Ecological Conservation Redlines (ECRs) in China

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1. **What** are ECRs?
2. **Why** delineate ECRs?
3. **Where** to delineate ECRs?
4. **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?

- 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

“Aims”

- **Aims**
  - Supporting sustainable economic development
  - Ensuring human settlement safe
  - Respond to global changes

- **目标**
  - 生态服务
  - 生态保护
  - 红线

- **生态保护红线**
  - 重要生态功能区
  - 生态脆弱区敏感区
  - 关键物种生境与生态系统

- **ECRs**
  - 支撑经济可持续发展
  - 重要生物和景观资源保护
  - 生物资源可持续利用

- **Ecological products provision**
  - 生态服务
  - 生态脆弱区敏感区
  - 生物资源可持续利用

- **生态保护**
  - 重要生态功能区
  - 生态脆弱区敏感区
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- **Ecological disasters reduction**
  - 应对全球变化
  - 生物资源可持续利用

- **Respond to global changes**
  - 生态服务
  - 生态脆弱区敏感区
  - 关键物种生境与生态系统

- **Ensure human settlement safe**
  - 重要生态功能区
  - 生态脆弱区敏感区

- **Sustainable utilization of biological resources**
  - 生物资源可持续利用
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2. Why delineate ECRs?

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.
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.

2. Why delineate ECRs?

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

- Insufficient ecological protected areas, protection vacancy
- The boundary is not clear, development and protection coexist
- Scattered distribution, lack of effective connection
- Lack of restraint and rigidity in management
3. Where to be delineated?

1. WHERE

2. WHAT

3. HOW

4. WHO

“Guidelines for the delineation of red lines for ecological protection” (issued by 2017, MEP)
3. Where to be delineated?

1. 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 ……
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:**

1. Identifying basic assessment units
2. Selection of assessment methods
3. Data collection and preprocessing
4. Model operation
5. Assessment and grading
6. On-site verification

**How is the delineation process?**

Carry out scientific assessment
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?

Using ecological data

Overlay all the assessment results

- Overlay all the assessment results
- Carry out scientific assessment

- Using ecological data
- Overlay all the assessment results
4. How to delineate?

2. How is the delineation process?

1. Carry out scientific assessment

2. Overlay of existing protected areas: covering all important protected areas

3. Coordination of major relative plans: reserving development space
4. How to delineate?

How is the delineation process?

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?

Who is responsible for delineation?

- **Nation-level**
  - Keep an open mind to local opinions and coordinate with relevant plans

- **Province-level**
  - Land boundary at high level of resolution at county level
  - Focus on ecosystem integrity and management feasibility

- **County-level**
  - Top - down
  - Bottom - up

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

上下结合
The initial results: ECRs areas accounted for around 25% of terrestrial land area in China

Species conservation
- more than 95% of national key protected species was protected

Water conservation
- the headwater and catchment areas of major rivers were protected

Tourist resources
- more than 90% of excellent natural landscape resources were protected

Ecosystems conservation
- more than 90% of good forests, grasslands, wetlands etc. were protected

Carbon fixation
- Maintaining 45% of terrestrial carbon sequestration

Ecologically fragile area
- 23 ecologically vulnerable / sensitive areas were protected

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
- Ecological Priority and Ecological Equity
- Lucid waters and lush mountains are invaluable assets
5. How to manage？“三不”原则

Next, we will formulate regulations for ECRs.

- 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.
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

<table>
<thead>
<tr>
<th>AT 11</th>
<th>ECRs</th>
<th>progress</th>
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<tbody>
<tr>
<td>at least 17% of terrestrial and inland water areas, and 10% of coastal and marine areas are conserved</td>
<td><strong>Prohibited exploration areas</strong> Existing protected areas, including National Nature Reserves, Wetland Parks, Forest Parks, Drinking Water Sources, Scenic Spots, etc.</td>
<td>ECRs covers about <strong>25%</strong> of the China’s land area</td>
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<tr>
<td>areas of particular importance for biodiversity and ecosystem services conserved, ecologically representative</td>
<td><strong>Areas with crucial ecological functions</strong> water conservation, biodiversity conservation, soil and water conservation, wind break and sand fixation</td>
<td>protect about <strong>95%</strong> of rare and endangered species and their habitats, <strong>40%</strong> of water conservation and flood regulation functions, <strong>32 %</strong> of windproof and sand-fixing functions, <strong>45%</strong> of carbon sequestration of above-ground vegetation.</td>
</tr>
<tr>
<td>effectively and equitably managed</td>
<td><strong>Areas with ecological sensitivity and vulnerability</strong> Soil erosion, land desertification, stony desertification</td>
<td>ECRs are managed by local governments through land use controlling to achieve <strong>character unchanged, function undiminished, area undiminished.</strong> More strict than OECMs</td>
</tr>
<tr>
<td>well-connected and integrated into the wider landscapes and seascapes</td>
<td><strong>Areas with ecological sensitivity and vulnerability</strong> Soil erosion, land desertification, stony desertification</td>
<td>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</td>
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Thanks for your attention!