

Ecology Restoration:

A Climate Change Adaptation Strategy for Protected Areas of the Northeast and Sierra Madre Region, Mexico.

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Director Regional Noreste
CONANP

The following information is the result of the project:

**“Capacity building for climate change
adaptation in the
Northeast and Eastern Sierra Madre Region
(NE&ESMR)”.**

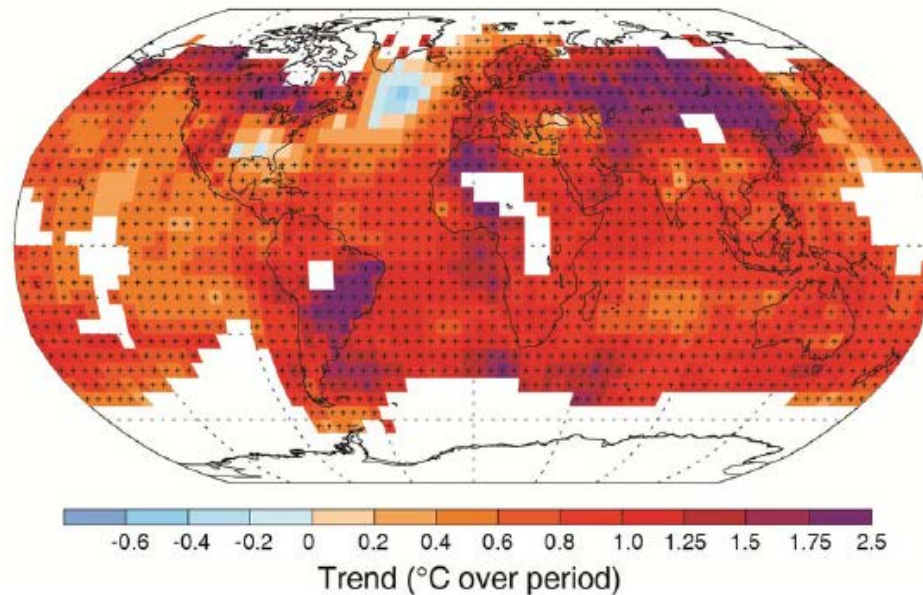
supported by Parks Canada.



Conservation in a Complex Climate Context

“Take effective and urgent actions to contain the loss of biodiversity with the goal of maintain resilient ecosystems by 2020, and continue providing essential services, in order to secure the planet’s variety of life, and to contribute to enhance human well-being, and reduce poverty” (**SP2011-2020 CDB**).

Observed change in average surface temperature 1901–2012





Archivo Conanp, Alejandra Carvajal, Frank Lynen y Leopoldo Idoja

LAS ÁREAS NATURALES PROTEGIDAS SON ESPACIOS ESENCIALES PARA MITIGAR Y ADAPTARNOS A LOS EFECTOS Y CONSECUENCIAS DEL CAMBIO CLIMÁTICO...

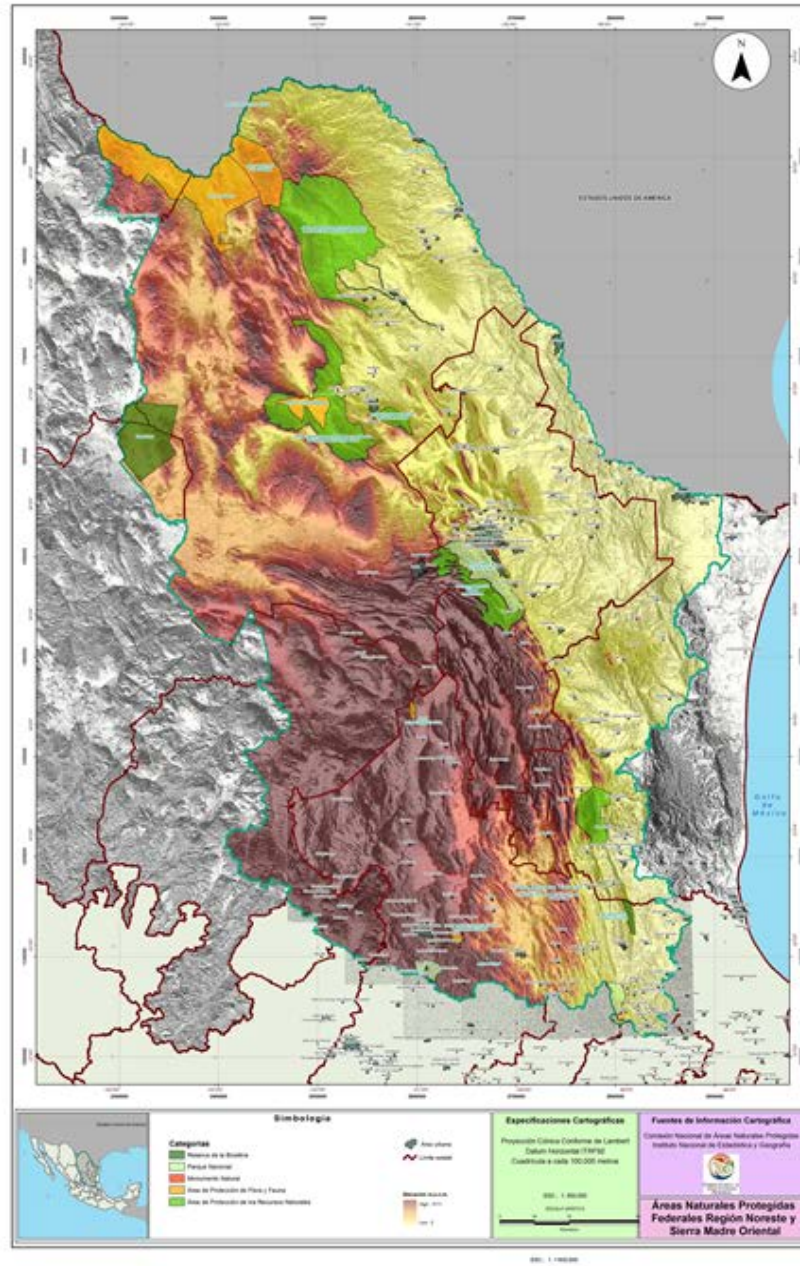


Mexican System of Protected Areas (PA)

176 P A occupying 12.93 % of the Mexican territory

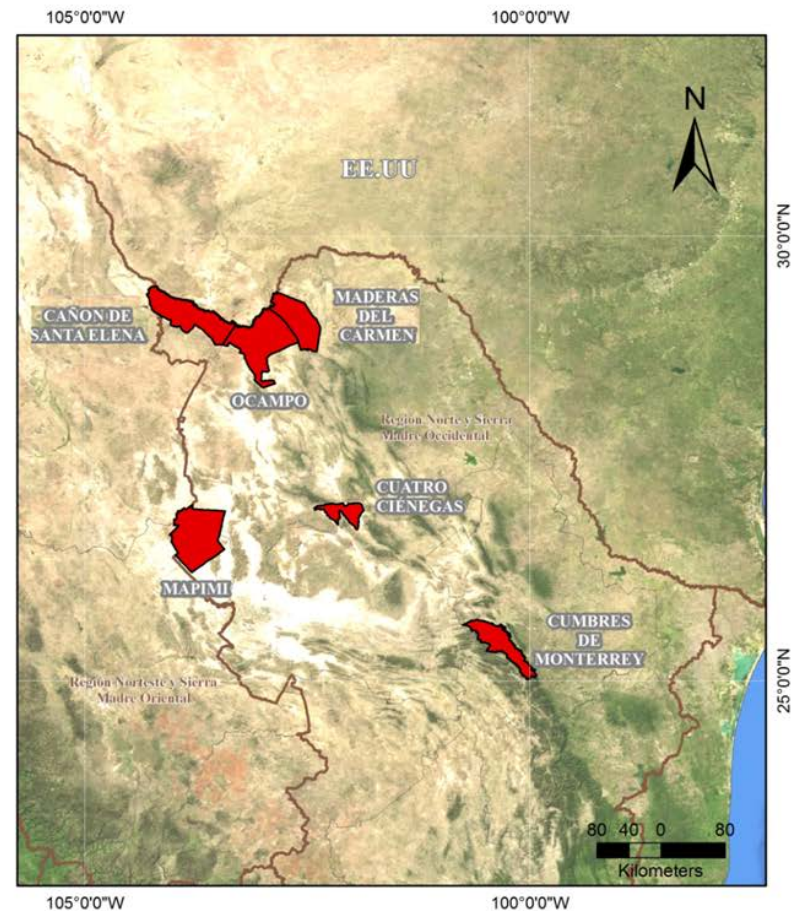
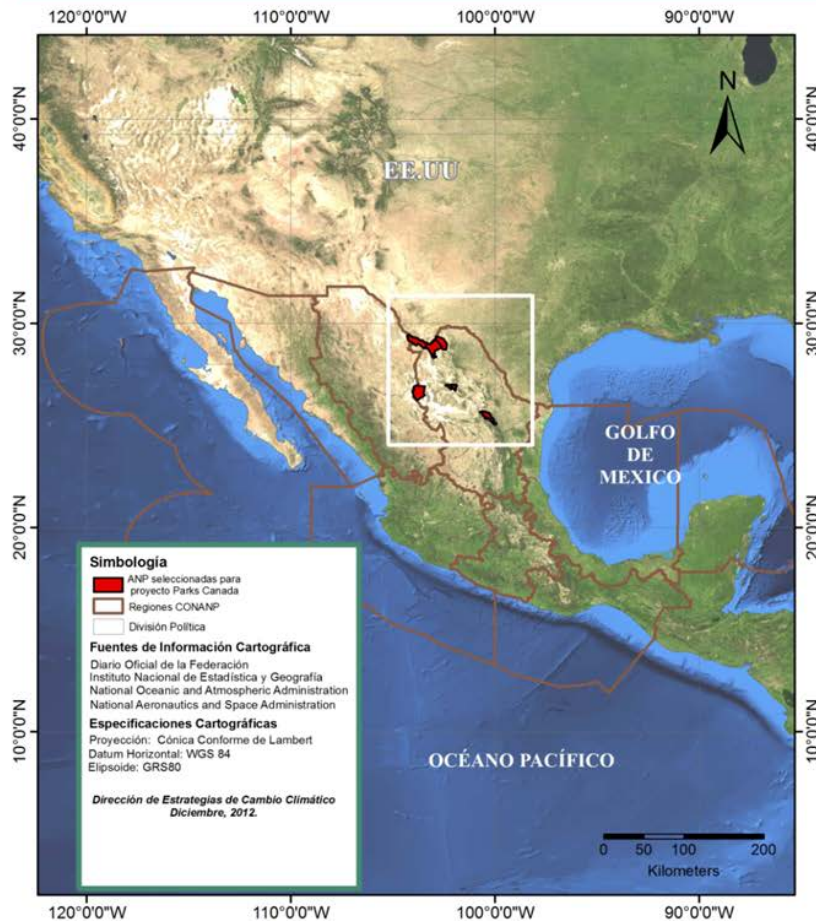
The Mexican Commission of Natural Protected Areas (CONANP) is encharged of conserving the natural heritage of Mexico and promoting a culture of sustainable development among the communities living in their own environment.



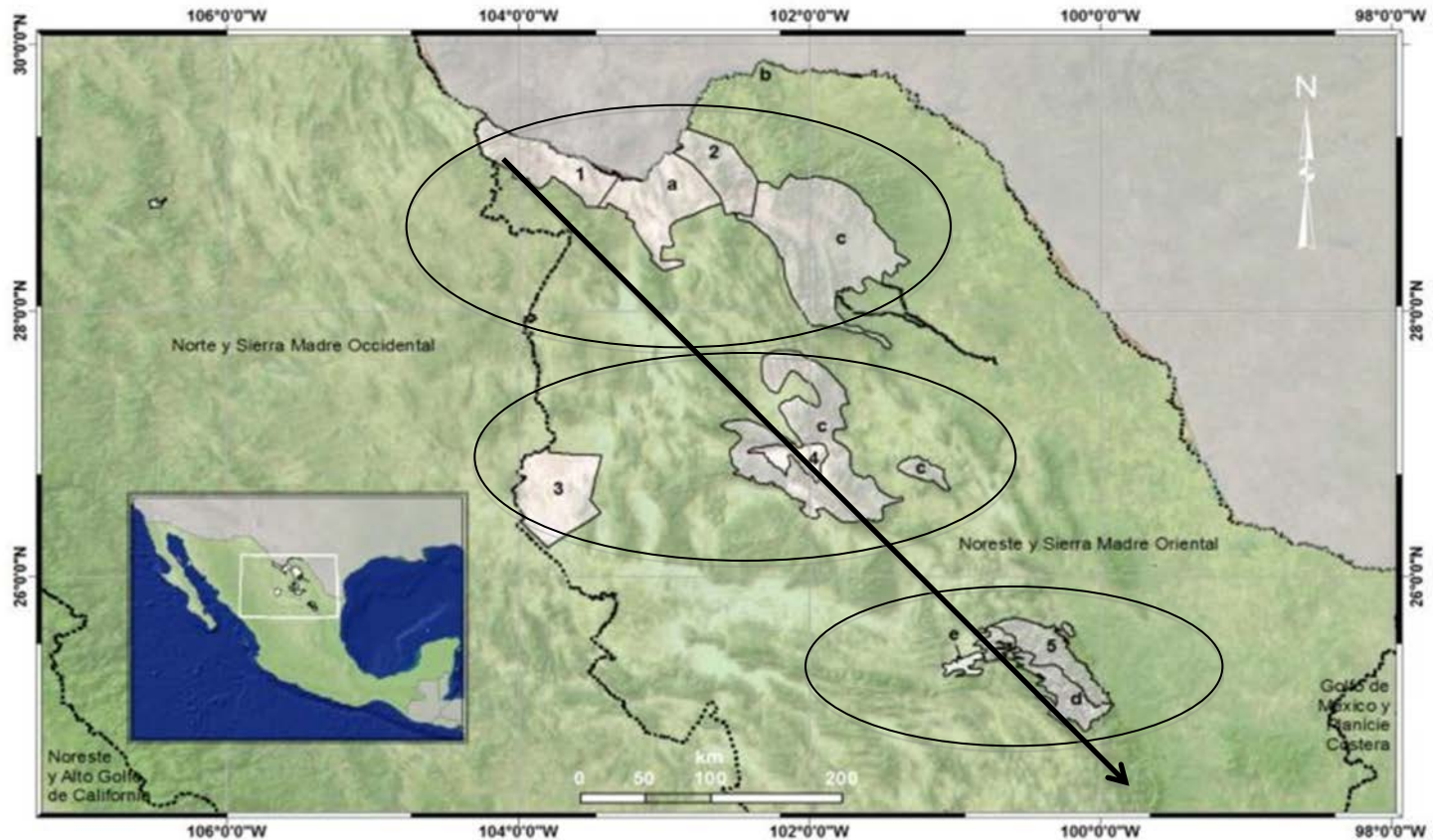


Mexican Protected Areas Clusters Frame Work

Parks Canada



Clusters Involved in the Project



SIMBOLOGÍA

ANPs OBJETOS DE ESTUDIO

REGIONES CONANP

- 1 CAÑÓN DE SANTA ELENA
2 MADERAS DEL CARMEN
3 MAPIMÍ

DIRECTAS

- 4 CUATRO CIÉNEGAS
5 CUMBRES DE MONTERREY

INDIRECTAS

- a OCAMPO
b RÍO BRAVO DEL NORTE
c CADNR 004
d CADNR 026
e ZAPALINAMÉ, ANP ESTATAL

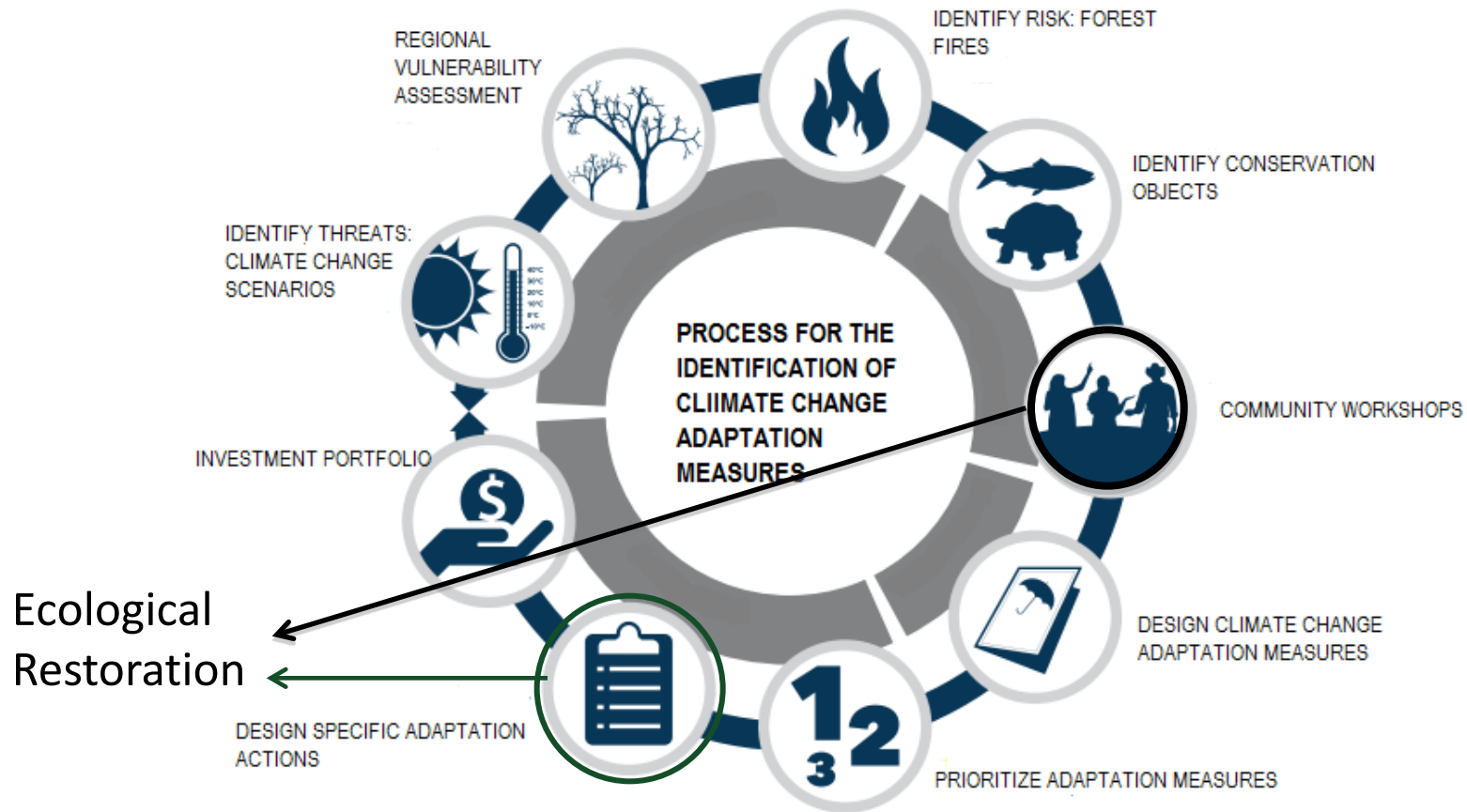


Objectives

1. Identify how climate change (based on climate projections) will affect the conservation targets and human activities of the region.
2. Design an adaptive management program with actions to support Protected Areas.



Steps in the Process of the identification of the adaptation measures



Community Workshops



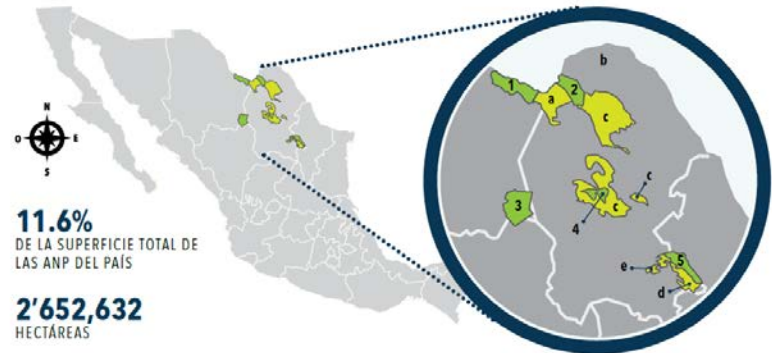
Adaptation Program of a P A



PROGRAMA DE ADAPTACIÓN AL CAMBIO CLIMÁTICO DEL COMPLEJO CUATROCIÉNegas



DESCRIPCIÓN GENERAL DE LA REGIÓN NORESTE Y SIERRA MADRE ORIENTAL (RNEYSMO)



ANP's OBJETO DE ESTUDIOS

DIRECTAS

- 1 Cañon de Santa Elena
- 2 Maderas del Carmen
- 3 Mapimi
- 4 Cuatro Ciénegas
- 5 Cumbres de Monterrey

INDIRECTAS

- a Ocampo
- b Río Bravo del Norte
- c CADNR 004
- d CADNR 026
- e Zapalinamé ANP Estatal

ACTIVIDADES ECONÓMICAS



ECOSISTEMAS



ESPECIES DE FLORA Y FAUNA



Alberga un conjunto significativo de especies de flora y fauna silvestre, entre las que sobresalen el águila real, halcón peregrino, cotorra serrana, puma, oso negro, venados cola blanca y bura, así como tortugas terrestres, insectos y aves residentes y migratorias de importancia internacional. De igual manera, existe una gran variedad de grupos florísticos como coníferas, latifoliadas, cactáceas, agaves, gramíneas y vegetación de dunas.

Figura 2. Áreas Naturales Protegidas en la RNEYSMO

MÉXICO
ESTADO DE LA SIERRA



SEMARNAT
SECRETARÍA DE
MEDIO AMBIENTE
Y ENERGÍA



CONANP
COMISIÓN NACIONAL
DE ÁREAS NATURALES
PROTEGIDAS

FONDO MEXICANO
PARA LA CONSERVACIÓN
DE LA NATURALEZA, A.C.
FONDO MEXICANO
PARA LA CONSERVACIÓN
DE LA NATURALEZA, A.C.

Parque
Canada



CONANP
COMISIÓN NACIONAL
DE ÁREAS NATURALES
PROTEGIDAS

IUCN

IUCN
WORLD PARKS
CONGRESS
SYDNEY 2014

Restoration Actions as an Adaptation Measures in P A of the Region

Several Workshops were conducted with local communities in order to identify the importance of restoration as part of an adaptation process.

Best practice principles call for restoration to be EFFECTIVE, EFFICIENT, and ENGAGING.



Climate Exaservated Events vs Environmental Impacts

- Droughts
- Extreme cold fronts
- Extreme hot temepratures up to 120 ° F
- Hurricanes
- Hail

- Erosion
- Invasive species encrouchment
- Wildland Forest Fires
- Loss of Ecosystemic Services
- Deforestation
- Loss of Biodiversity



Restoration Actions : Soil Conservation



- 250 ha. with conservation and soil restoration activities



Restoration Actions : Soil Conservation



Construction of water collection for native fauna, to reduce its vulnerability to droughts and desertification.

Design and implement a water run-off management program in order to recover pasturelands in the area.



Restoration actions : invasive species control



Carp (*Ciprinum carpio*) and Pez Joya (*Hemichromis guttatus*) eradication Program



Restoration Actions : exotic species control



Giant Cane
(*Arundo donax*)
Control



Restoration Actions : exotic species control



Salt Cedar
(*Tamarix ramosissima*)
Control



200 ha of control and eradication for
invasive species



Restoration Actions : Grassland Management

- 9500 ha excluded for conservation objectives from livestock activities



Restoration Actions : Grassland Management



3,600 ha grassland
management



Restoration Actions : Fuel Load Management

40 ha of forest fuel management



Conclusions and learned lessons

- Restoration is a cost- effective adaptation measure to reduce climate change vulnerability.
- Communities participation is a important processes in order to identify adaptation actions and engage stakeholders in the process to build resilience efforts.
- Local communities recognize the importance of restoration actions.
- Actions are focused to reduce biodiversity and local communities vulnerability to climate change.



Thank you! ¡Gracias!

Luis Fueyo Mac Donald

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National Commission of Natural Protected Areas

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