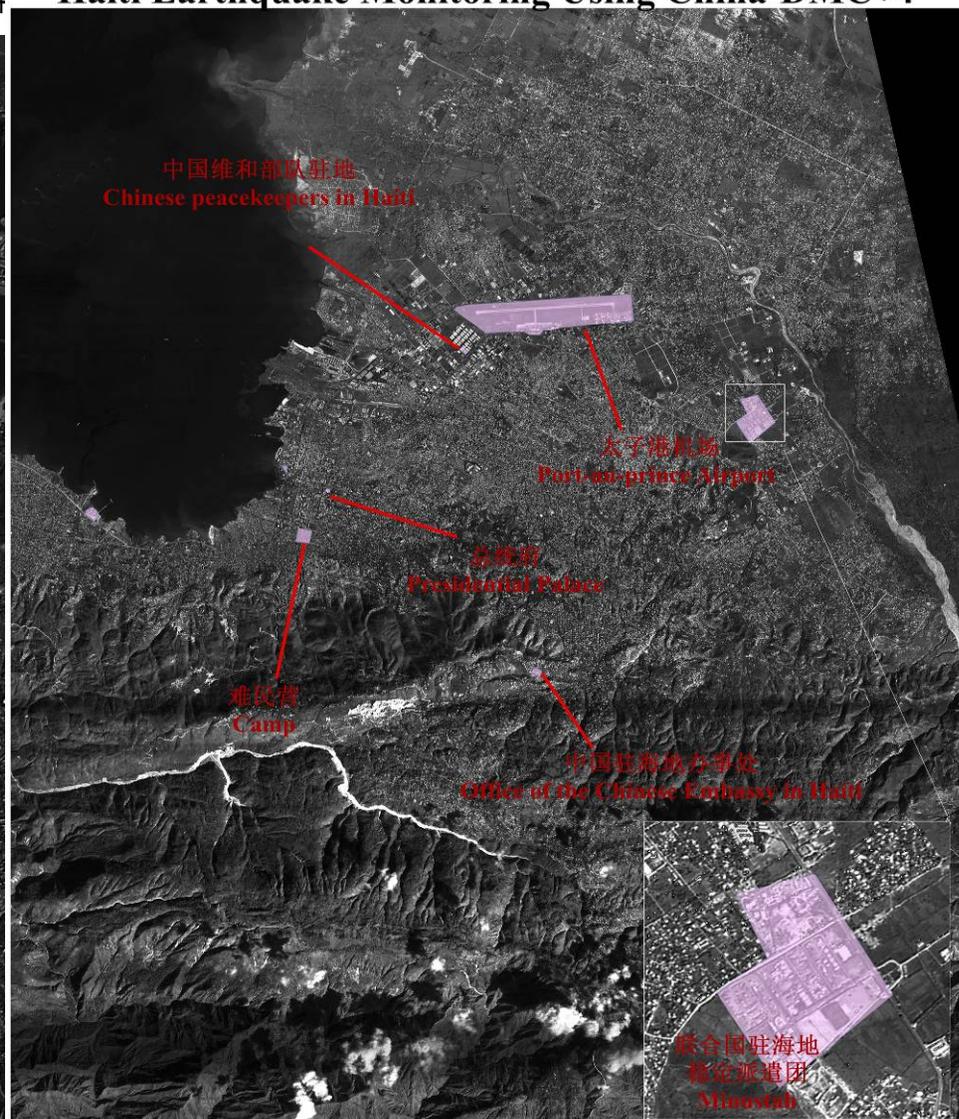


E_mail: remotesensing@ndrcc.gov.cn
 Phone: (86-10) 8354 5980



海地地震灾区遥感监测图 (2)

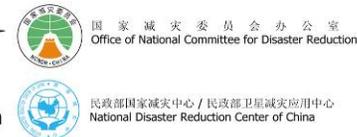
Haiti Earthquake Monitoring Using China-DMC+4



卫星型号(Satellite): China - DMC+4
 传感器类型(Sensor): PAN
 获取时间(Data Acquired): 13/01/2010
 分辨率(Spatial resolution): 4m
 投影(Projection): UTM
 椭球体(spheroid): WGS84



E_mail: remotesensing@ndrcc.gov.cn
 Phone: (86-10) 8354 5980



谢谢
Thanks

