**BIODIVERSITY DESCRIPTION AND THREATS**

**Biodiversity**
- Cambodia is one of the most biodiverse countries in South East Asia
- 8,260 plant species – 10% Endemic
- 250 species of amphibian and reptile
- 874 fish species and over 500 bird species.
- 8 terrestrial Ecoregions
- Cambodia also has a rich marine environment -70 coral species, extensive seagrass beds and mangrove habitats.
- 45 Protected areas

**Threats**
- Pollution
- Agricultural activities
- Infrastructure development
- Climate Change and serve weather
Threats

- Cambodia faces the challenge of developing its economy and reducing poverty without ravaging its unique natural resources – a challenge made more difficult by restricted financial and technical capacity for sustainable environmental management.

- As a result, forest cover in Cambodia has fallen by 20% since 1990, while destructive fishing practices – such as the use of explosives and poison – together with unsustainable developments are wreaking havoc on its marine environment.
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<tr>
<th>Species</th>
<th>Conservation Target</th>
<th>Penalty Factor</th>
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<tbody>
<tr>
<td>Megophyrys Auralensis</td>
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<td>Hylarana faber</td>
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<td>Philautus cardamonus</td>
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<tr>
<td>Ophryophryne synoria</td>
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<td>Enhydis longicauda</td>
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<td>Garralut Ferrarius</td>
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<td>Leptolalax melicus</td>
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<td>Orthotomus chaktomuk</td>
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<td>Water basin</td>
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MEGOPHYRYS AURALENSIS

is a species of amphibian in the family Megophryidae. It is endemic to Cambodia where it is only known from Phnom Aural, the highest mountain of Cambodia. Its type locality is within the Phnom Aural Wildlife Sanctuary.
Hylarana faber is a species of frogs in the family Ranidae. It is found in Cambodia.
Philautus cardamonus is a species of frogs in the family Rhacophoridae. It is endemic to Cambodia, only known from the vicinity of the type locality in the Phnom Sankos Wildlife Sanctuary in the Cardamom Mountains. Its natural habitat is subtropical or tropical moist montane forests.
Ophryophryne synoria is a species of amphibian in the family Megophryidae. It is only known from its type locality in Seima Biodiversity Conservation Area, Mondulkiri Province, eastern Cambodia. Currently endemic to Cambodia,
Enhydris is a genus of slightly venomous, rear-fanged, colubrid snakes, endemic to the tropical ... innominata
GARRALUT FERRARIUS

Garralut Ferrarius

[Map of Garralut Ferrarius]
Leptolalax melicus is a frog species in the family Megophryidae. It is endemic to Cambodia where it is only known from near its type locality, Virachey National Park.
MEGOPHRYS DAMNEI

Megophrys Damnei

Background
Megophrys damnei
The Cambodian tailorbird is a species of bird endemic to Cambodia, likely confined to a single dense shrub habitat in the floodplain of the Mekong river.
WATER BASIN

Water basin
CONSERVATION planning units (ecological)

A ecological Planning units is basically a planning unit which is focused on merging the country's watershed areas and terrestrial ecoregions.
CONSERVATION planning units (Systematic)

A Systemic Planning unit is focused on dividing a country's land cover into pixels based on target cells in effort to design and manage protected areas for the 10 conservation targets using both current and future climate a total of 1126 planning units were created this unit is preferred because it is comparable efficient in producing results as well as objective.
CONSERVATION PLANNING TENURE  EVALUATING PROTECTED AREAS

TENURE

- Background
- Protected Areas
- Absent
- Transformed

Methods
Illustration of tenure passes without pallet

Illustration of tenure passes with pallet
CONSERVATION PLANNING: EXPLAINING MARXAN

- Marxan can help locate gaps in current network reserve network and determine the efficiency of the existing reserve network and efforts at meeting conservation objectives. Also, it is able to identify priority areas and opinions for filling gaps and allocating specific amount of area to achieve objectives and determining the location of these areas.
WHAT IS MARXAN

• It is a software program which delivers decision support for reserve system design it solves minimum set problems to achieve Maximum set problems to achieve maximum representation of biodiversity at the most minimum cost it is efficiency depends on human involvement, adaptation of sound ecological principles and establishment of scientifically defensible conservation goals and targets also it forms vital factor of systemic conservation planning
SYSTEMATIC CONSERVATION PLANNING  EXPLAINING MARXAN

A rigorous and accountable approach which focuses on locating, designing and managing conserving areas that collectively represent the biodiversity of a region for the least cost.

Scp as a conservation planning tool takes into account both ecological and socio-economic aspects of conservation provides a robust transparent approach to spatial allocation of conservation priorities given limited resources.

Scp is adequate it requires a clear decisions about conservation in a complex situation.

Scp has the ability to restore biodiversity through generating decision support tools and managing resources.

Scp is efficient in using limited resources to achieve conservation goals and flexible in the face of competing land uses and accountability in allowing decisions to be critically reviewed.
Input and output
The input and output information needs to be filled
Planning unit used is systemic planning units
Your 10 conservation targets
Conservation target of 20 and penalty factor of 10
A tenure /tenure pass file

Parameters
Repeated runs 1
Species proportion target 0.95
Run mode heuristic for current and for future is stimulated annealing followed by iterative improvement
Then marxan is run current climate
For future climate the boundary length is selected and is changed to 2
The repeated runs become 1000
The threshold selected values is 1600 followed by 9, 2 and 0
Then Marxan can be ran for future climate
Systematic CONSERVATION planning

CONSERVATION TARGET
20%

PENALTY FACTOR
10%

Using a systemic planning unit

10 TARGETS

5 species were not protected under current parameters using a tenure file

All species were protected under current parameters Using tenure passes

Expected Results


• https://opendevelopmentcambodia.net/topics/environmental-and-biodiversity-protection/

• https://khiri.com/2014/06/wildlife-conservation-efforts-cambodia/