



# Ecological Conservation Redlines ( ECRs ) in China

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**What** are ECRs?

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**Why** delineate ECRs?

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**How to delineate** ECRs?

5

**How to manage** ECRs?





# 1. What are ECRs? —“concept”

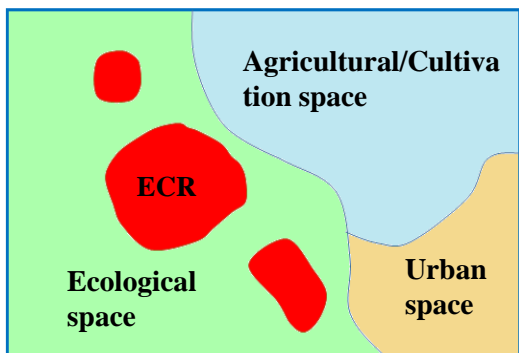
ECRs refer to the area with special important ecological functions and must be strictly protected compulsively within the scope of ecological space. They are the bottom lines and lifelines for safeguarding and maintaining national ecological security. They usually include important eco-function regions with important water conservation, biodiversity conservation, wind-proof and sand-fixing function, and ecological fragile areas such as soil erosion, land desertification, rocky desertification, salinization, etc.

- Ecological Space (生态空间)
- Special and important ecological functions (具有特殊重要生态功能)
- Mandatory and strict protection (实施严格保护)
- Baseline and lifeline (底线和生命线)



# 1. What are ECRs? —“Aims”

- ❖ Not a new type of Protected Areas (PAs), but a comprehensive ecological space with integrative meaning
- ❖ ECRs have priority in spatial planning process
- ❖ Three parts are included



目标  
Aims

生态保护  
红线

ECRs

支撑经济  
可持续发展  
Supporting sustainable  
economic development  
提供  
生态服务  
Ecological products  
provision

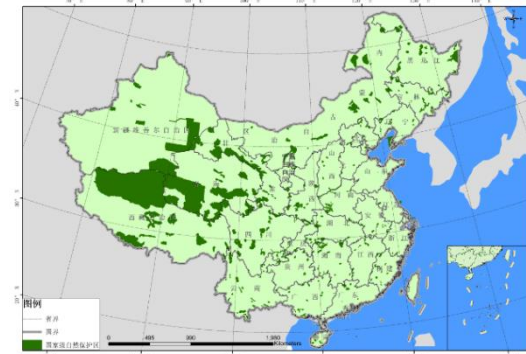
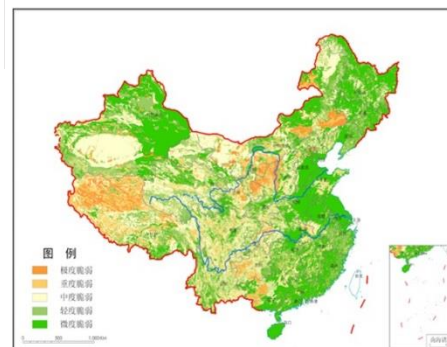
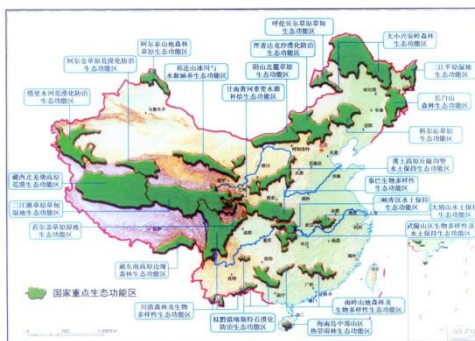
人居环境  
保障  
Ensuring human  
settlement safe  
减缓灾害  
应对全球变化  
Ecological disasters  
reduction  
Respond to global  
changes

生物资源  
可持续利用  
Sustainable utilization  
of biological resources  
重要生物  
和景观资源保护  
Biodiversity and  
landscape protection

重要生态功能区  
important ecological  
function area

生态脆弱区敏感区  
ecological sensitive  
and fragile area

关键物种生境与生态系统  
habitats of key species  
and ecosystems





## 2. Why delineate ECRs?

### 1 The Proposal of ECRs: New Ecological Conservation Solution in China

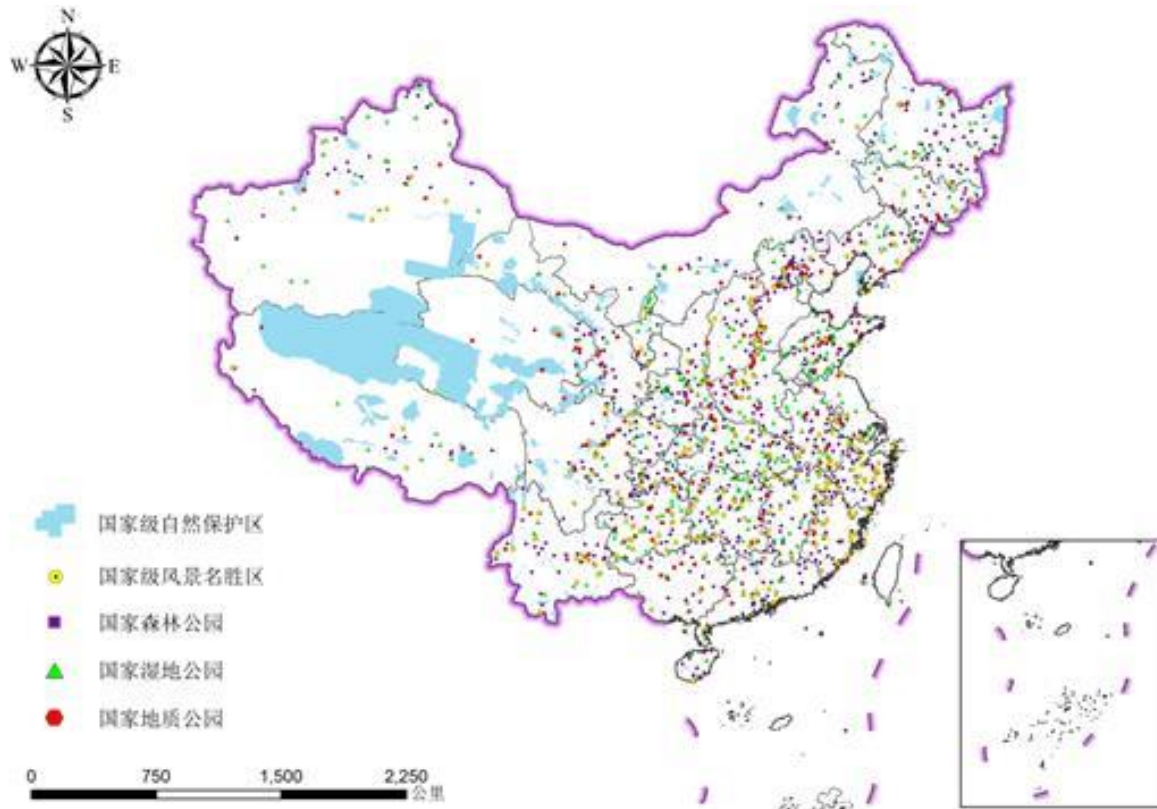
- ❖ Fragile ecological environment
- ❖ Per capita resources are scarce and of low quality
- ❖ Serious ecological degradation in partial area
- ❖ Overcrowding of ecological space by highly rapid industrialization/urbanization
- ❖ Various types of Protected Areas (PAs) in China are not well-managed

**As an important strategic concept, ECRs were put forward in order to better protect the ecological environment and ecological security in China.**

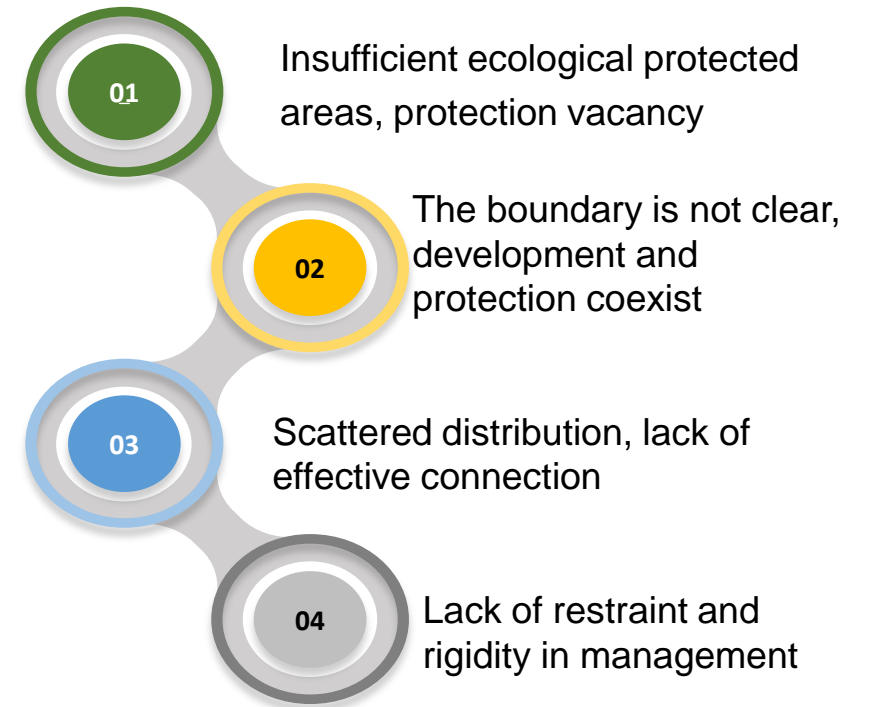


## 2. Why delineate ECRs?

❖ Various types of Protected Areas (PAs) in China are not well-managed



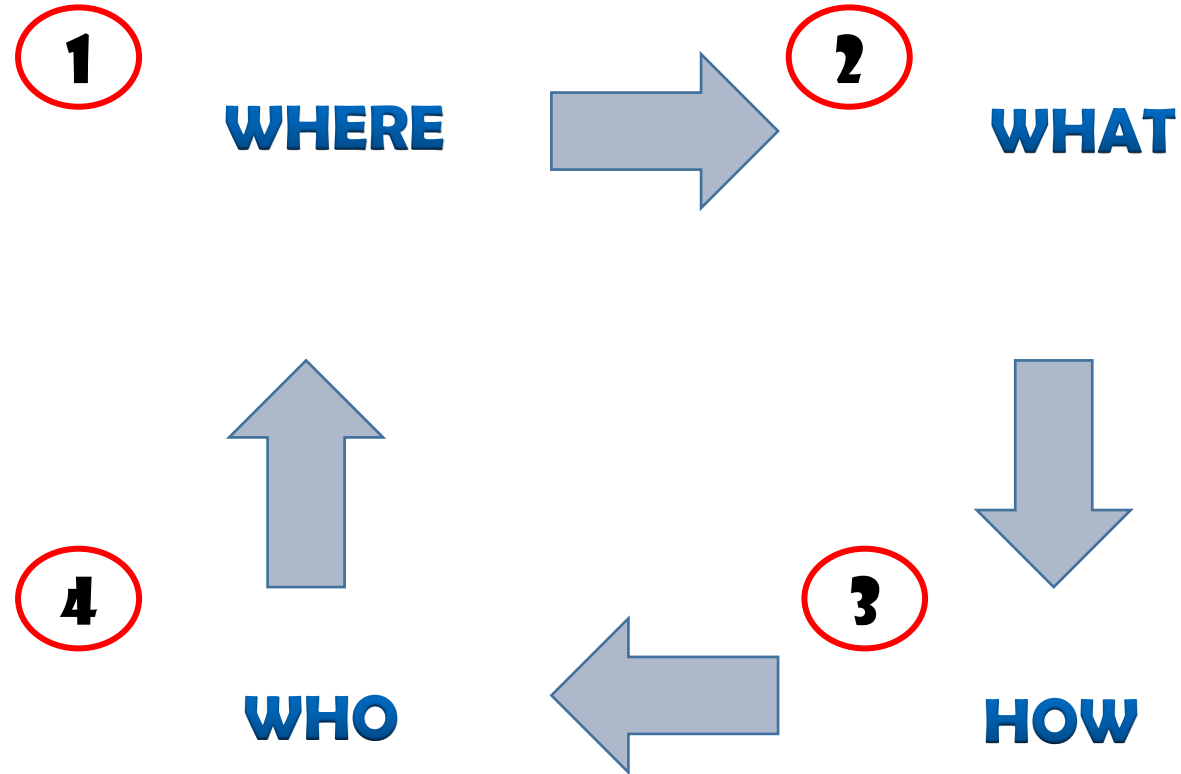
**Nature Reserves in China (2018)**



The existing protected land system is insufficient to maintain ecological security, and fails to form an ecological pattern to ensure national ecological security and sustainable socio-economic development.

It is urgent to establish a new ecological protection system 尚未形成有效格局，亟需建立新的生态保护地体系

### 3. Where to be delineated?



➤ “Guidelines for the delineation of red lines for ecological protection” (issued by 2017, MEP)



### 3. Where to be delineated?

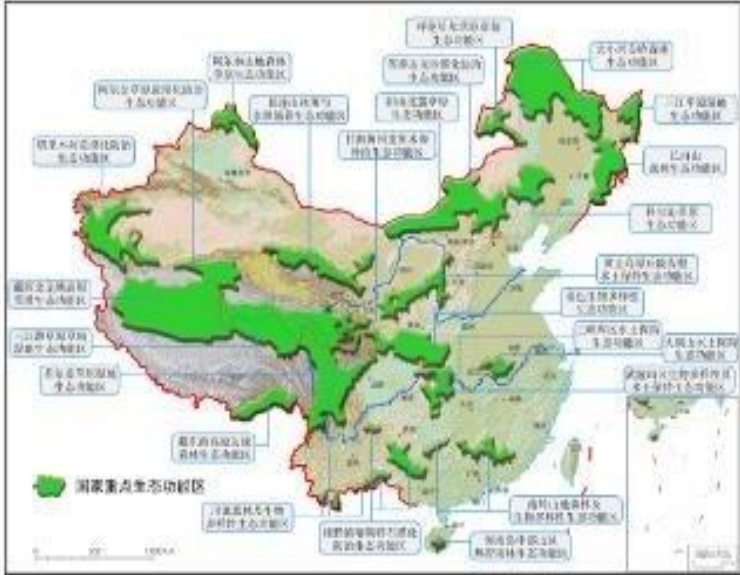
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Where is the scope for ECRs delineation?

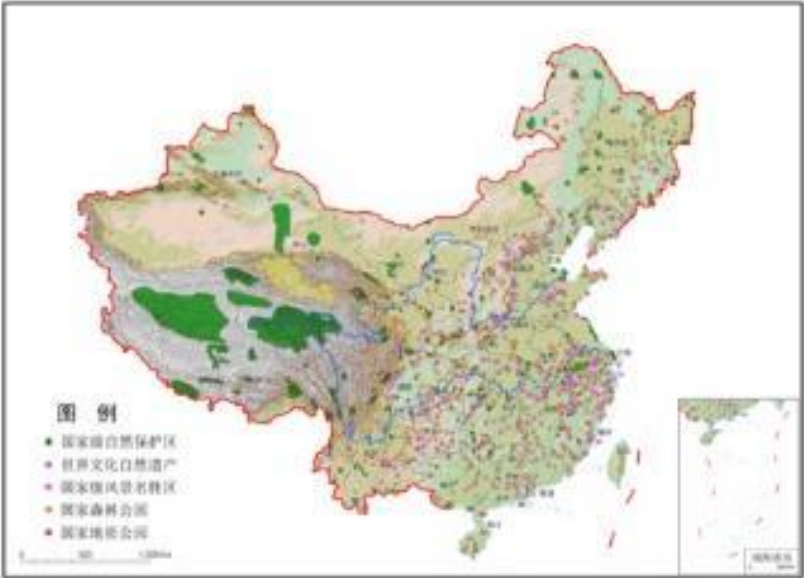
在保障国家生态安全的重点区域划定生态保护红线



Two barriers and  
three zones



One region



Many points

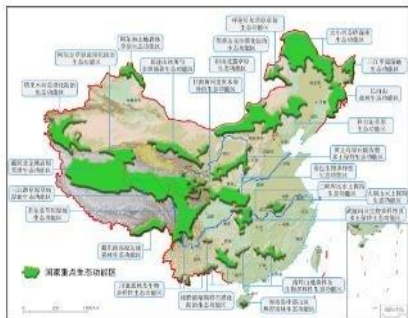
— 《National main functional region planning》 , 2011



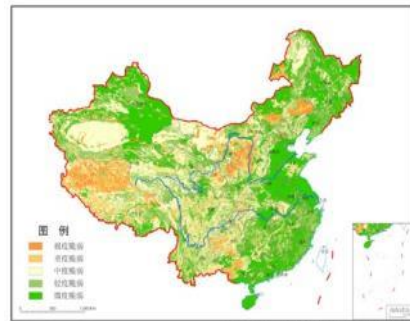
### 3. Where to be delineated?

#### 2 What is the object for ECRs delineation?

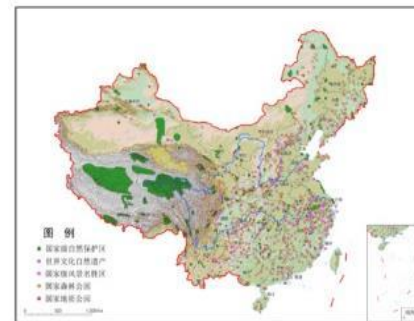
◆ Areas with **crucial ecological functions**



◆ Areas with **high ecological sensitivity and vulnerability**



◆ **Prohibited exploration areas** at national and Provincial level



◆ Other areas **necessary for strict protection**:

- ✓ habitat for species with very small populations
- ✓ Glacier
- ✓ Snow Mountain .....



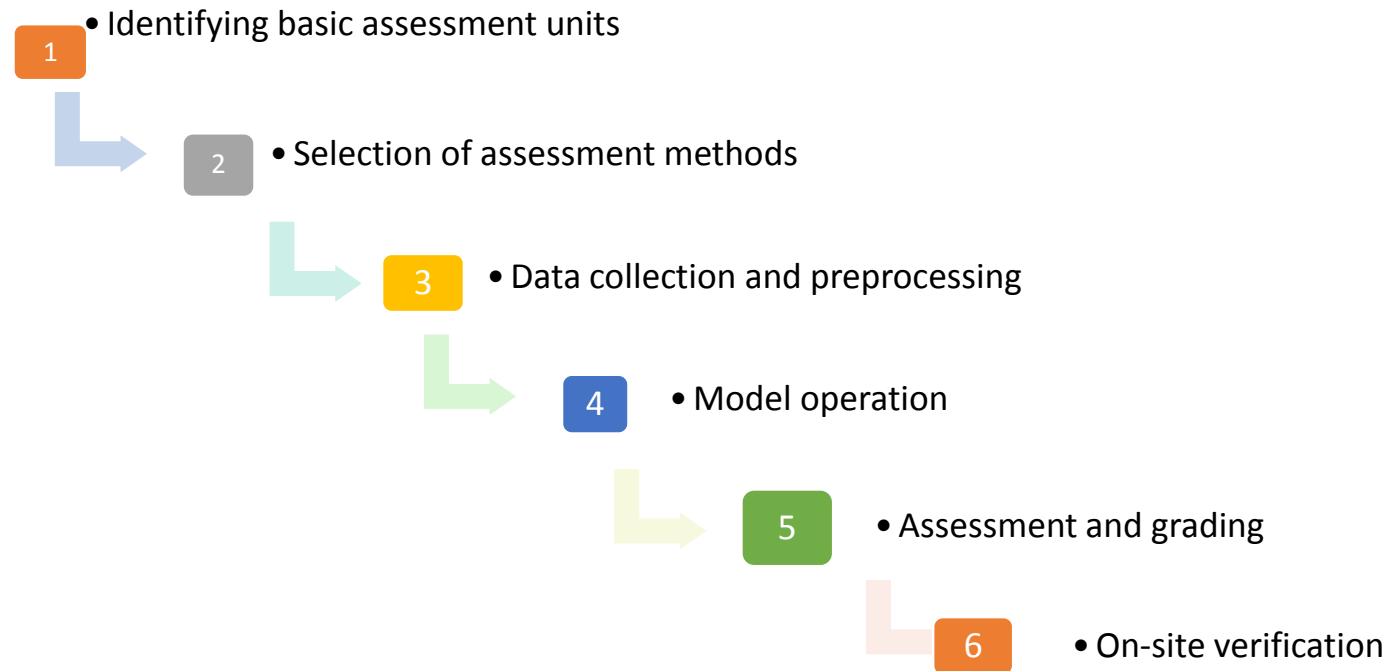
## 4. How to delineate?

### 1 How is the delineation process?-----

Carry out scientific assessment

Within the scope of land space, the importance assessment of ecological function and the sensitivity assessment of ecological environment should be carried out to determine the most important and vulnerable areas of ecological functions such as water conservation, biodiversity conservation, soil and water conservation, wind prevention and sand fixation, and to incorporate them into the ECRs.

Main assessment step includes:





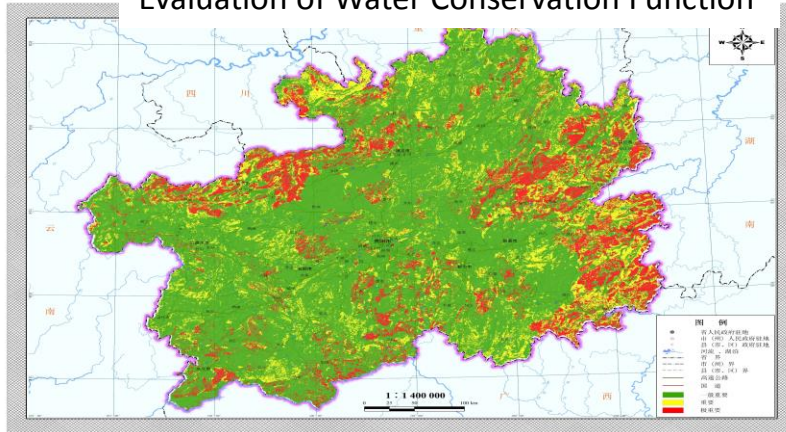
## 4. How to delineate?

### 1 How is the delineation process?-----

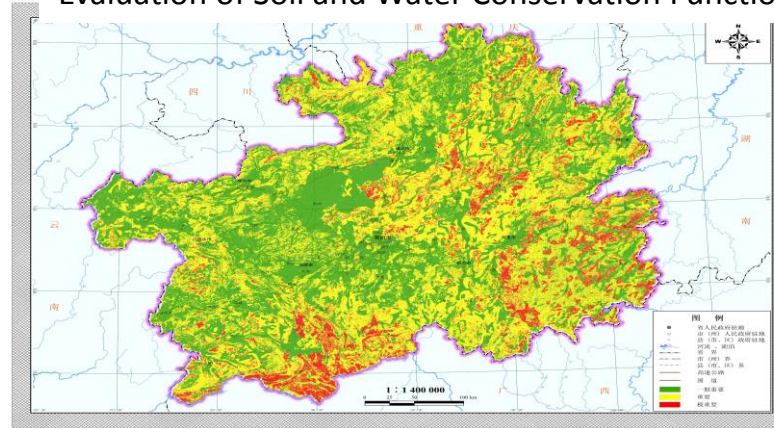
Carry out scientific assessment

#### Scientific assessment results

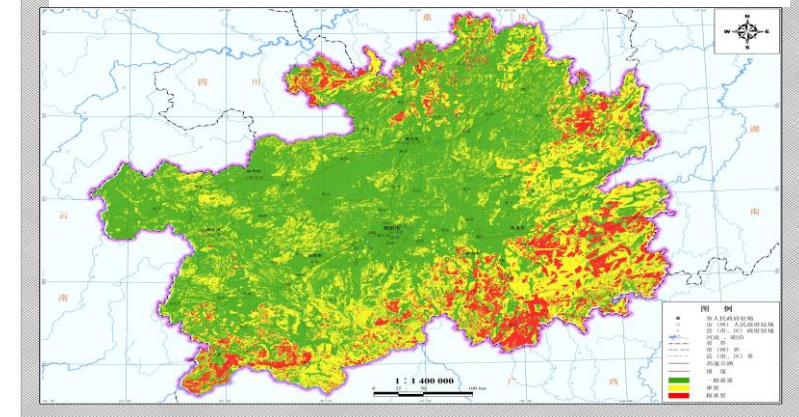
Evaluation of Water Conservation Function



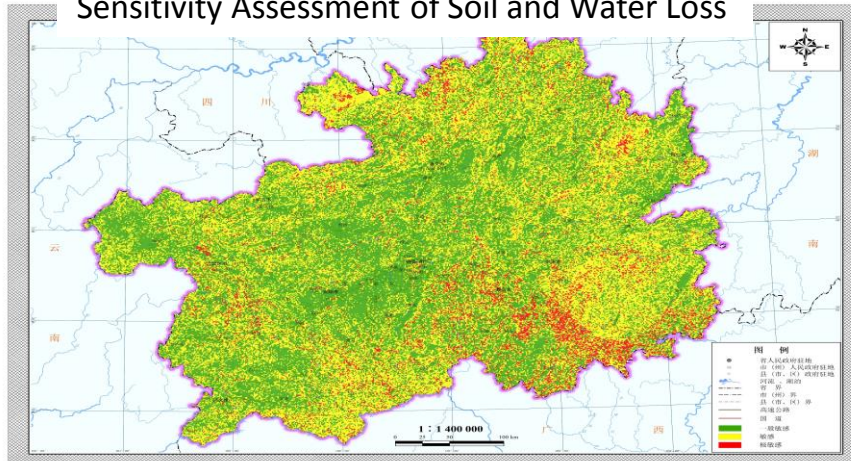
Evaluation of Soil and Water Conservation Function



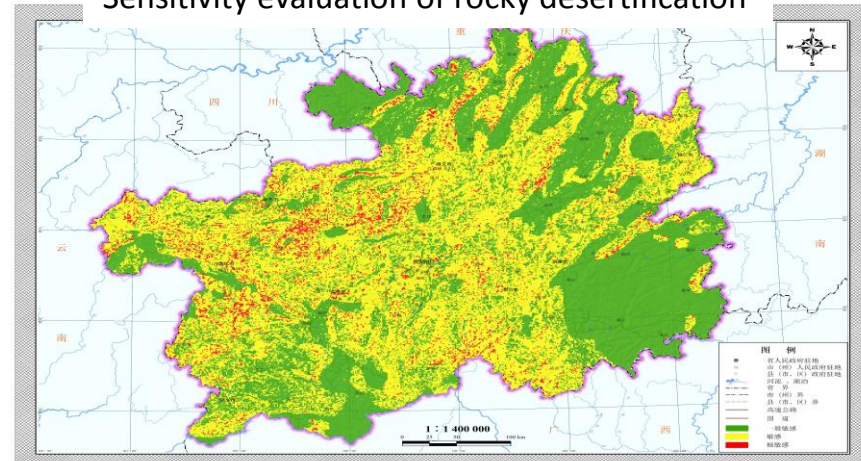
Evaluation of Biodiversity Maintenance Function



Sensitivity Assessment of Soil and Water Loss



Sensitivity evaluation of rocky desertification



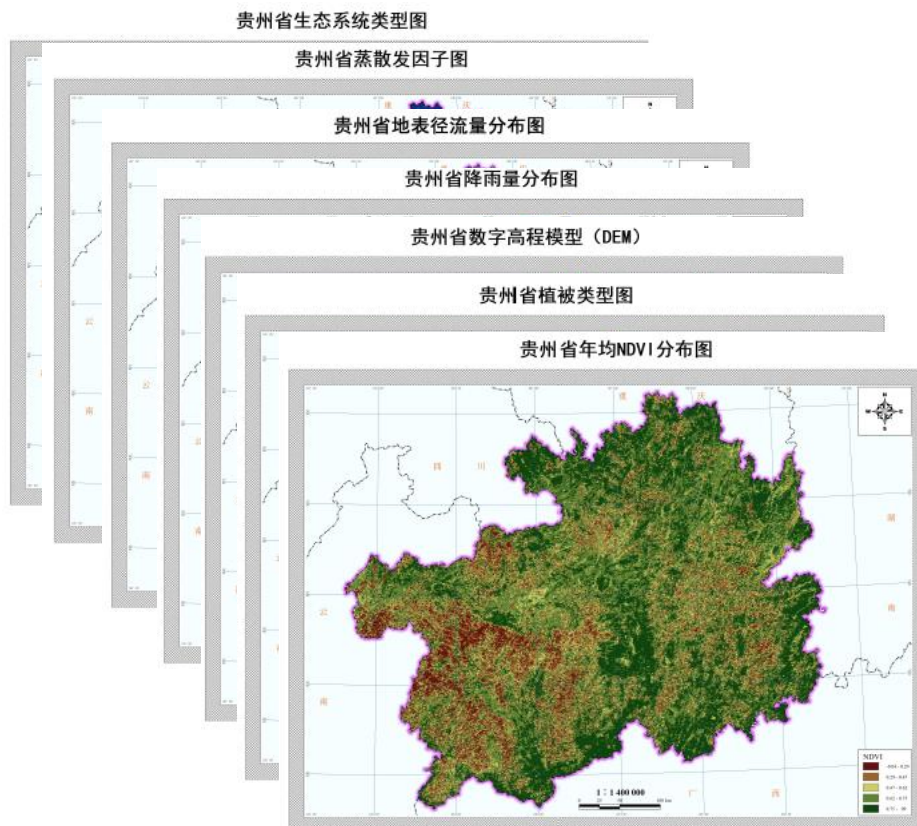


## 4. How to delineate?

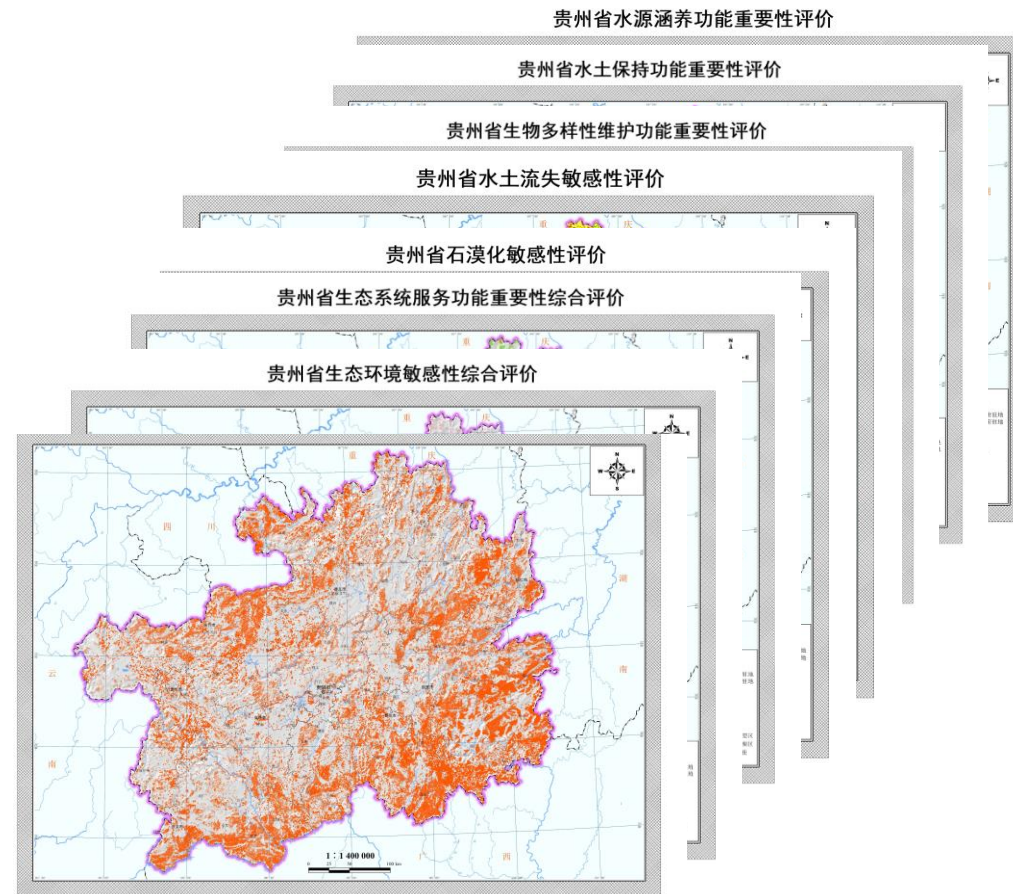
### 1 How is the delineation process?-----

Carry out scientific assessment

Using ecological datas



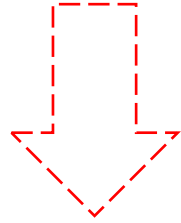
Overlay all the assessment results



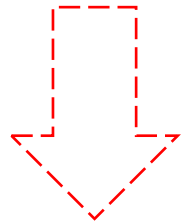
## 4. How to delineate?

### 2 How is the delineation process?

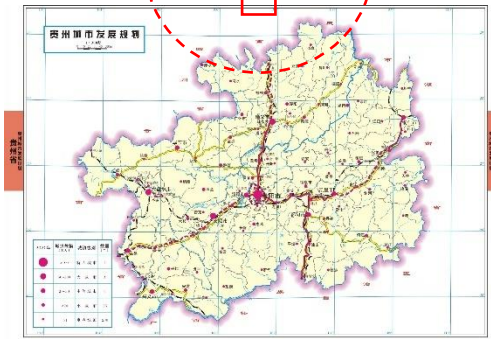
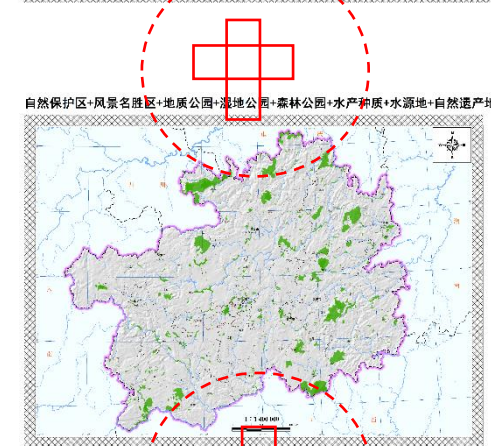
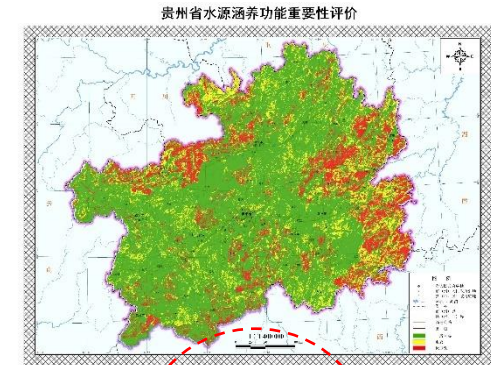
Carry out scientific assessment



Overlay of existing protected areas: covering all important protected areas



Coordination of major relative plans: reserving development space





## 4. How to delineate?

### 3 How is the delineation process?

—“Five connections”

departments

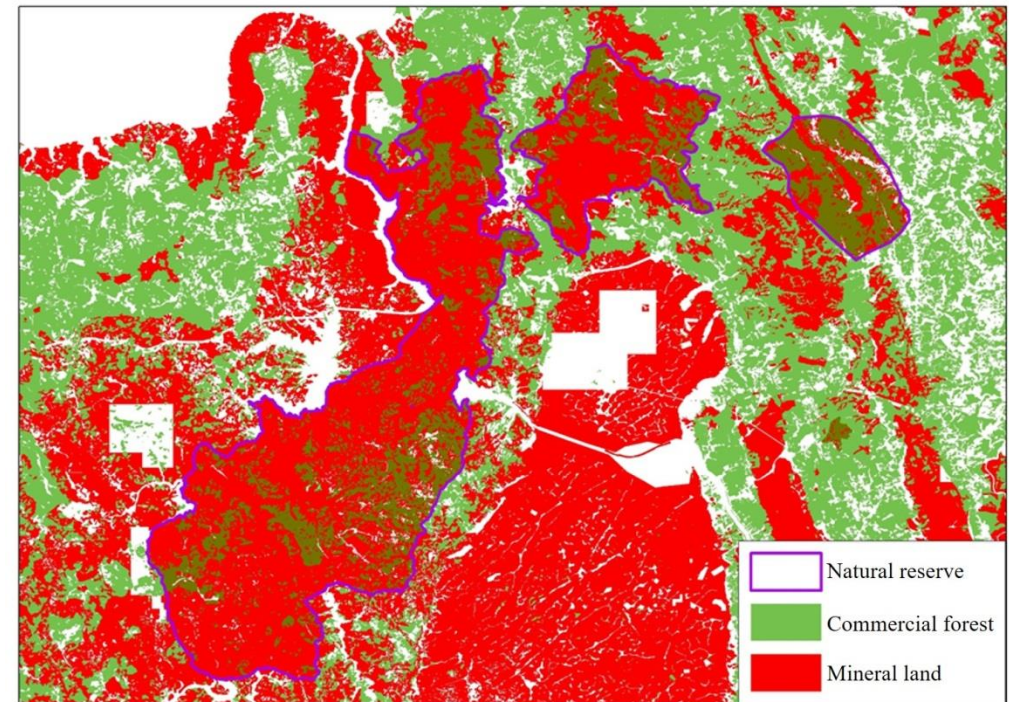
plans

counties

Cross-regional

Sea and land

Using 1:10000 land use data or general survey data of geographical conditions or high-precision remote sensing image with spatial resolution no less than 5m as the base map, connect the boundary of ECRs with various planning, zoning spatial boundaries and land use status, comprehensively analyze the relationship between development, construction and ecological protection, thus reasonably determining the development and protection boundary in combination with actual economic and social development.



Coordination of major infrastructure development



## 4. How to delineate?

### ④ Who is responsible for delineation?

Ensure key areas related to national and regional ecological security involved in ECRs

top - down

Focus on ecosystem integrity and management feasibility

Nation-level

Province-level

County-level

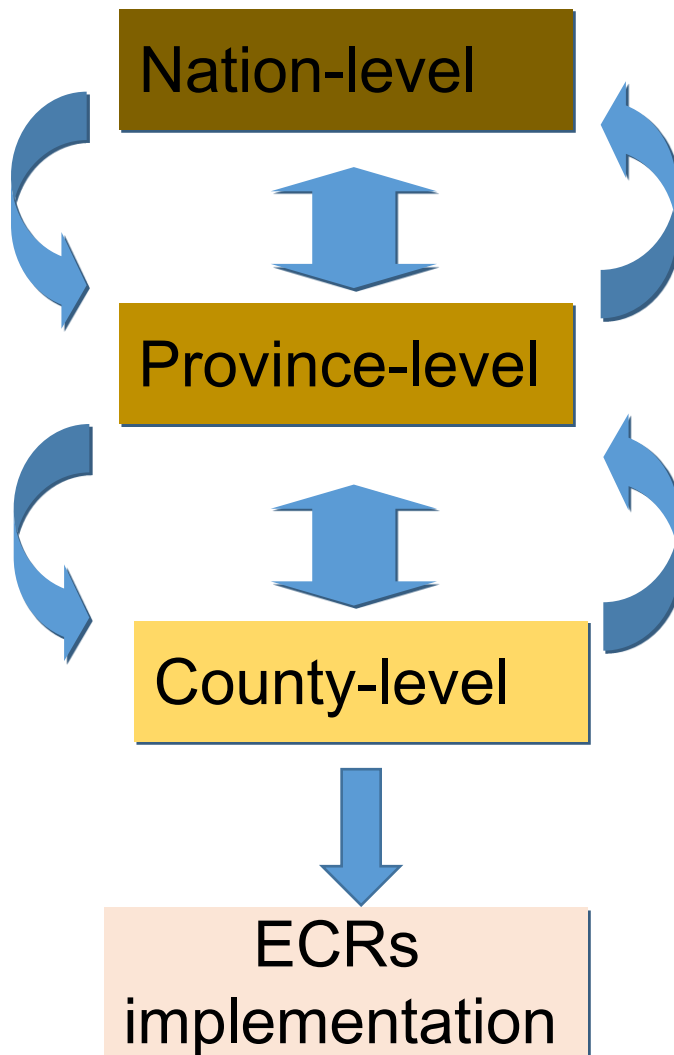
ECRs  
implementation

上下结合

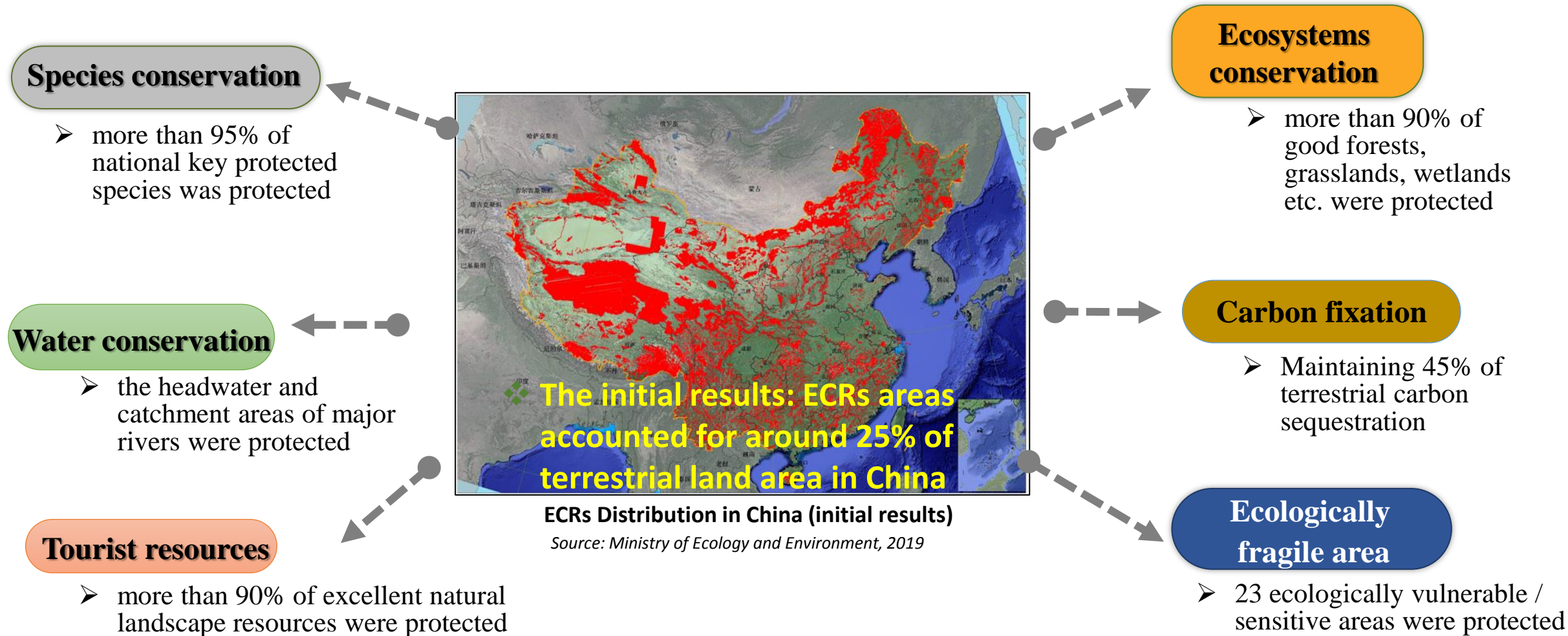
Keep an open mind to local opinions and coordinate with relevant plans

Bottom - up

Land boundary at high level of resolution at county level



# Current result and protection effectiveness of ECRs in China



**ECR was called "another lifeline after the cultivated land red line"**

## 5. How to manage ?

### Management Principles for ECRs in China

- (1) ECRs should be **managed according to the requirements of prohibited development areas**
- (2) All kinds of development activities that do not conform to the functional orientation and changes of uses are strictly prohibited
- (3) Area for ECRs: Only increase, not decrease; except for major National Infrastructure and livelihood security projects
- (4) Priority must be given to ECRs in other development activities

- Manage according to the requirements of prohibited development areas

**Strict Control**

- Ecological Priority and Ecological Equity

**Ecological Compensation**

- Lucid waters and lush mountains are invaluable assets

**Rational Utilization**



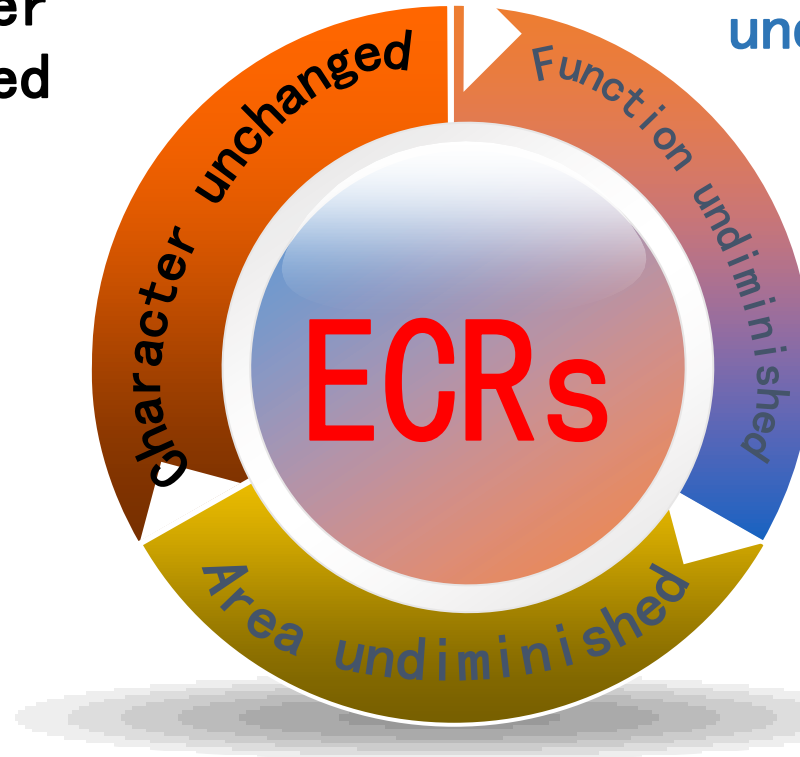
## 5. How to manage ? “三不”原则

**Character  
unchanged**

The land usage and  
protected area within the  
red line remain unchanged

**Function  
undiminished**

The ecological service  
function and ecological  
quality of ecological red line  
remain undiminished



**Area  
undiminished**

Ecological red line is the bottom  
line of ecological security and its  
area can only be increased

**Next, we will formulate  
regulations for ECRs.**

# The contribution of ECR

- ❑ China's creative practice of ECR contribute to the implementation of **SDGs**
  - ◆ particularly, **Goal 15** (Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss).
- ❑ As an effective **area-based conservation measure (ABCM)** implemented by China, ECR makes significant contribution to the implementation of **AT11**.
- ❑ As an **effective eco-zoning tool** based on scientific assessments, ECR provide a new way of thinking with respect to in-site conservation for other countries.

# ECRs and AT11

AT 11	ECRs			
	scope		How to delineate/manage	progress
at least 17% of terrestrial and inland water areas, and 10% of coastal and marine areas are conserved				ECRs covers about <b>25%</b> of the China's land area
areas of particular importance for biodiversity and ecosystem services conserved, ecologically representative	<b>Prohibited exploration areas</b>	<b>Existing protected areas</b> , including National Nature Reserves, Wetland Parks, Forest Parks, Drinking Water Sources, Scenic Spots, etc.	Overlay of existing <b>protected areas</b>	protect about <b>95%</b> of rare and endangered species and their habitats, <b>40%</b> of water conservation and flood regulation functions, <b>32 %</b> of windproof and sand-fixing functions, <b>45%</b> of carbon sequestration of above-ground vegetation .
	<b>Areas with crucial ecological functions</b>	water conservation, biodiversity conservation, soil and water conservation, wind break and sand fixation	scientific assessment on importance of ecological functions	
effectively and equitably managed			ECRs are managed by local governments through land use controlling to achieve <b>character unchanged, function undiminished, area undiminished.</b>	More strict than OECMs
well-connected and integrated into the wider landscapes and seascapes			Based on assessment and on-site verification, with the help of GIS, scattered points are integrated to a unified and connected area.	Well-connected ECRs
——	<b>Areas with ecological sensitivity and vulnerability</b>	Soil erosion, land desertification, stony desertification	scientific assessment on sensitivity of ecological environment	



Thanks for your attention!

