



Wetland Resource Surveys in China

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Outline

01

First Nationwide Wetland Resources Survey

02

Second Nationwide Wetland Resources Survey

03

Third Land Resources Survey

1、 The First Nationwide Wetland Resources Survey

- **Organized by:** The former Ministry of Forestry (then National Forestry Administration)
- **Duration:** 1995-2003
- **Scope of Survey:** 31 provinces (autonomous regions and municipalities directly under the central government), exclusive of Hongkong, Macau and Taiwan.
- **Minimum size of Wetland Investigated:** 100 hectares or above
- **Key Survey Elements:** Wetland type, coverage, distribution and main associated fauna and flora
- **Survey Methodology:** data collection from field investigations plus analytical information interpreted from remote sensing images for certain regions
- **Survey Results:** The wetlands across China were classified into 28 types in five major categories, covering a total area of 38.4855 million hectares (rice paddy fields excluded). Of which, natural wetlands encompassed 36.2005 million hectares, accounting for 3.77 per cent of China's terrestrial landmass.

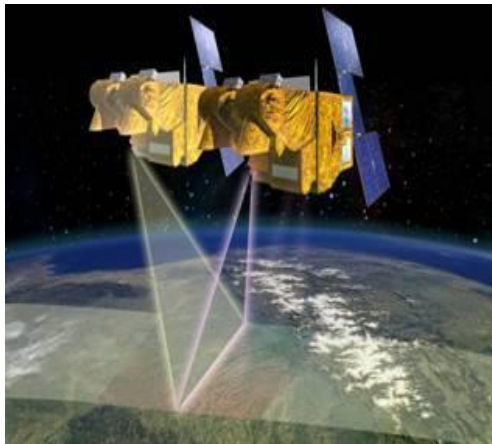
2、 The Second Nationwide Wetland Resource Survey

- **Organized by:** the former National Forestry Administration
- **Duration:** 2009-2013
- **Scope of Survey:** 31 provinces (autonomous regions and municipalities directly under the central government), exclusive of Hongkong, Macau and Taiwan
- **Minimum size of Wetlands Surveyed:** eight hectares or above
- **Survey Results:** A total of 53.6026 million hectares of wetlands were recorded in China, including a total of 182,000 hectares distributed in Hongkong, Macau and Taiwan. The wetland percentage in China then was 5.58%.

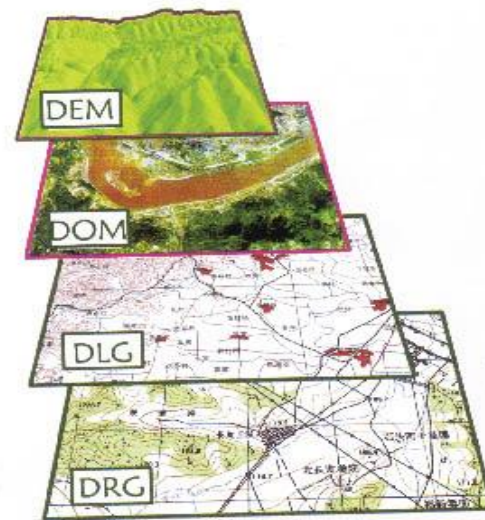
The system of wetland classification used in the second nationwide wetland resource survey was in compliance with that defined by the Ramsar Convention. China's wetlands were grouped into 34 types in five major categories:



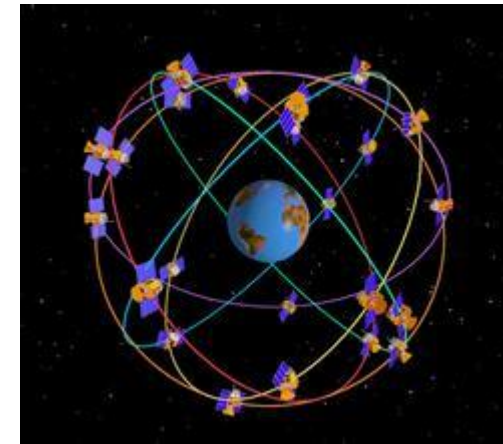
The methodology adopted in the second national wetland survey was a combination of preliminary wetland identification and delineation with the **3S** technology (Remote Sensing-**RS**, Geographical Information System-**GIS**, and Global Position System-**GPS**) and calibrated and verified with on-site measurement data.



Remote Sensing-**RS**



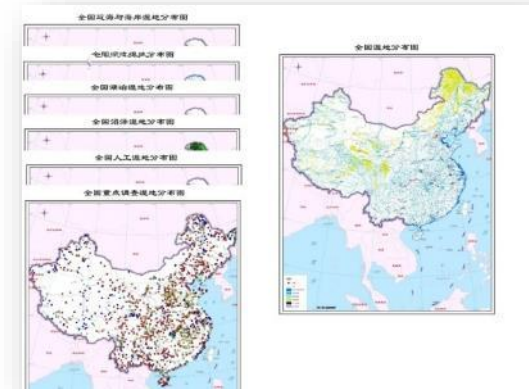
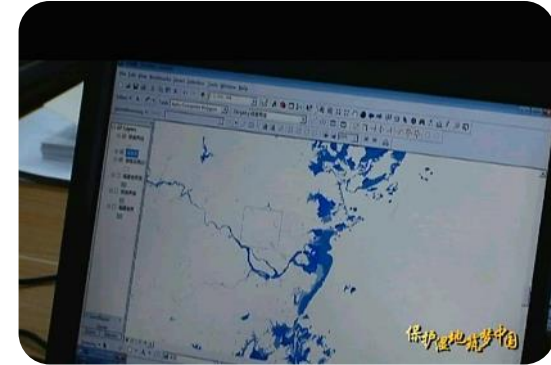
Geographical Information
System-**GIS**



Global Position System-**GPS**



**Provinces launched the survey after necessary training,
and then carried out the survey in the field**



Sum-up of the raw data from all provinces

Key Findings

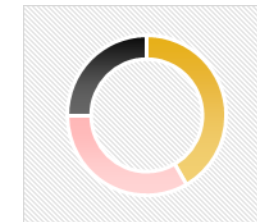
- 01** | Collected the data on the size and location of each wetland site that was eight hectares or above by complying with the Technical Specifications for China's National Wetland Survey
- 02** | Understood the dynamic trends, over the recent decade, of the coverage and ecological health status of China's wetland sites of all types (100 hectares or above in size)
- 03** | Understood the status quo of the Ramsar Sites, wetlands of national importance, nature reserves, and wetland parks in terms of their wild fauna and flora, aquatic environment parameters, protection status and governance type, socio-economic background, types of wetland use, and threats.
- 04** | Established a stable technical team for wetland investigation
- 05** | Developed relatively comprehensive technical specifications on wetland resource investigation and monitoring

Key Findings (cont.)

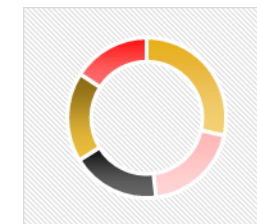
Based on the data from the first two nationwide wetland resource surveys, key driving factors that had threatened wetland ecological health and their weights were analyzed and identified as below:

- **First survey**—pollution (39.11%), wetland reclamation (31.11%), and illegal hunting (23.56%)
- **Second survey**—pollution (38.22%), overexploitation of aquatic resources from wetlands (25.78%), wetland reclamation (24.44%), invasion of alien species (24.00%) and wetland encroachment by construction (20.89%)

The analysis indicated that **China's wetlands were challenged with more ecological stressors, more intensive occurrence and stronger influence.**

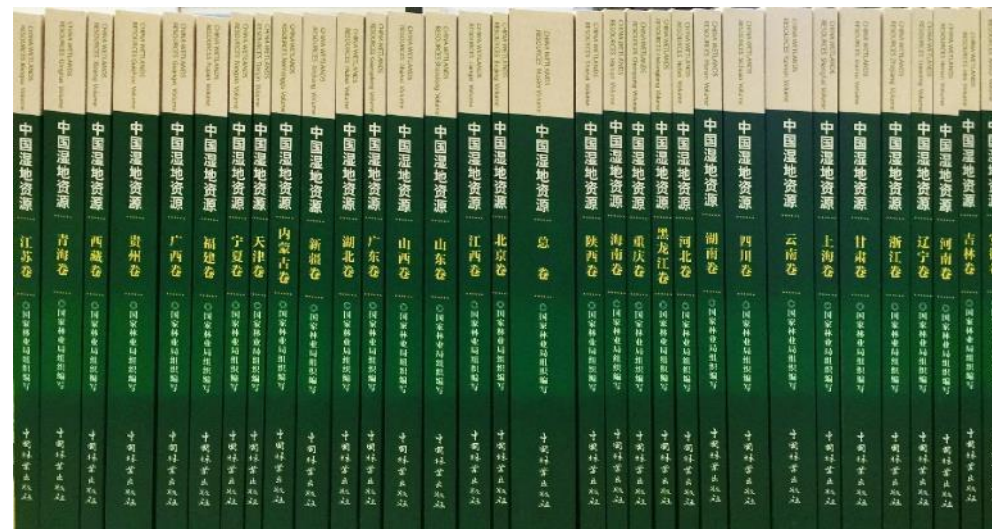


Top three ecological stressors



Top five ecological stressors

The second survey also resulted in a series of book products about China's Wetland Resources, contributing to filling in the data gaps with important basic information on wetlands.



The second survey made it possible for China to establish its Wetland Resource Database, Wetland Resources Management Information System and Wetland Resource Digital Atlas.



3、 The Third Land Resource Survey—Wetlands

- **Organized by:** the Ministry of Natural Resources
- **Duration:** 2018-2021
- **Scope of Survey:** Land above zero meter ocean depth contour in 31 provinces (autonomous regions and municipalities directly under the central government), exclusive of Hongkong, Macau and Taiwan
- **Minimum patch area of wetland survey:** 600 square meters
- **Survey Elements:** Type, size and location of wetland
- **Survey Methodology:** Satellite sensing images with a resolution less than one meter was used as the first layer information and further enriched with extra information collected through the application of new techniques including mobile internet, cloud computing, and drones.
- **Survey Results:** The survey concluded that there was a total of 56.35 million hectares of wetland in China including wetland types (23.6468 million hectares), inland surface waters (28.5857 million hectares), shallow sea waters (4.1168 million hectares).

Wetland types

Area of wetland types is 23.6438 million hectares. As a new land type included into the third national land resource survey, it includes seven subtypes as follows:

- Mangroves: 27,100 hectares (0.11%)
- Forest swamps: 2.2076 million hectares (9.34%)
- Shrub swamps: 754,800 hectares (3.19%)
- Marshes: 11.1391 million hectares (47.11 %)
- Coastal intertidal flats: 1.5097 million hectares (6.38%)
- Inland tidal flats: 6.0721 million hectares (25.68%)
- Other swamps: 1.9364 million hectares (8.19%)

Inland Surface Waters

Inland surface waters with five subtypes covers 28.5857 million hectares in area.

- Riverine waters: 8.8298 million hectares (30.89%)
- Lacustrine waters: 8.2799 million hectares (28.97%)
- Reservoir waters: 3.3935 million hectares (11.87%)
- Pond waters: 4.5654 million hectares (15.97%)
- Ditch and channel waters: 3.5171 million hectares (12.30%)

Shallow Sea Waters

- Shallow sea waters extends 4.1168 million hectares across China.



Thanks!