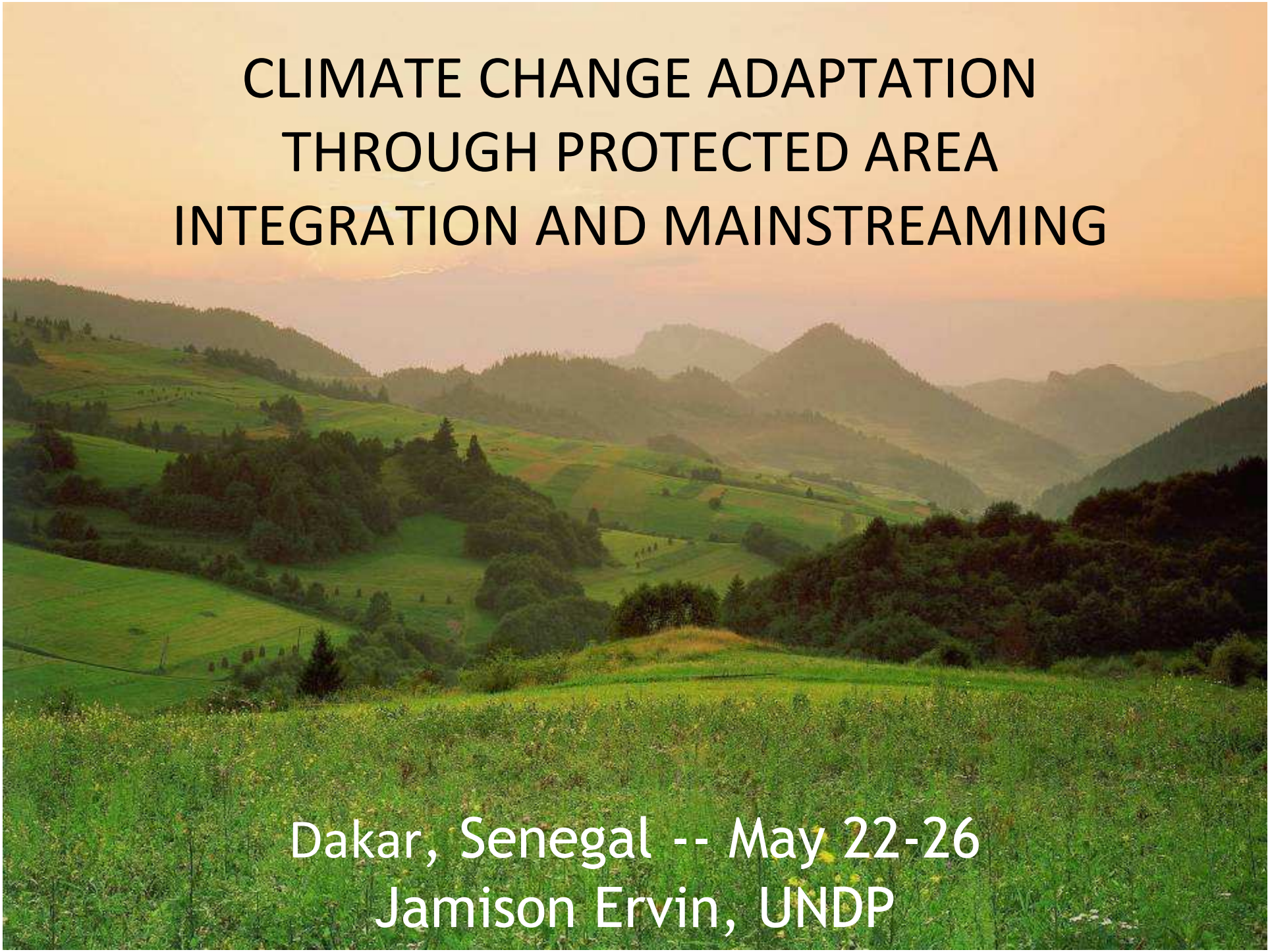
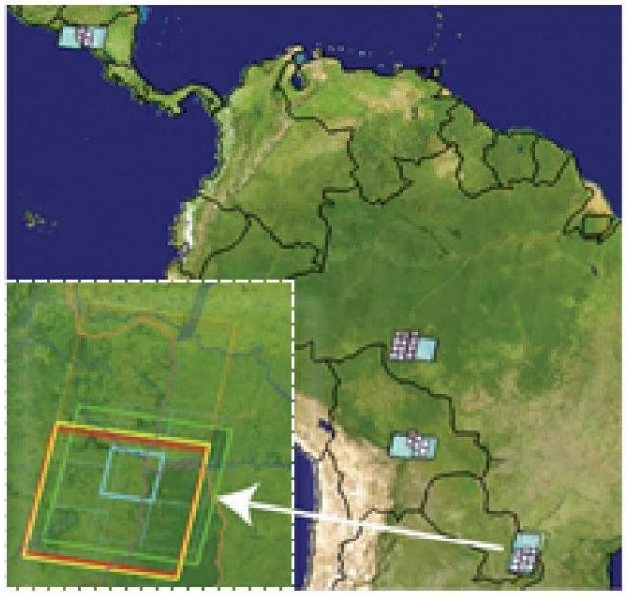
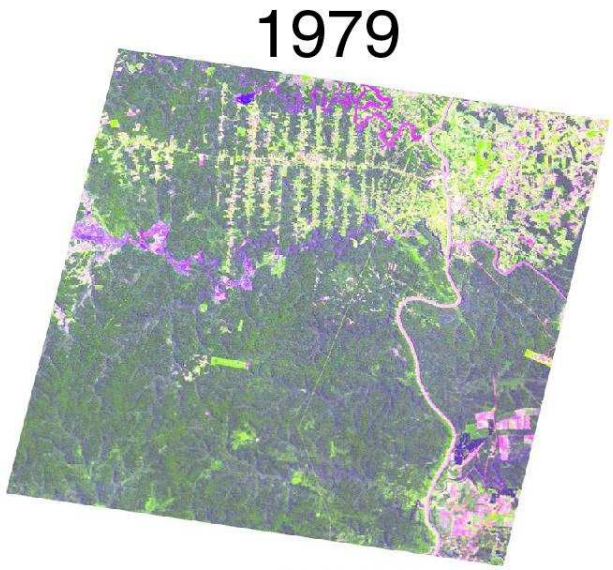
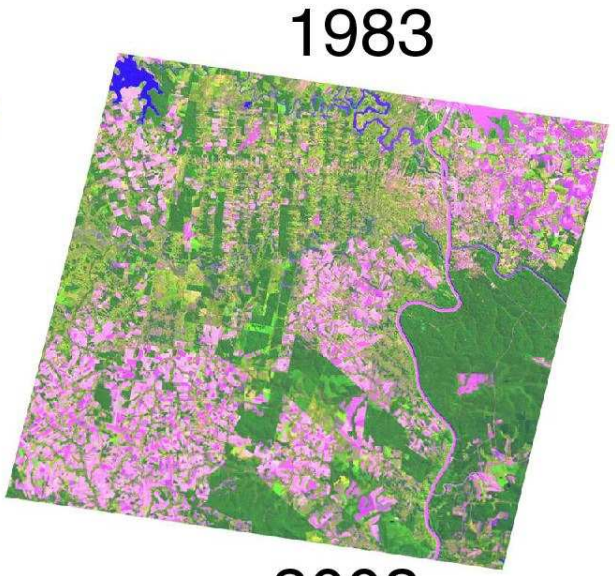
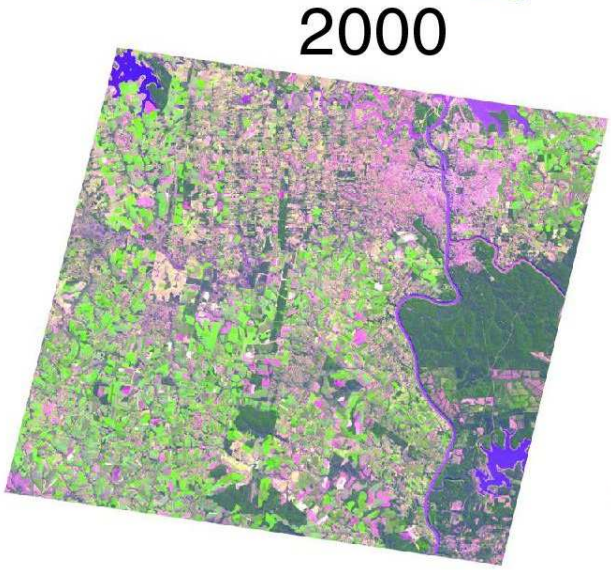

CLIMATE CHANGE ADAPTATION
THROUGH PROTECTED AREA
INTEGRATION AND MAINSTREAMING
Dakar, Senegal -- May 22-26
Jamison Ervin, UNDP

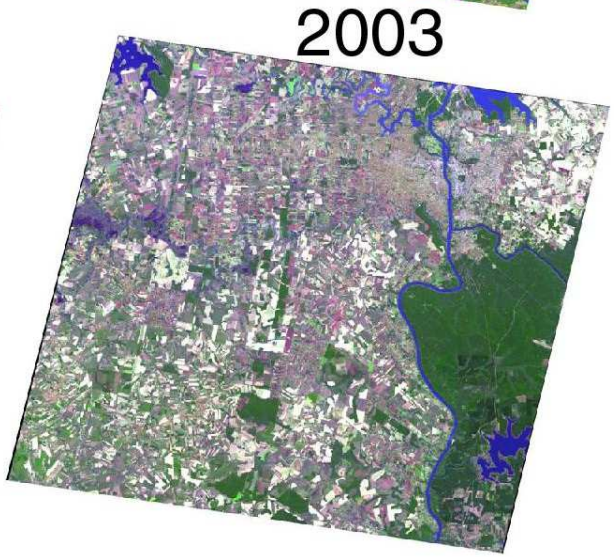
WHY INTEGRATE PROTECTED AREAS?











WHY INTEGRATE PROTECTED AREAS?

Protected areas alone will not be enough to conserve biodiversity into the future…

WHY INTEGRATE PROTECTED AREAS?

…especially under climate scenarios….

WHY INTEGRATE PROTECTED AREAS?

….and well-designed protected area networks are *the* primary mechanism for enabling climate adaptation.

BUT WHAT DOES PROTECTED AREA INTEGRATION MEAN?

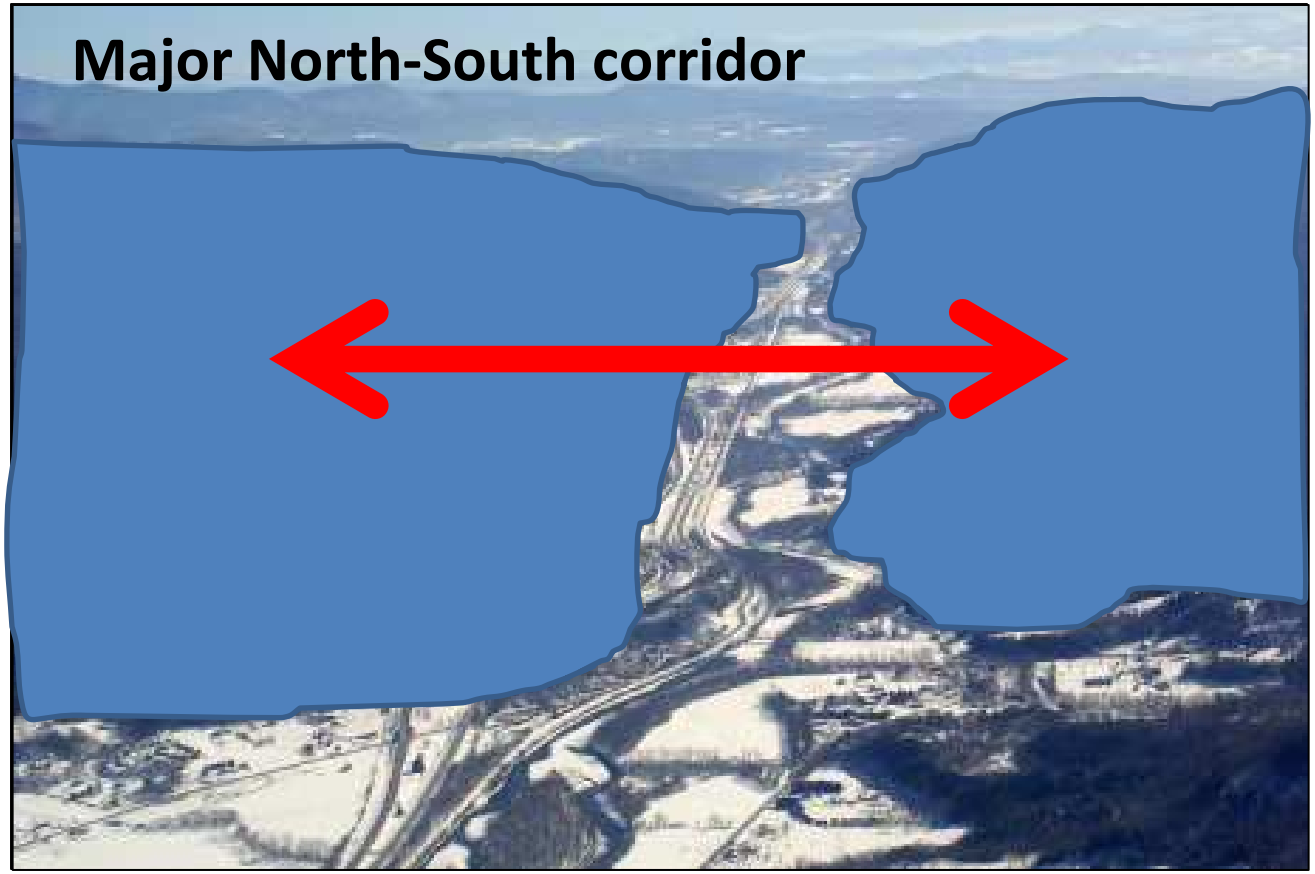
1. Spatial integration
2. Sectoral integration

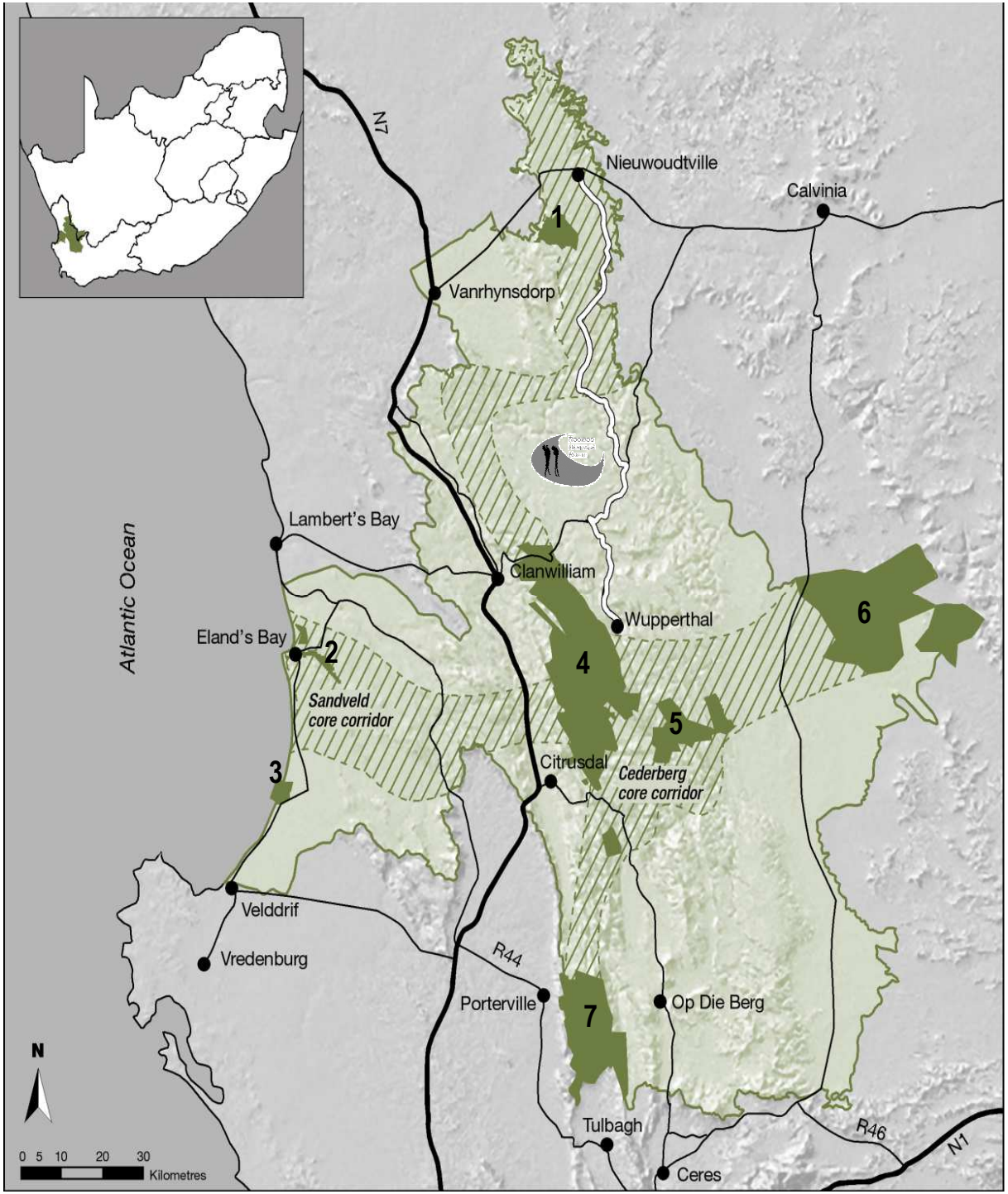
WHAT DOES PROTECTED AREA INTEGRATION MEAN?

1. **Spatial integration**
2. Sectoral integration

SPATIAL INTEGRATION

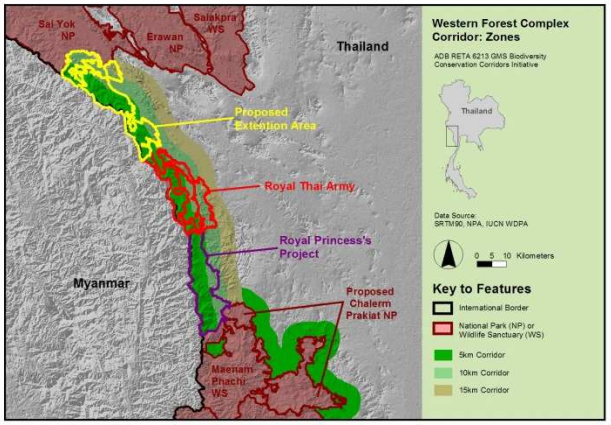
Ensuring that ecological processes, such as migration, can occur at landscape-level scales



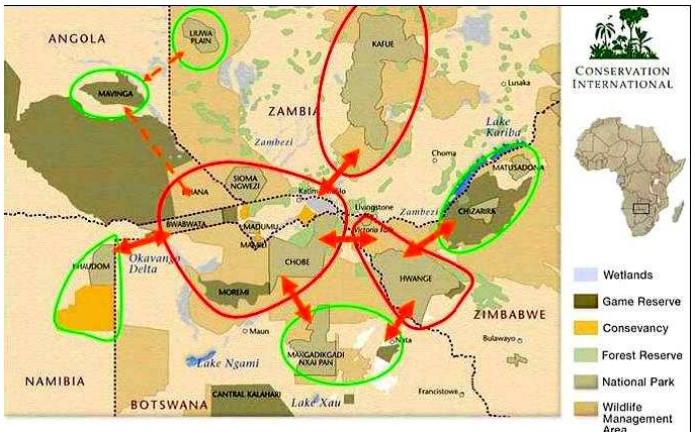


Example of climate adaptation corridors in South Africa

Protected area spatial integration

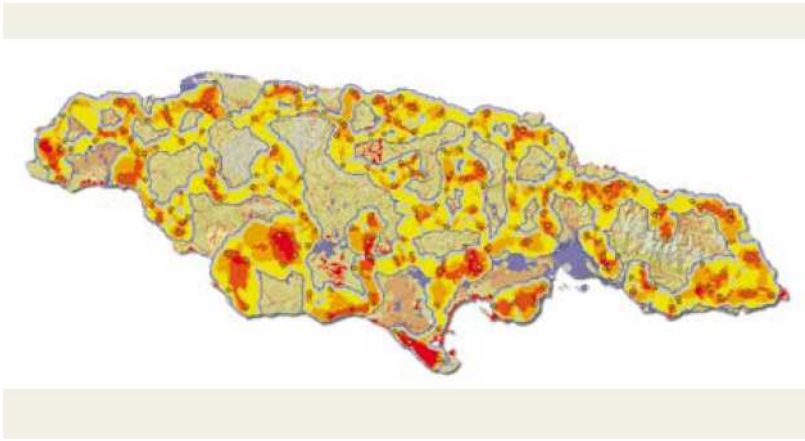


Connectivity corridors



Transboundary areas

Regional networks

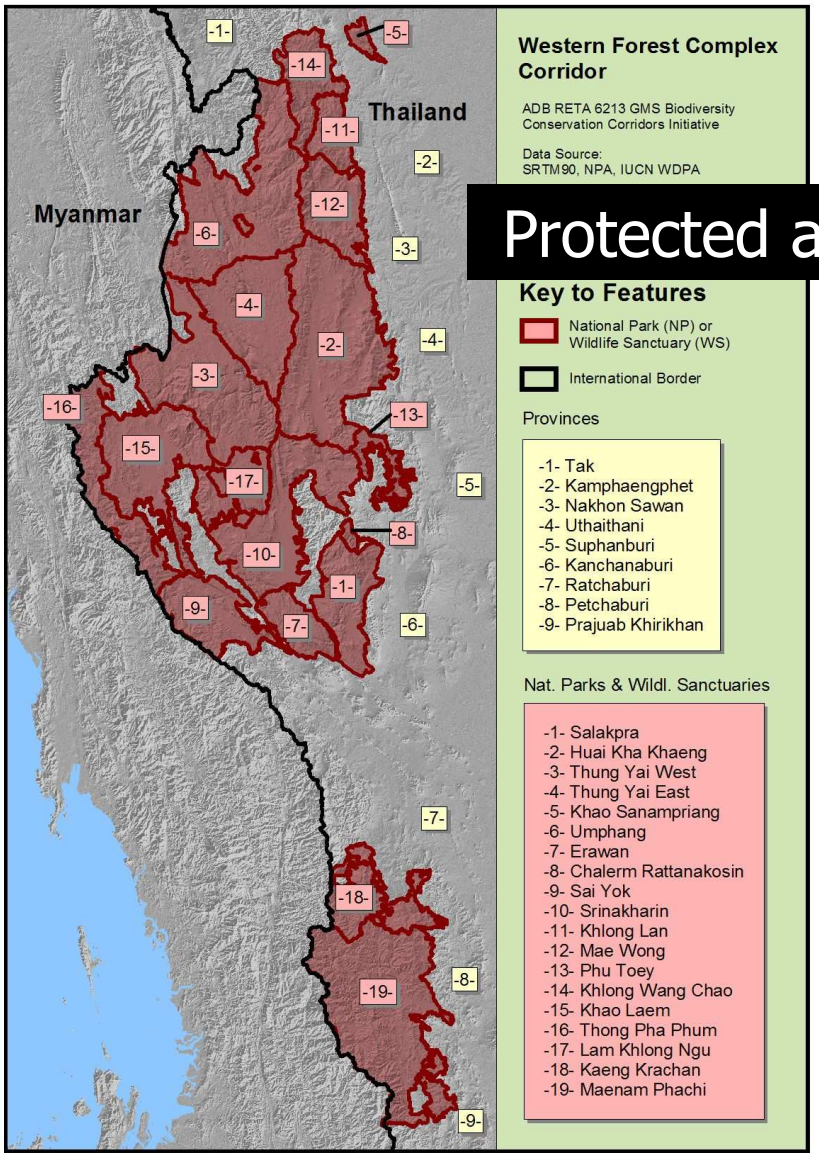


Improved gap assessments

Tenasserim – Western Forest Complex



Protected areas



Western Forest Complex Corridor

ADB RETA 6213 GMS Biodiversity Conservation Corridors Initiative

Data Source: SRTM90, NPA, IUCN WDPA

Key to Features

National Park (NP) or Wildlife Sanctuary (WS)

International Border

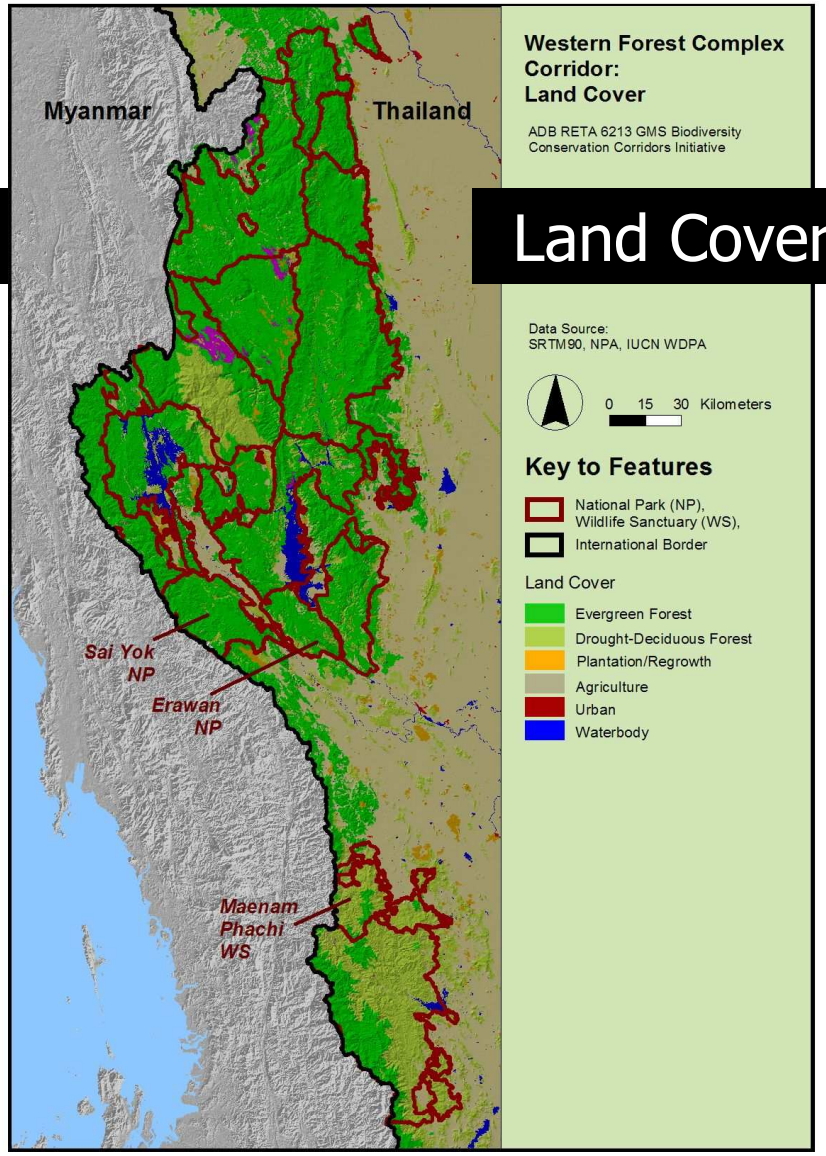
Provinces

-1- Tak
-2- Kamphaengphet
-3- Nakhon Sawan
-4- Uthaithani
-5- Suphanburi
-6- Kanchanaburi
-7- Ratchaburi
-8- Petchaburi
-9- Prajuab Khirikhan

Nat. Parks & Wildl. Sanctuaries

-1- Salakpra
-2- Huai Kha Khaeng
-3- Thung Yai West
-4- Thung Yai East
-5- Khao Sanampriang
-6- Umphang
-7- Erawan
-8- Chalerm Rattanakosin
-9- Sai Yok
-10- Srinakharin
-11- Khlong Lan
-12- Mae Wong
-13- Phu Toey
-14- Khlong Wang Chao
-15- Khao Laem
-16- Thong Pha Phum
-17- Lam Khlong Ngu
-18- Kaeng Krachan
-19- Maenam Phachi

Land Cover



Western Forest Complex Corridor: Land Cover

ADB RETA 6213 GMS Biodiversity Conservation Corridors Initiative

Data Source: SRTM90, NPA, IUCN WDPA

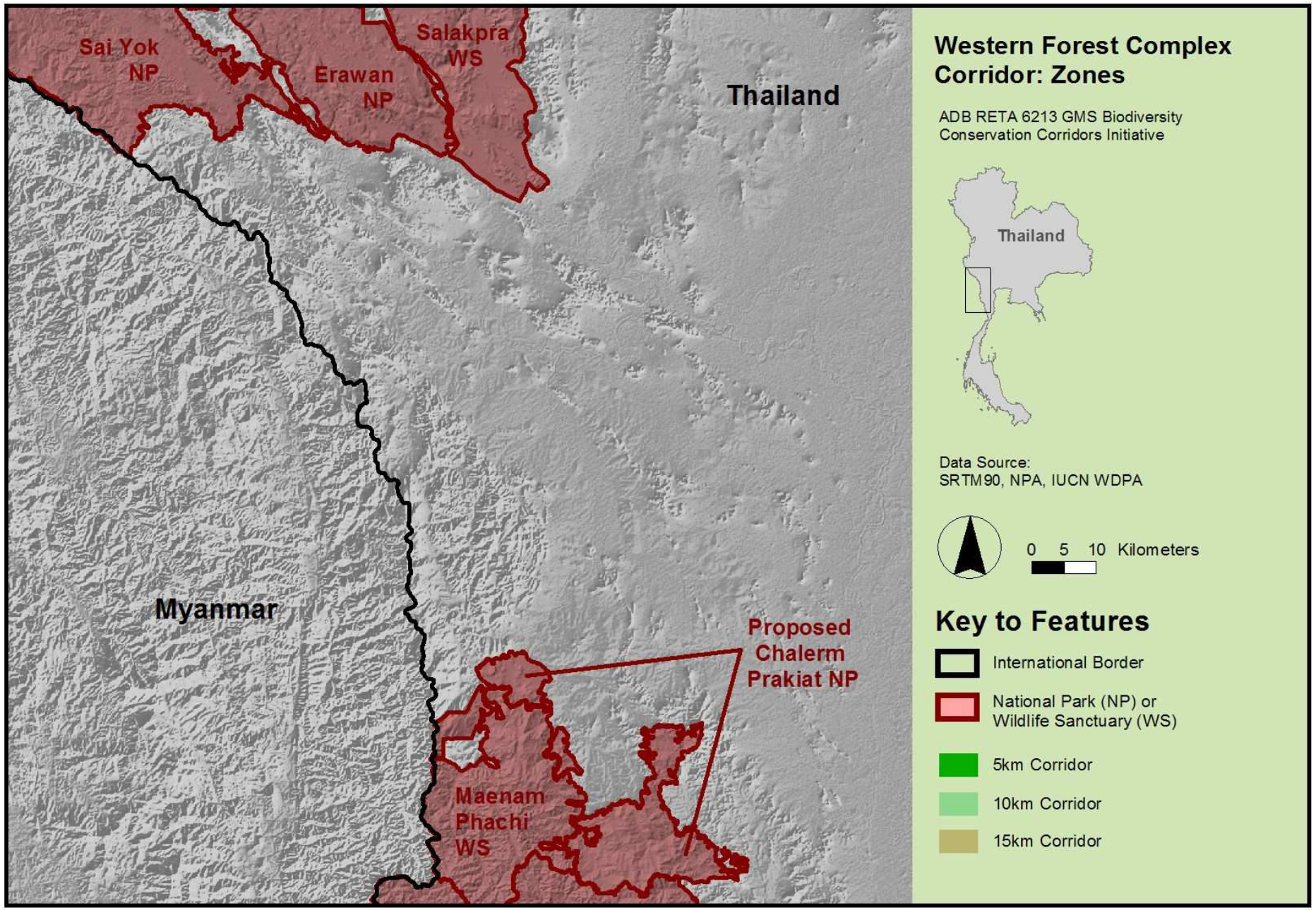
0 15 30 Kilometers

Key to Features

National Park (NP), Wildlife Sanctuary (WS),
International Border

Land Cover

Evergreen Forest
Drought-Deciduous Forest
Plantation/Regrowth
Agriculture
Urban
Waterbody


Sai Yok NP
Erawan NP
Salakpra WS
Thailand
Myanmar
Proposed Chalerm Prakiat NP
Maenam Phachi WS
Western Forest Complex Corridor: Zones
ADB RETA 6213 GMS Biodiversity Conservation Corridors Initiative
Thailand
Data Source:
SRTM90, NPA, IUCN WDPA
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Key to Features
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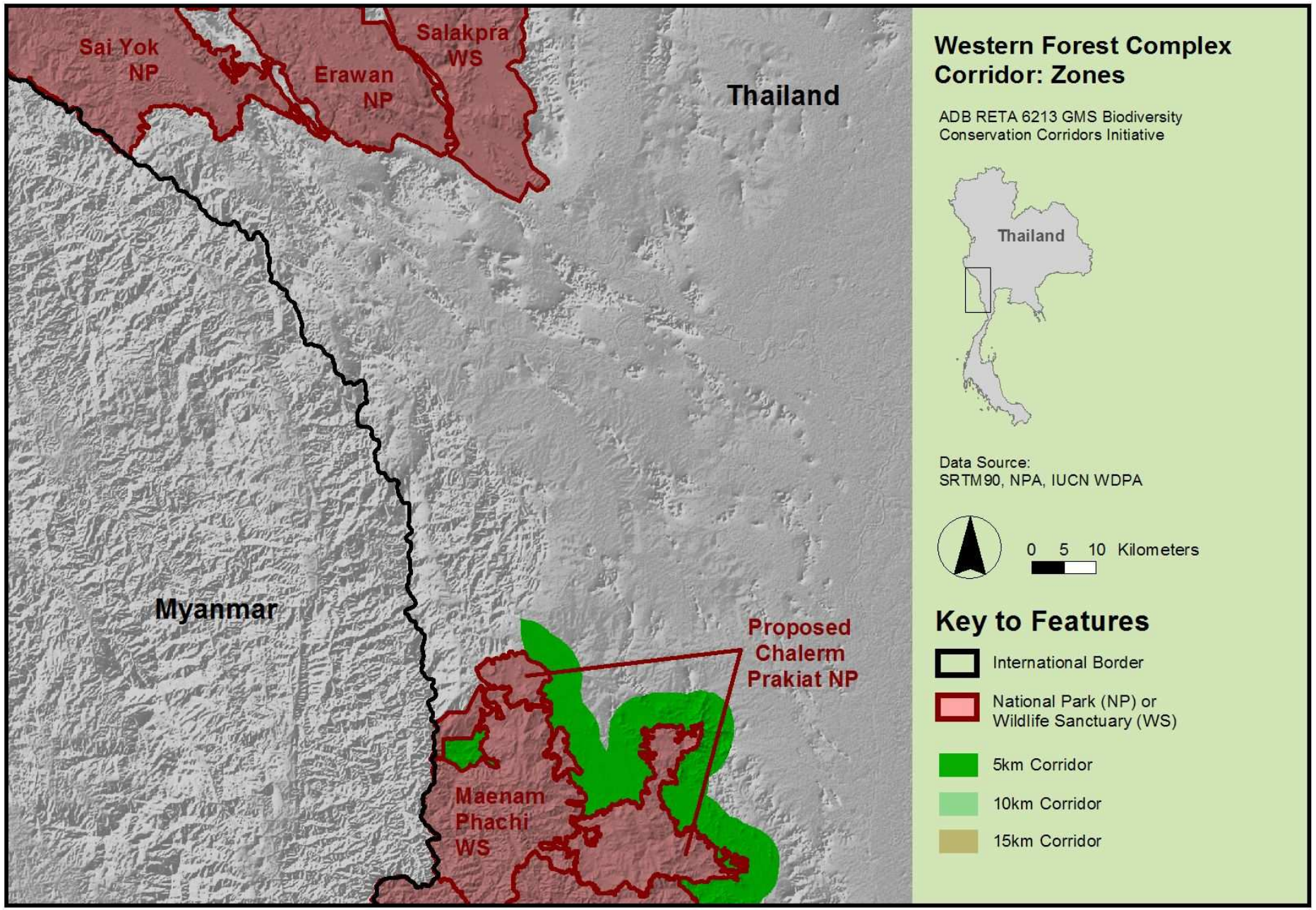
15km Corridor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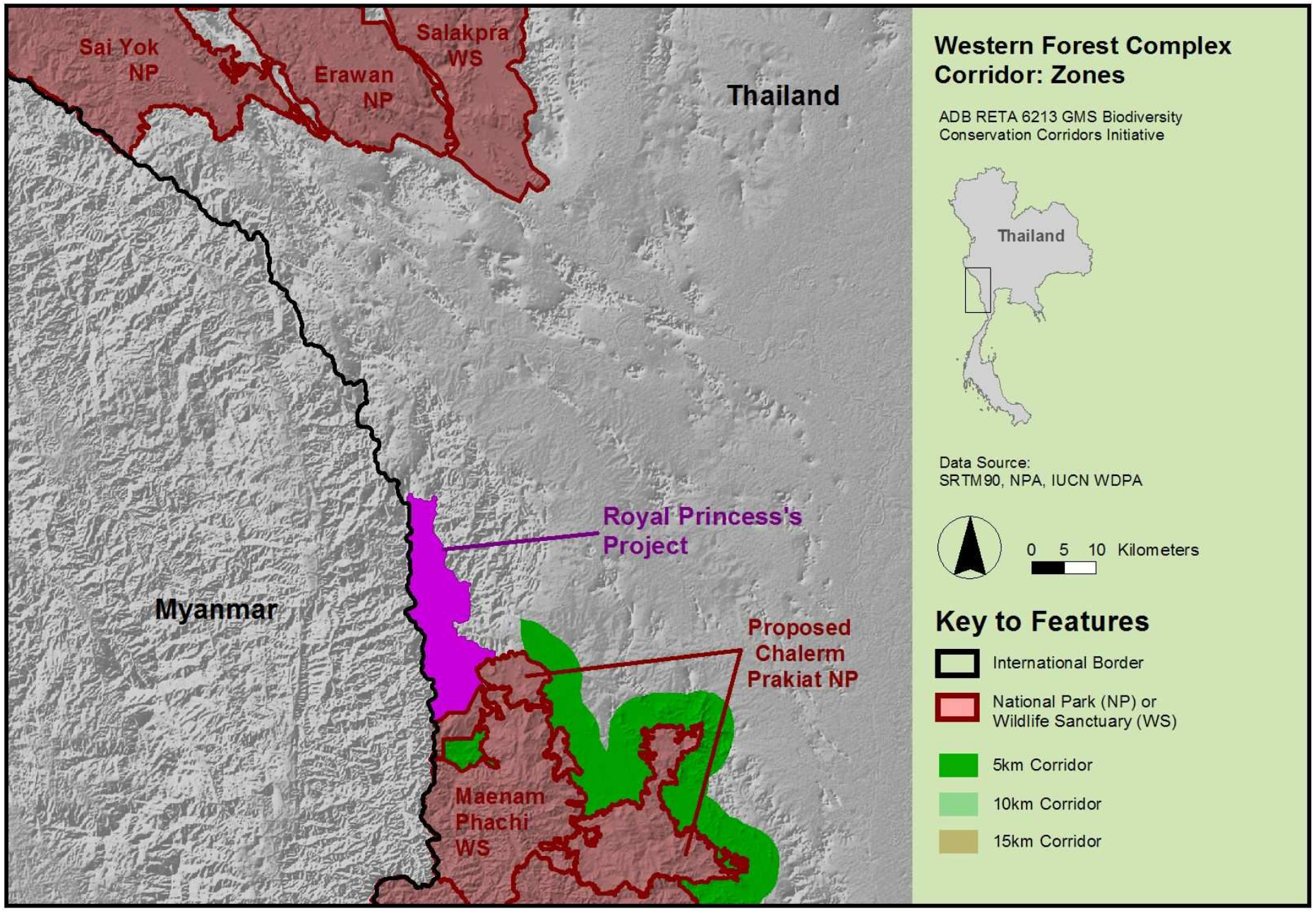
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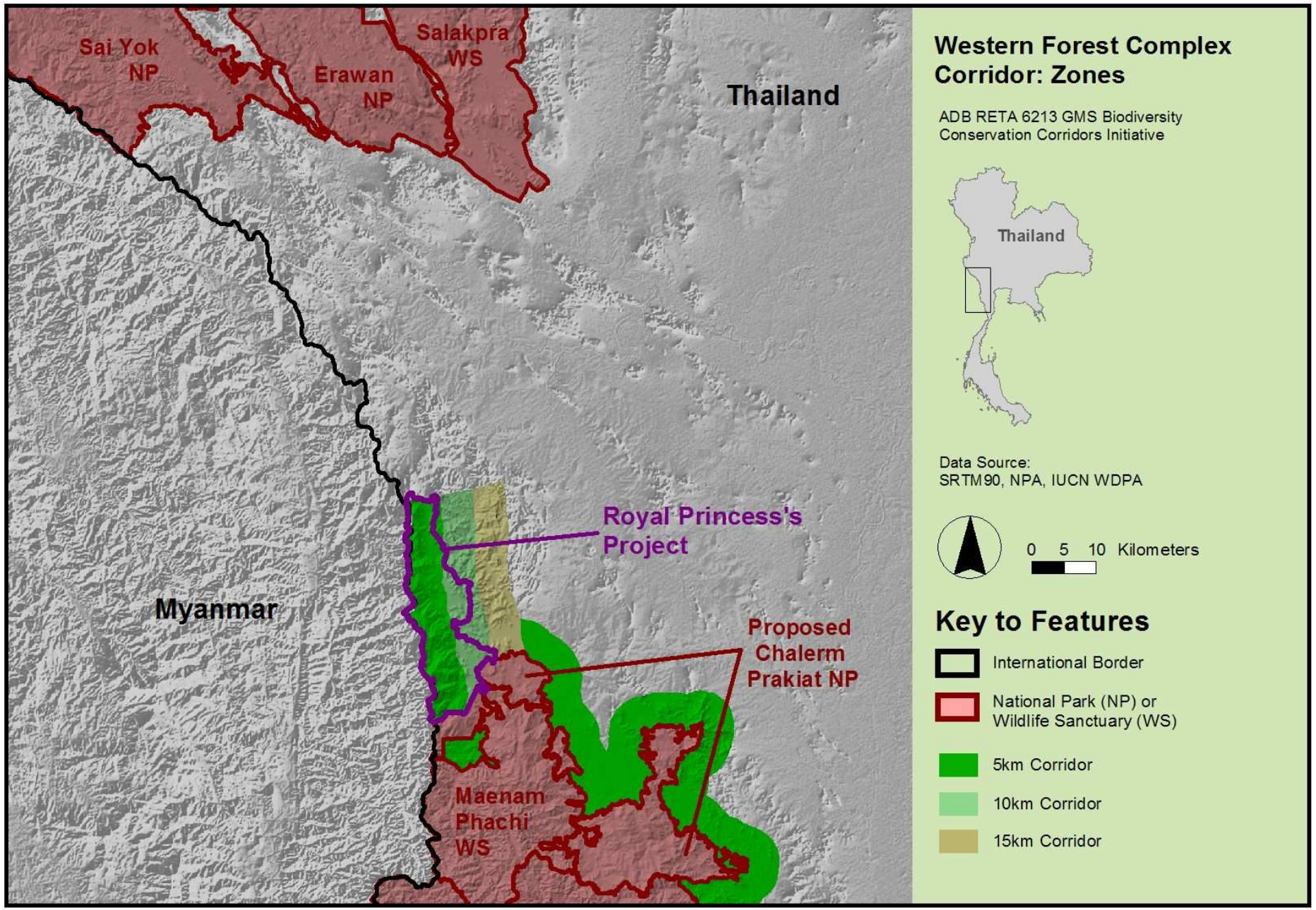
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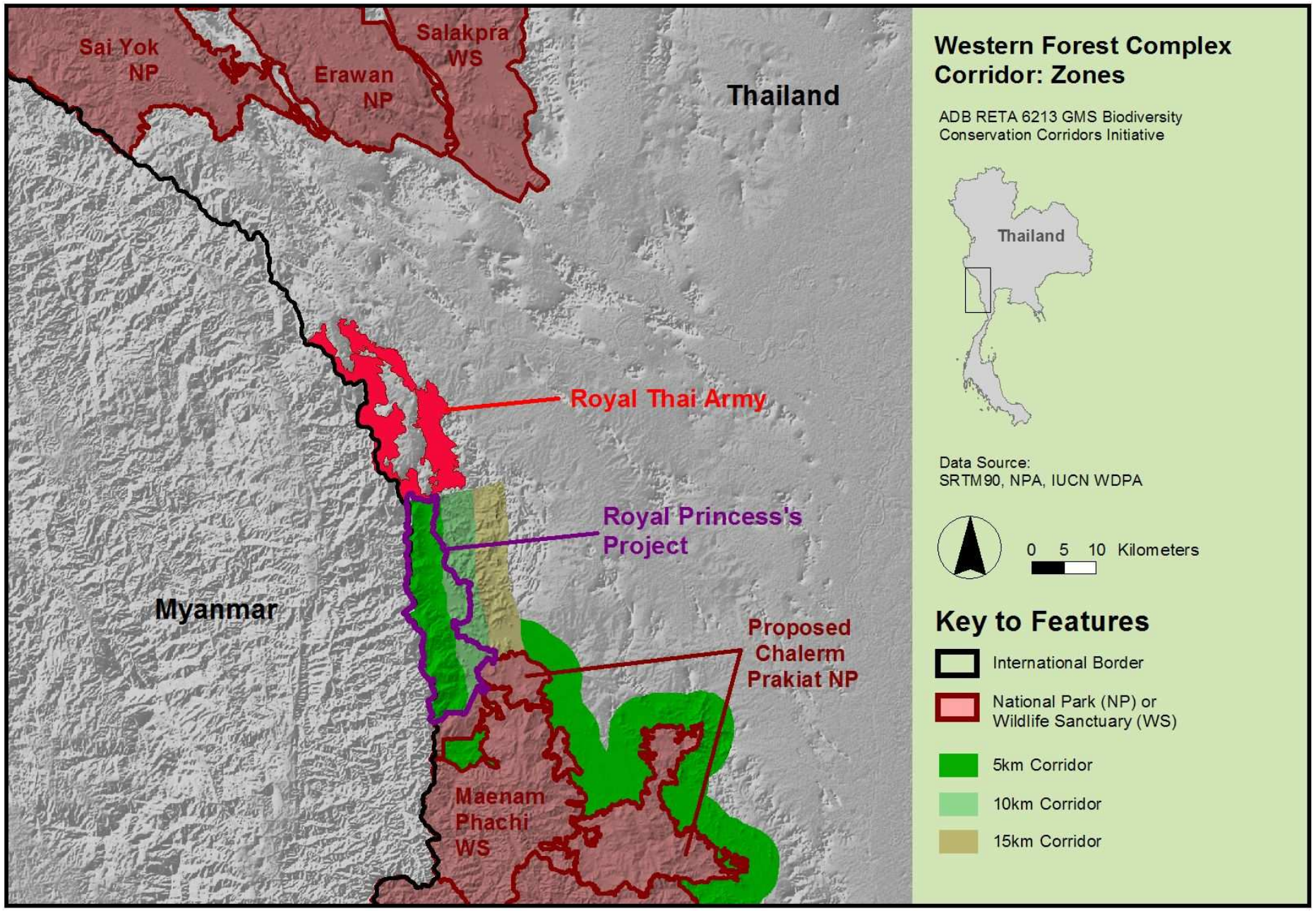
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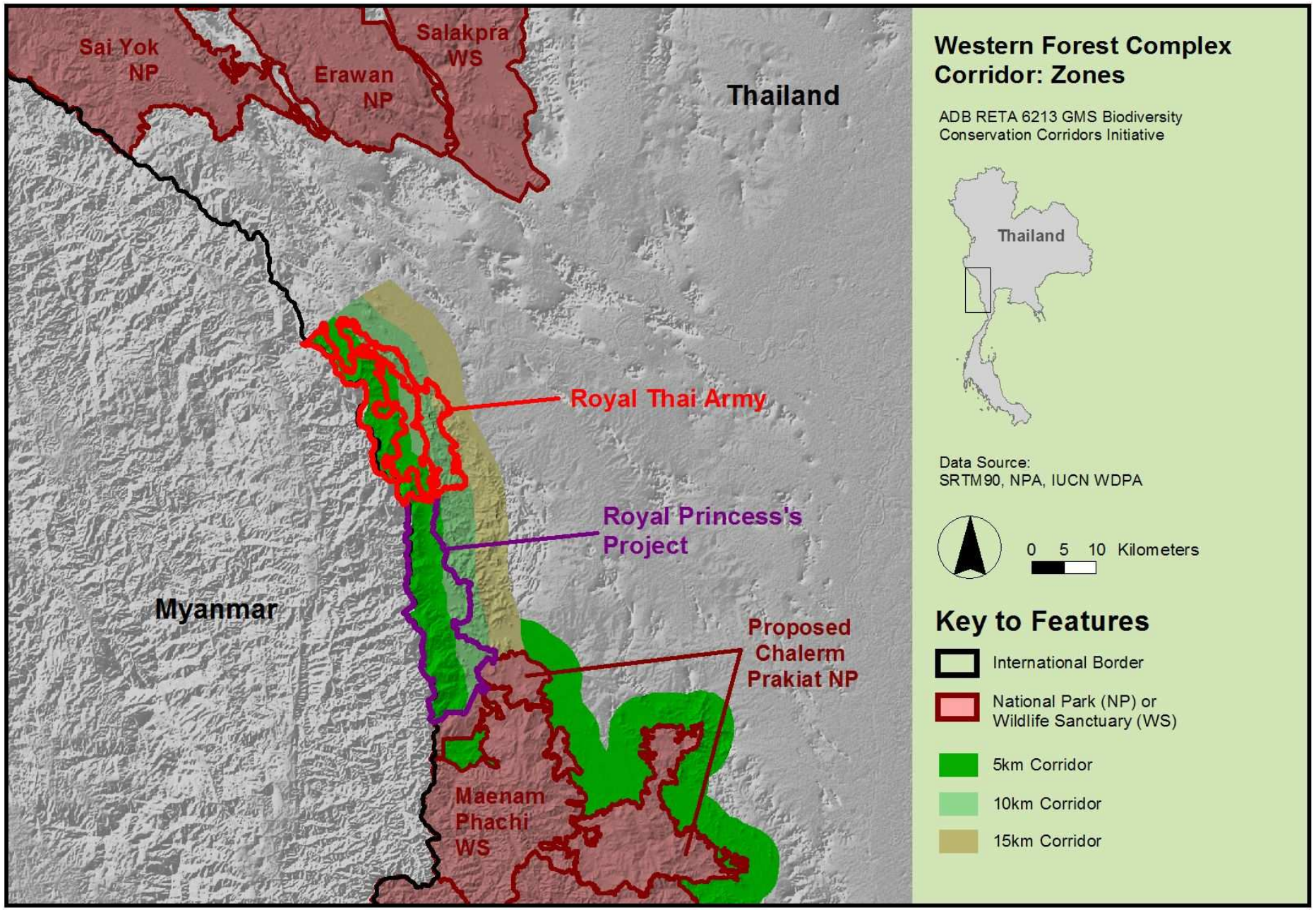
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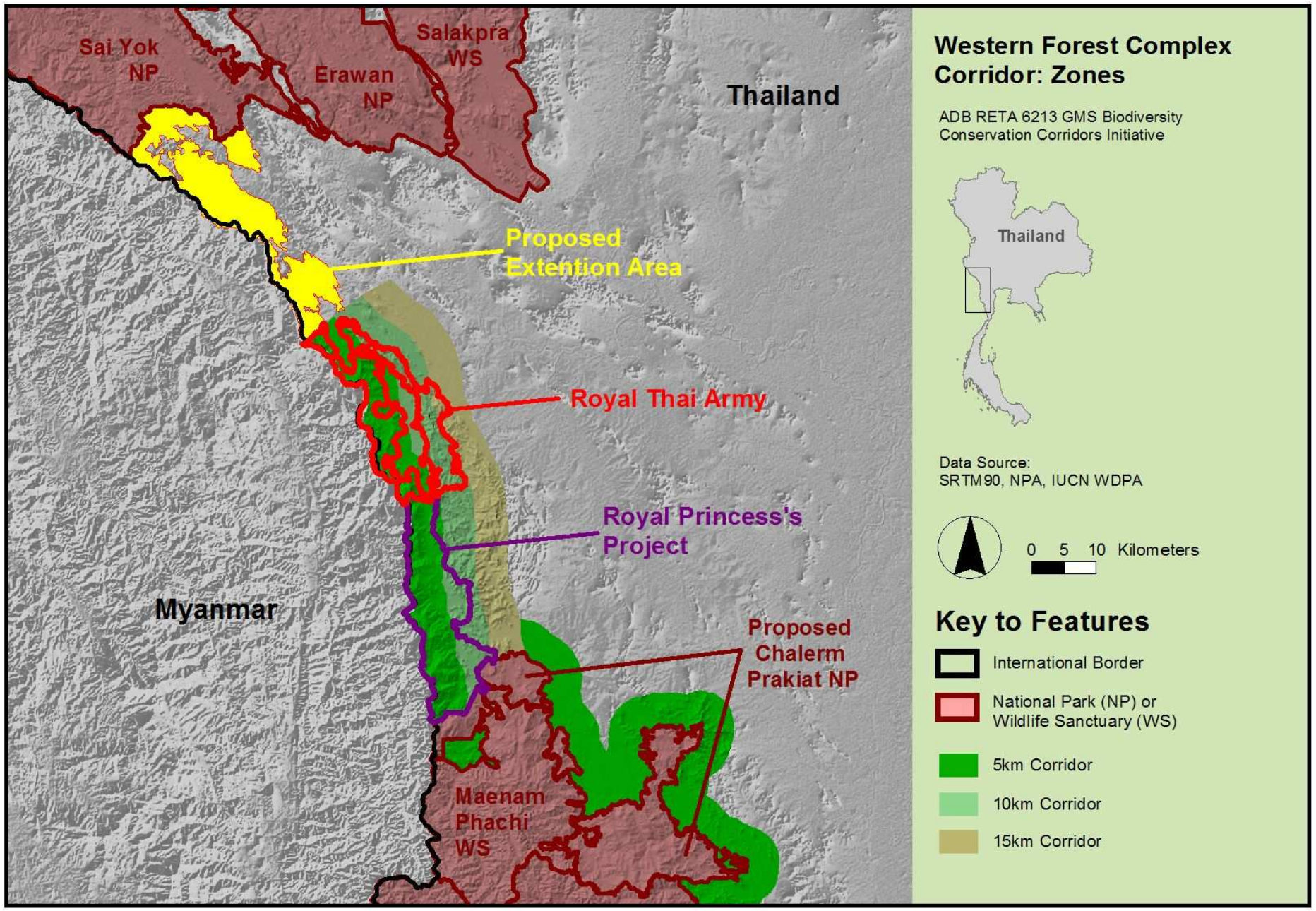
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Proposed Extention Area
Royal Thai Army
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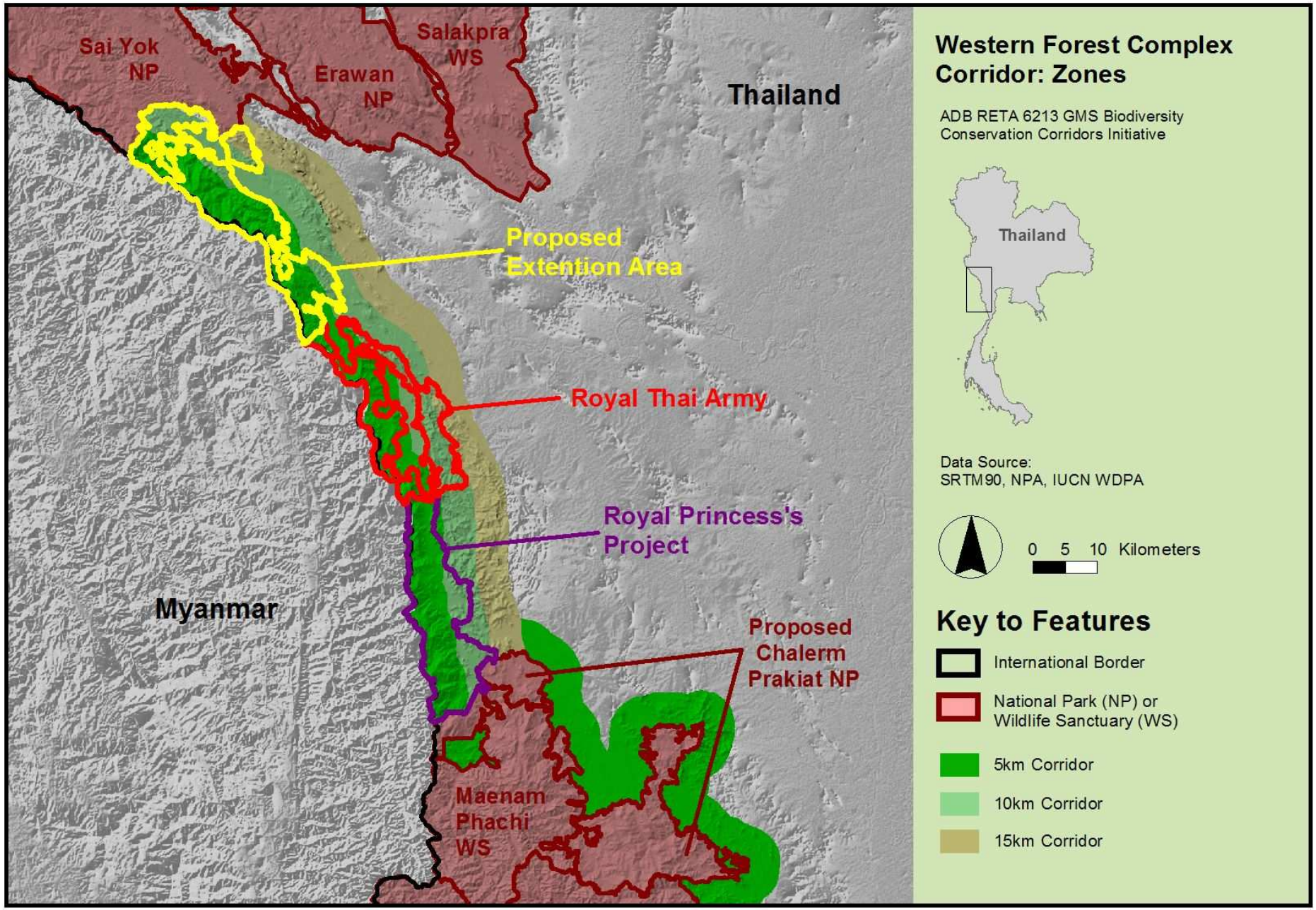
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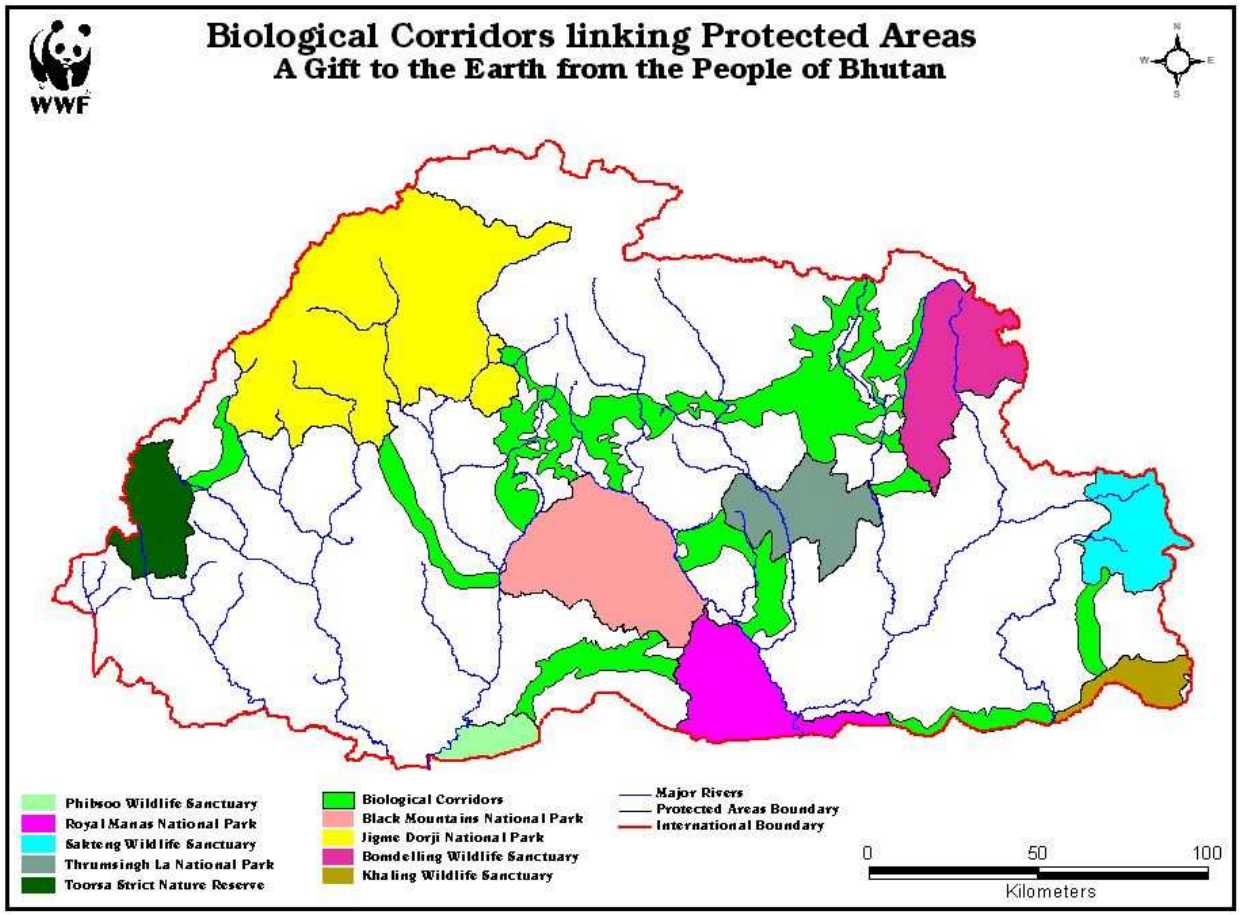
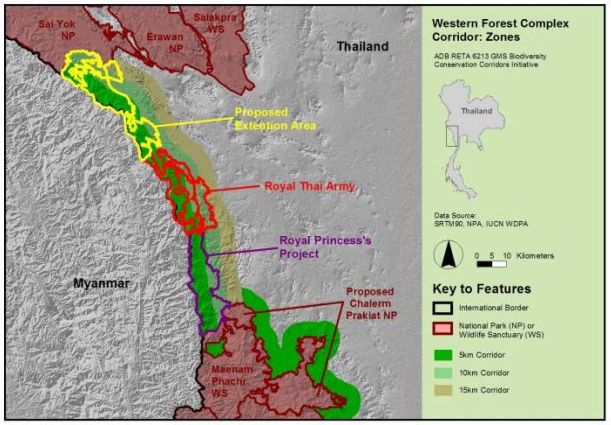
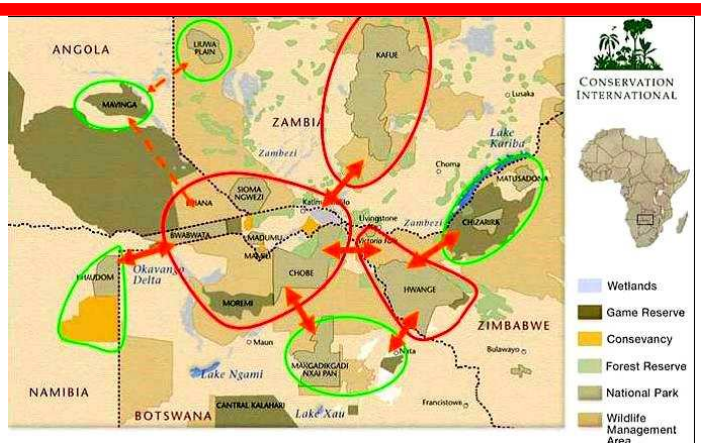
Corridors can be at landscape, national and regional levels



Protected area spatial integration

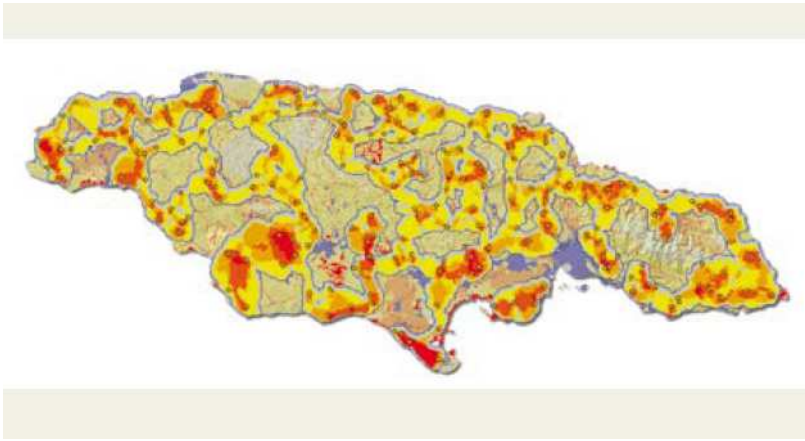


Connectivity corridors



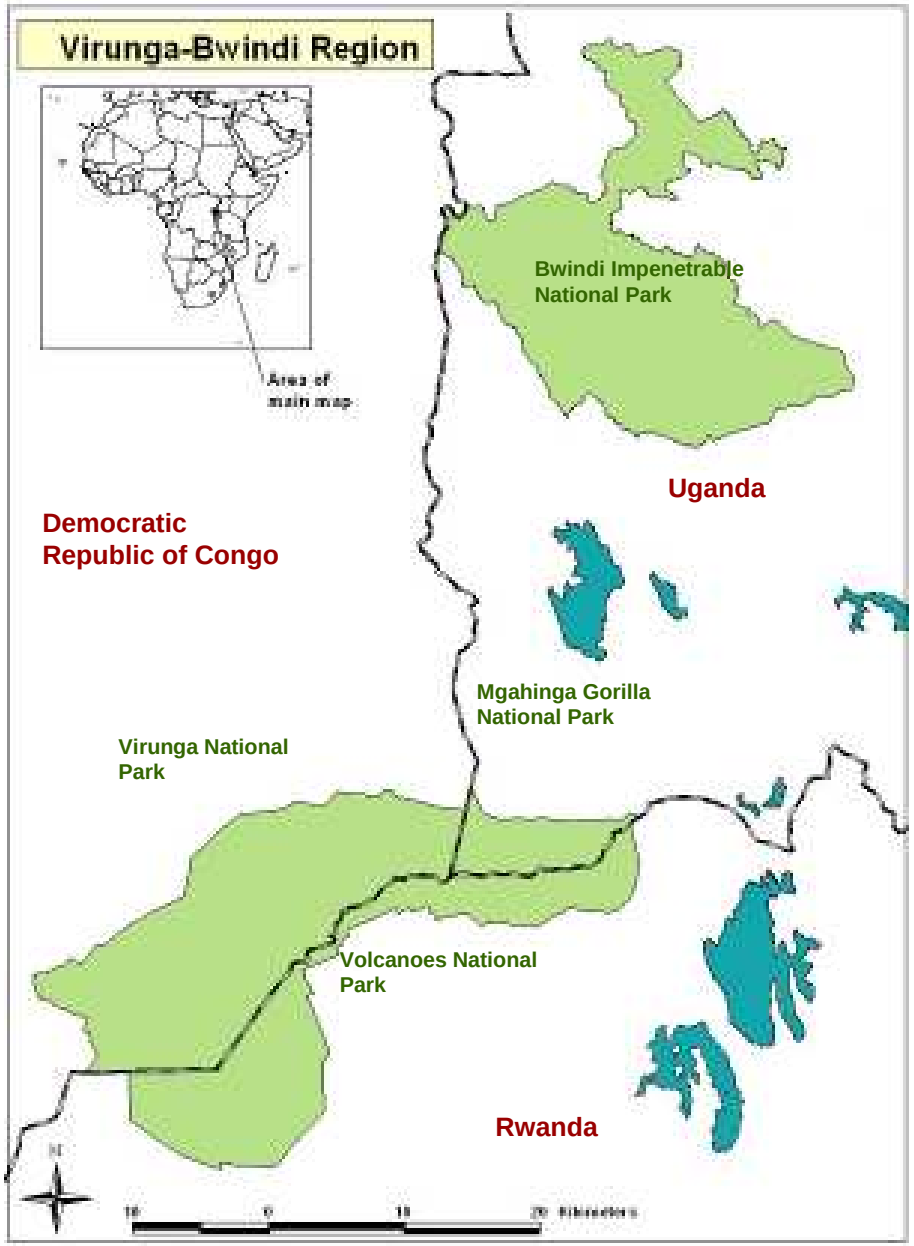
Transboundary areas

Regional networks



Improved gap assessments

Transboundary protected areas in Africa



Transboundary protected areas in Africa

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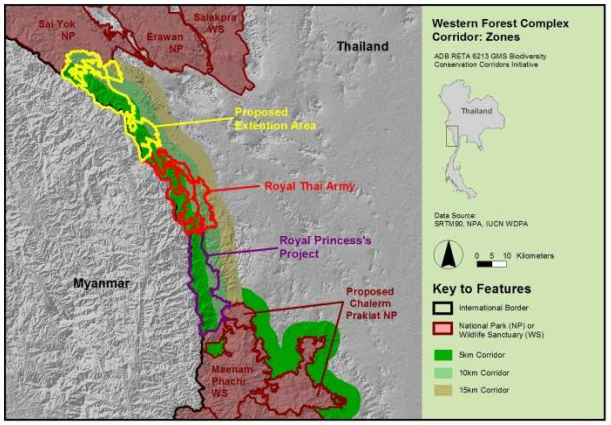

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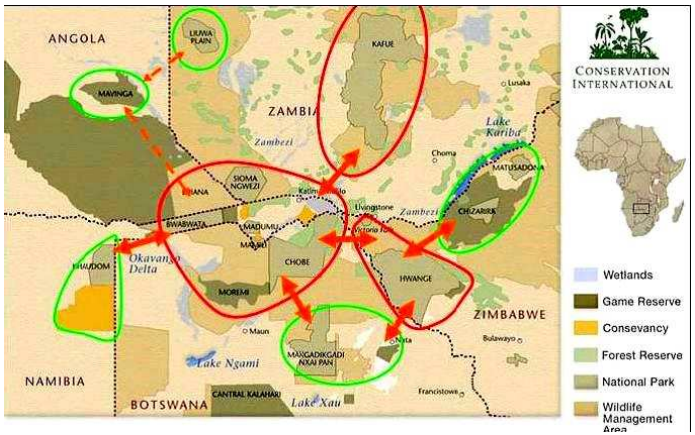

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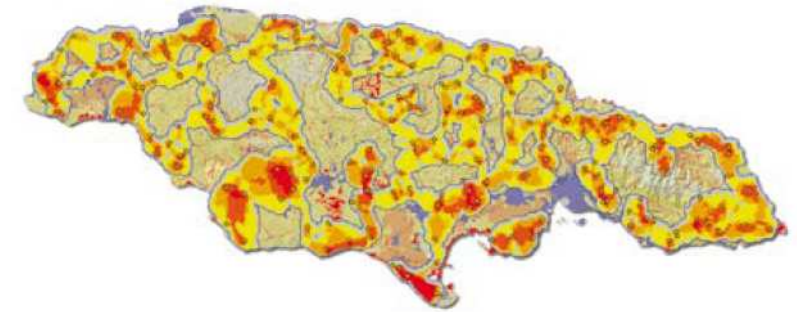
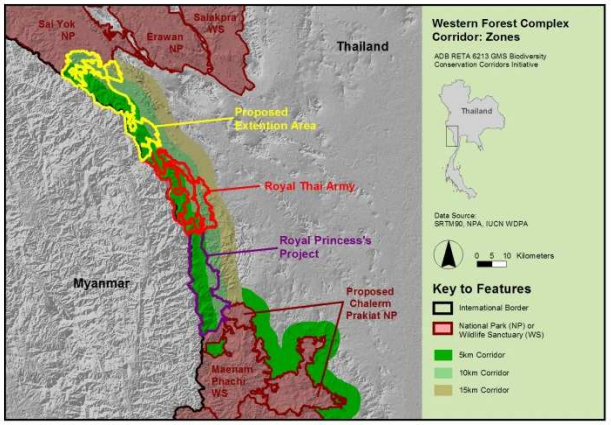


Improved gap assessments


Mesoamérica
¨Áreas Naturales Protegidas ¨
LEYENDA
Corredores Actuales en Gestión Julio 2006
Corredores Propuestos
Áreas Protegidas
Cuerpos de Agua
Límite Internacional
Capital
Ciudad
ESCALA
200
0
200
400 Kilometers
Cancun
Merida
Campeche
Villahermosa
Belize City
Flores
Tuxtla Gutierrez
GUATEMALA
HONDURAS

Protected area spatial integration



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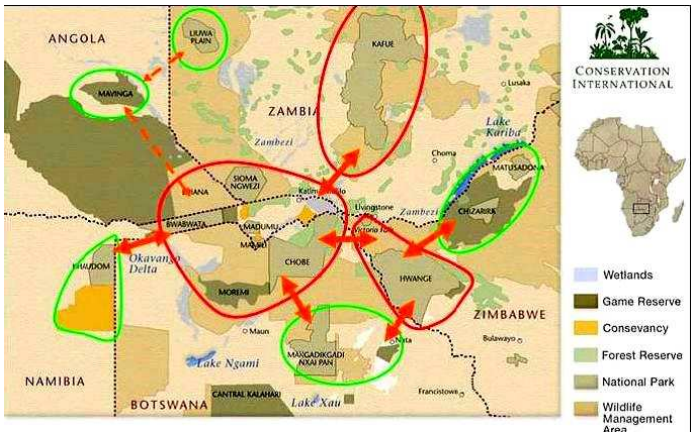

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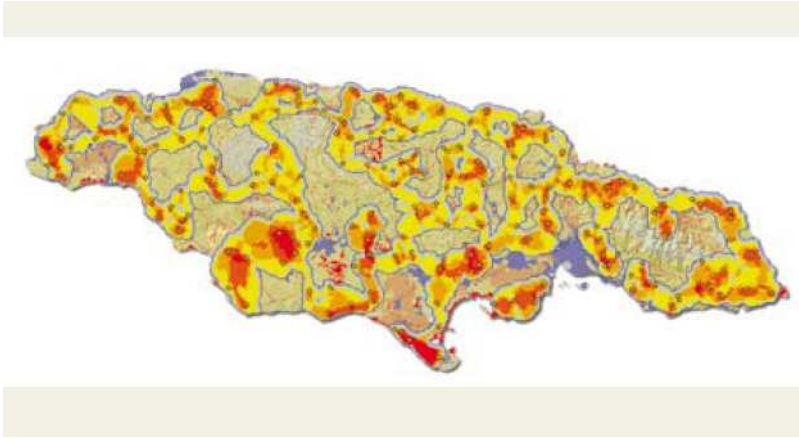

Improved gap assessments

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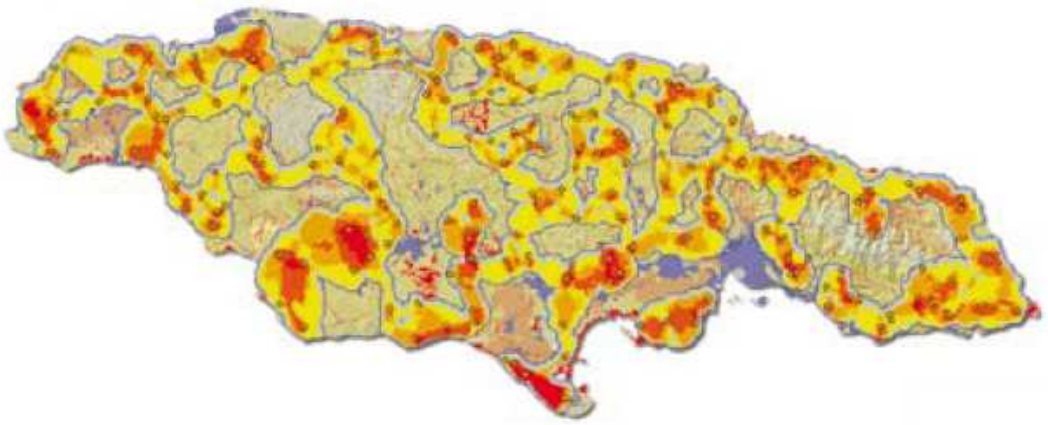
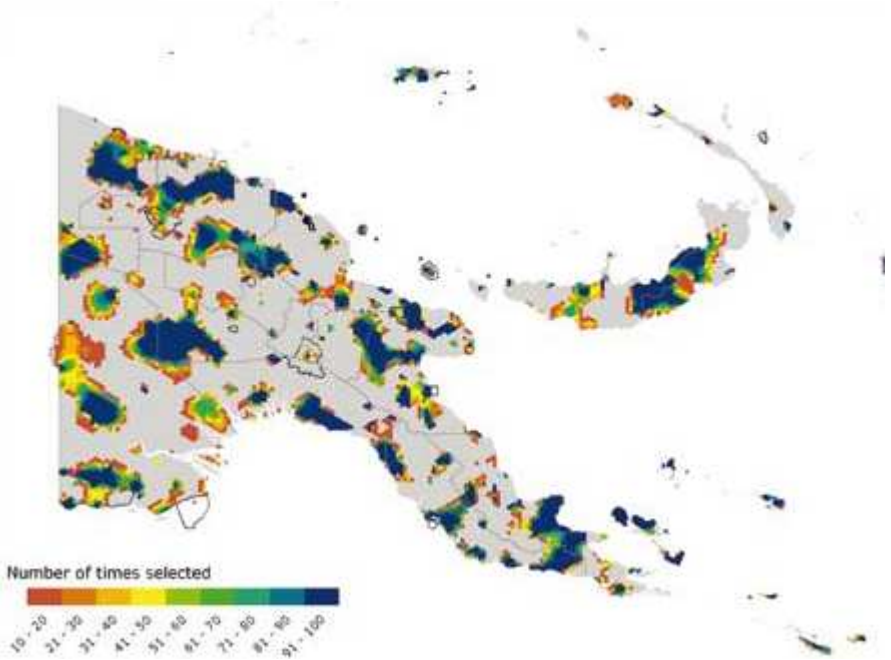
Jamaica



Papua New Guinea



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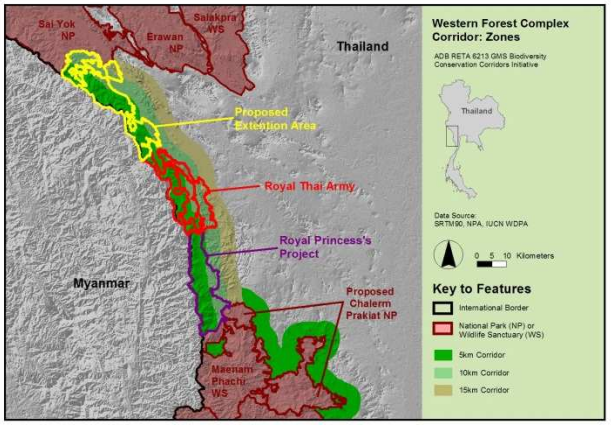

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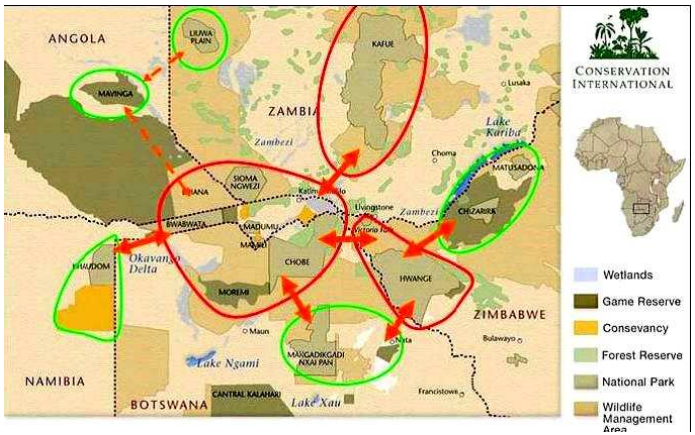

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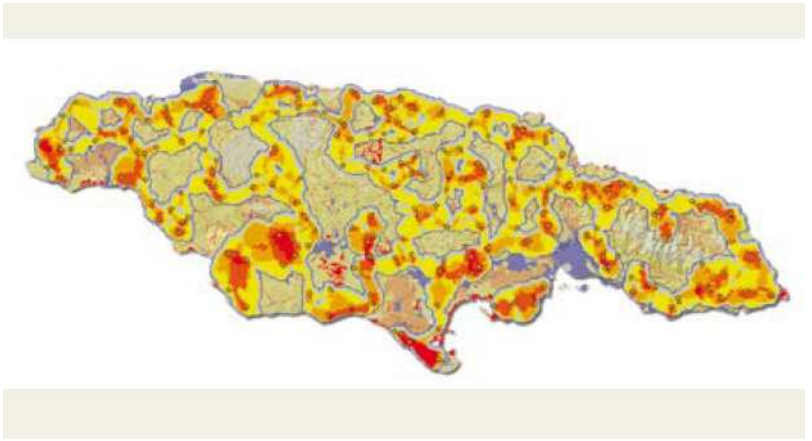
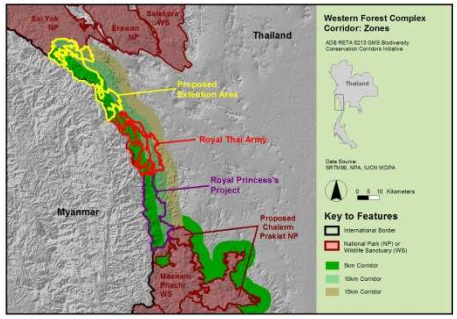


Improved gap assessments

Strengthening climate adaptation by incorporating resilience principles into:



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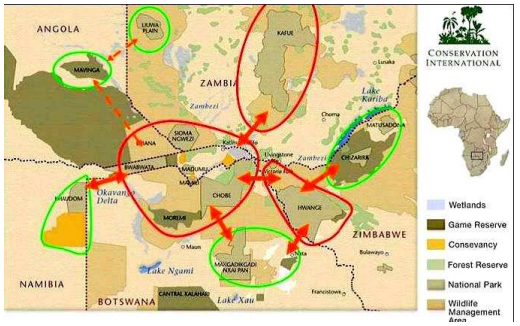

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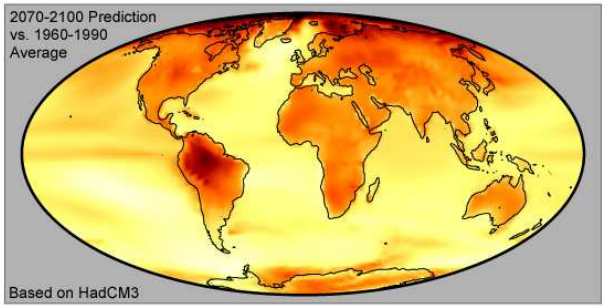
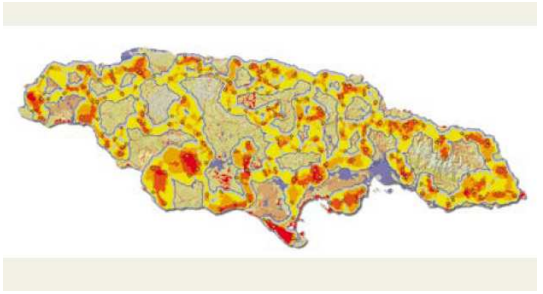
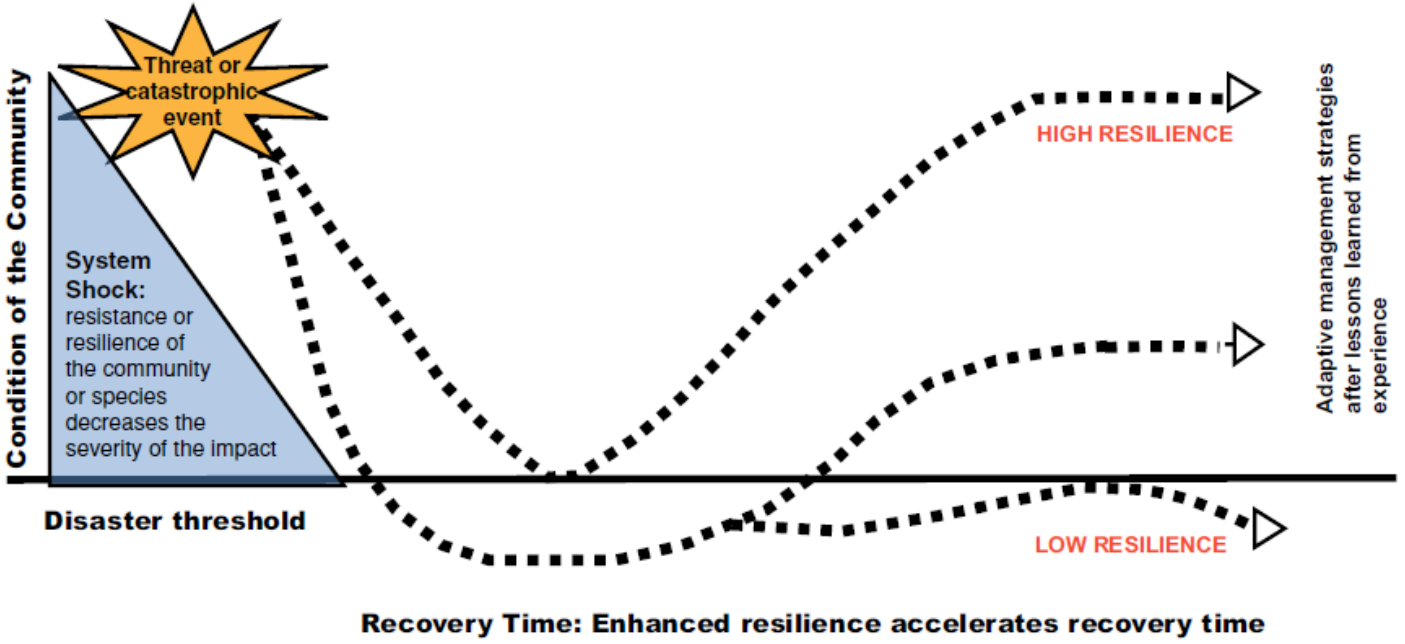


Regional networks



Improved gap assessments

Key concepts – ecosystem resilience



Pressures: Human impacts that affect biodiversity

Regime shift: Large persistent changes in an ecosystem

Tipping point: Threshold at which there is a regime shift

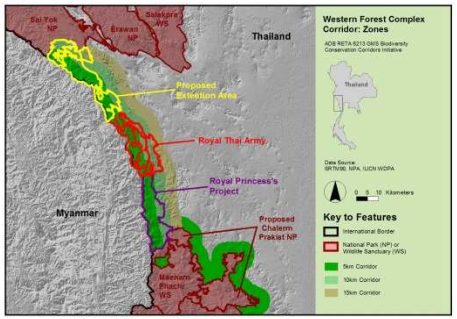
Key concepts – landscape resilience

Ecotones: Transition areas

Range shifts: Changes in species distribution

Refugia: Pockets of habitat that remain undisturbed

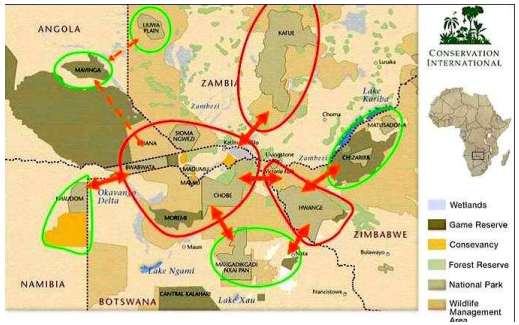
Strengthening climate adaptation by incorporating resilience principles into:



Connectivity corridors

- Identify climate-related bottlenecks
- Orient corridors to facilitate climate connectivity
- Locate corridors in ecotones (areas of transition)
- Include climate-resilient patches within corridors
- Link national corridors with regional corridors

Strengthening climate adaptation by incorporating resilience principles into:



Transboundary areas

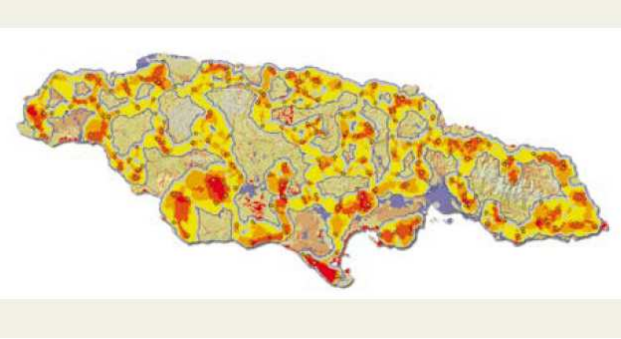
- Share national climate adaptation plans across boundaries, and incorporate into transboundary management
- Collaborate on translocation of species across boundaries
- Manage transboundary areas for the maintenance of vulnerable ecosystem services
- Collaborate in transboundary restoration in key areas

Strengthening climate adaptation by incorporating resilience principles into:

Regional networks

- Plan regional networks at landscape, national and regional scales
- Focus on protecting large, intact functioning ecosystems that will remain as biodiversity sources
- Include pockets of refugia (e.g., north facing slopes)

Strengthening climate adaptation by incorporating resilience principles into:



Improved gap assessments

- Focus on underlying features (bedrock, slope, aspect, soils)
- Include species and ecosystems most vulnerable to climate change
- Include species and ecosystems most resistant to climate change
- Incorporate predictive modeling into gap assessment
- Include connectivity in gap assessment

WHAT DOES PROTECTED AREA INTEGRATION MEAN?

1. Spatial integration
2. **Sectoral integration**

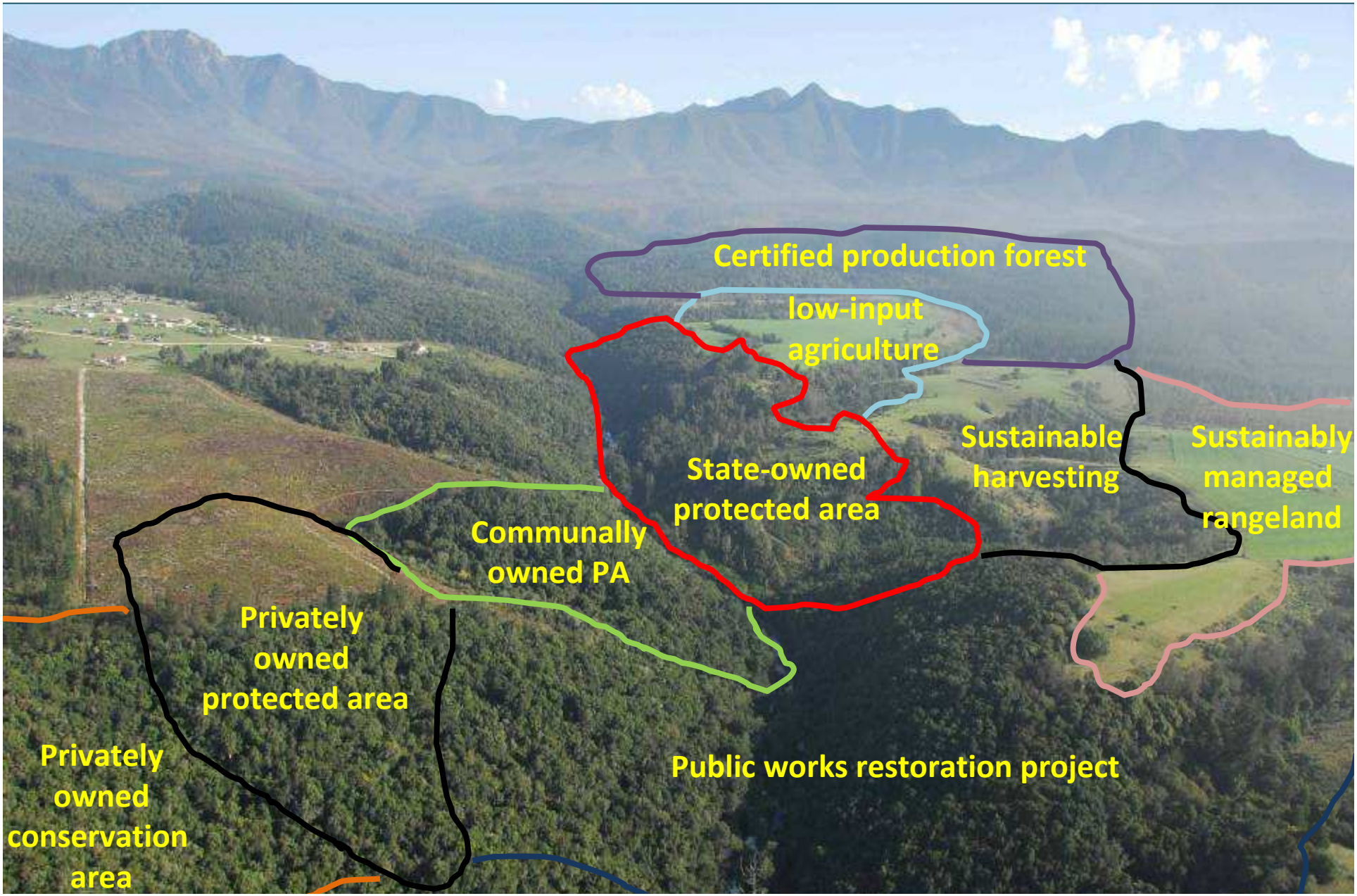
SECTORAL INTEGRATION

Ensuring that related sectors minimize impacts on biodiversity within protected areas….

…involving many key sectors….

Land use planning	Agriculture	Waste management
Transportation	Grazing	Invasive species policies
Energy	Forestry	Legal environment
Tourism	Agroforestry	Water management
Wildlife policies	Fisheries	National security

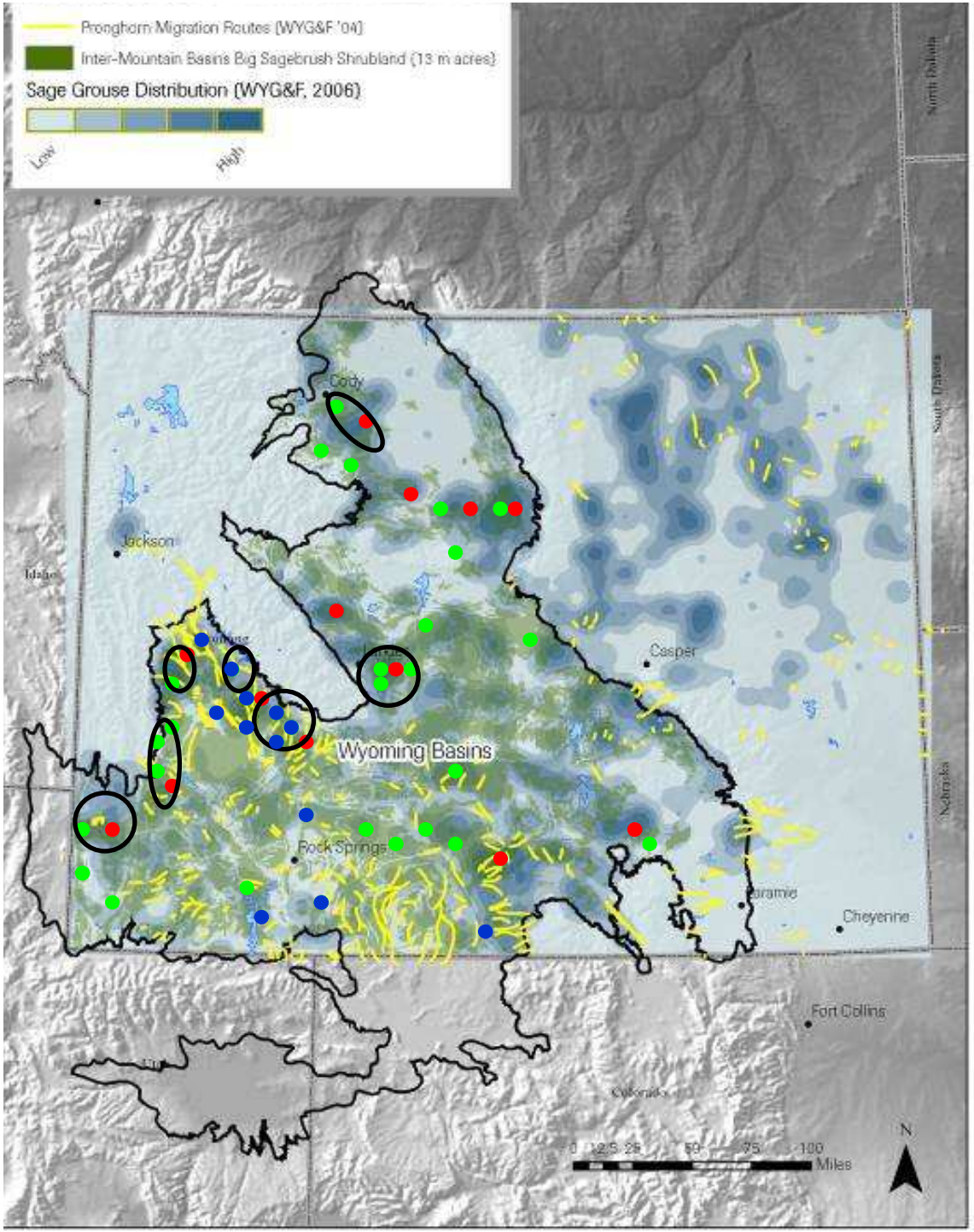
…to create a climate-resilient landscape



What is mainstreaming?

DEFINED AS:

The internalization of biodiversity conservation goals into economic and development policies and programs, so that they become an integral part of the functioning of these sectors.



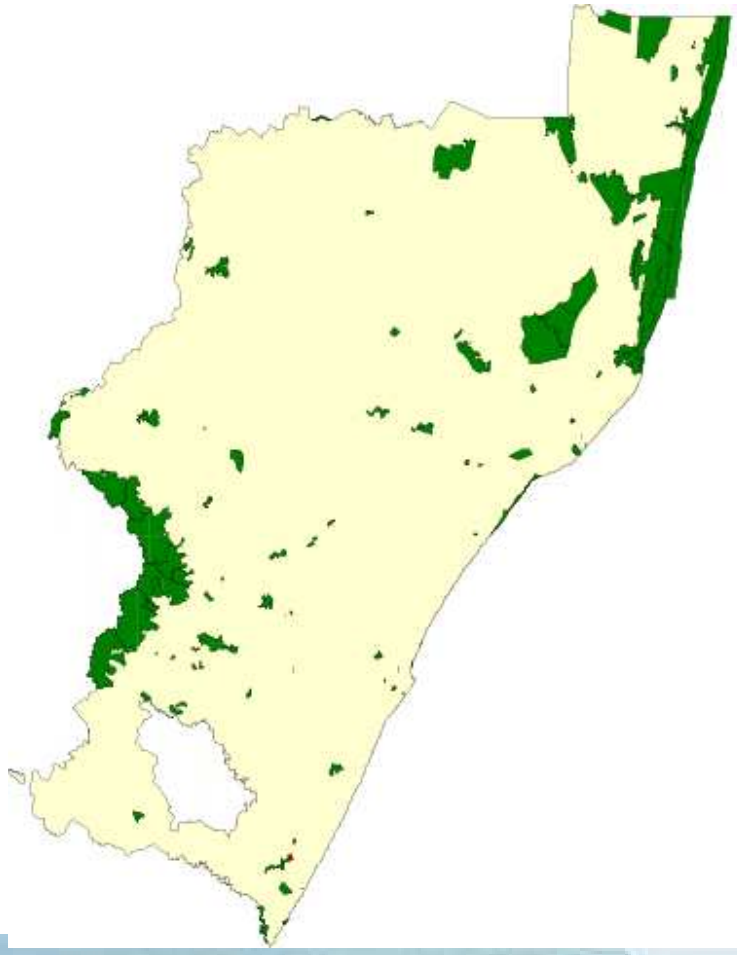
Mainstreaming biodiversity into the energy sector in Wyoming, U.S.

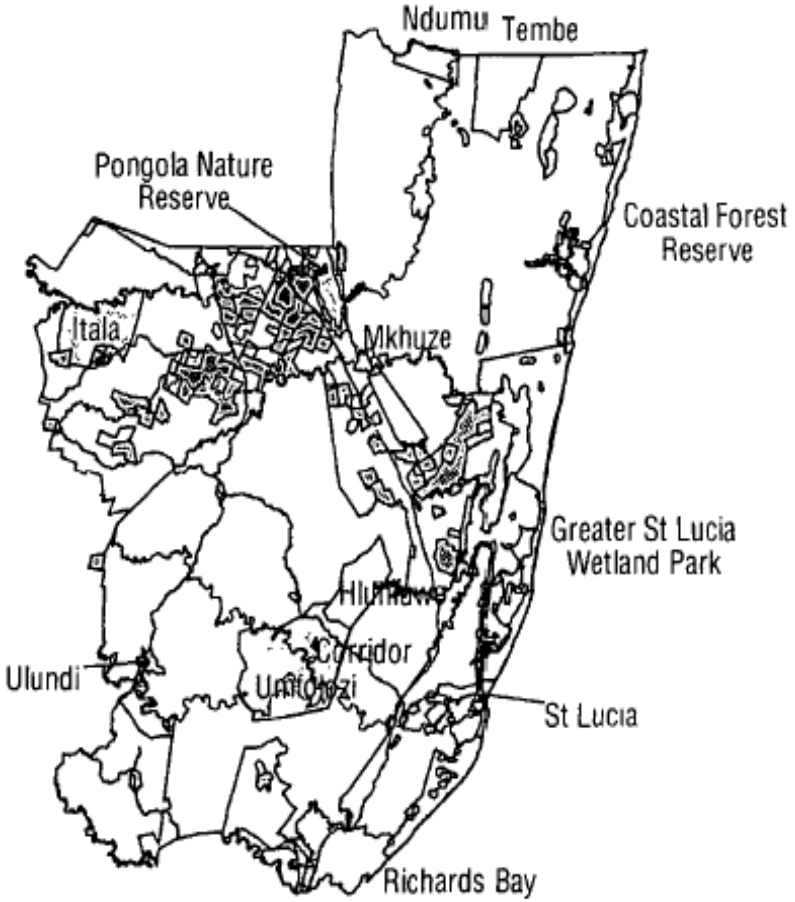
Example 1: Wyoming

- An NGO shared information with BP on areas of high biodiversity value
- BP developed a voluntary biodiversity offset program
- BP incorporated connectivity and biodiversity issues into environmental assessments and standard operating procedures
- BP paired with the NGO to measure and mitigate impacts on biodiversity

Mainstreaming biodiversity into game ranches in South Africa

The importance of game reserves in KZN





Example 2: KwazuluNatal

- The focus was on developing a game ranchers' association
- KZN helped create a legal framework to support private ownership of land and wildlife
- They provided technical support to ranchers
- They provided financial incentives for private game ranches
- Ranchers used sales from ranches to help fund protected areas
- KZN helped to remove physical barriers between reserves

MAJOR OPPORTUNITY:
Landscape linkages between formal protected areas and private game ranches

Climate Change Adaptation through PA Sectoral Integration and Mainstreaming

Revise sectoral policies

Revise PA valuation studies

Integrate into NAPAs

Include in threats assessment

Climate Change Adaptation through PA Sectoral Integration and Mainstreaming

Revise sectoral policies

- Develop payment for ecosystem services for water to incorporate PA values into economy
- Develop biodiversity offset policies for the energy sector
- Develop land use policies that protect coastal areas important for fisheries and storm buffers

Climate Change Adaptation through PA Sectoral Integration and Mainstreaming

Revise PA valuation studies

- Incorporate food security
- Incorporate water security
- Incorporate carbon storage
- Incorporate human health
- Incorporate national security issues

Climate Change Adaptation through PA Sectoral Integration and Mainstreaming

Integrate into NAPAs

- Establish new forest reserves
- Create buffer zones and corridors
- Restore and protect critical fisheries habitat
- Eradicate invasive species likely to exacerbate climate impacts

Climate Change Adaptation through PA Sectoral Integration and Mainstreaming

Incorporate into threat assessments

- Include an assessment of threat synergies with climate change (e.g., fire, invasives, logging)
- Include an assessment of ecosystem services vulnerable to climate impacts
- Incorporate climate into environmental impact assessments (EIAs)

INSTRUCTIONS

Complete worksheet in small groups

	Stratégie d'adaptation au changement climatique	Exemples	Remarques
Adaptation au changement climatique en utilisant l'intégration spatiale	Intégrer les principes de résilience dans les couloirs de connectivité	• Repérez les corridors de connectivité afin de faciliter des changements dans les gammes des espèces • Connectez corridors nationaux avec des corridors régionaux	
	Intégrer les principes de résilience dans les zones transfrontalières	• Collaborer à la translocation d'espèces à travers les frontières • Placer les zones transfrontalières dans écotones	
	Intégrer les principes de résilience dans les réseaux régionaux	• Inclure les grandes dimensions, intactes fonctionnement des écosystèmes dans les réseaux régionaux • Inclure les poches des refuges	
	Intégrer les principes de résilience dans les évaluations des lacunes écologiques	• Focus sur les caractéristiques sous-jacentes • Inclure la connectivité dans les évaluations des lacunes écologiques	
AU CLIMAT PAR INTÉGRATION SECTORIELLE	Réviser les politiques sectorielles pour tenir compte des impacts du changement climatique	• Élaborer des politiques pour les paiements des services écosystémiques, tels que l'eau • Élaborer des politiques compensation pour la biodiversité pour le secteur de l'énergie	
	Intégrer les services écosystémiques qui sont liés au changement climatique dans les études qui évaluent la valeur économique et sociale des aires protégées	• La sécurité alimentaire et la sécurité de l'eau Inclure • Inclure le stockage du carbone	
	Intégrer les aires protégées dans les plans nationaux d'adaptation d'action	• Restaurer et protéger l'habitat essentiel de la pêche • Éliminer les espèces envahissantes qui va	

INSTRUCTIONS

1. Identify the 2 or 3 most feasible and relevant strategies in your context
2. Discuss how you might implement that strategy
3. Develop a draft work plan (identify key steps)

1. Identifier les 2 ou 3 stratégies les plus faisables et pertinents dans votre contexte
2. Discuter de la façon dont vous pourriez mettre en œuvre cette stratégie
3. Élaborer un plan de travail provisoire (identifier les étapes clés)

INSTRUCTIONS

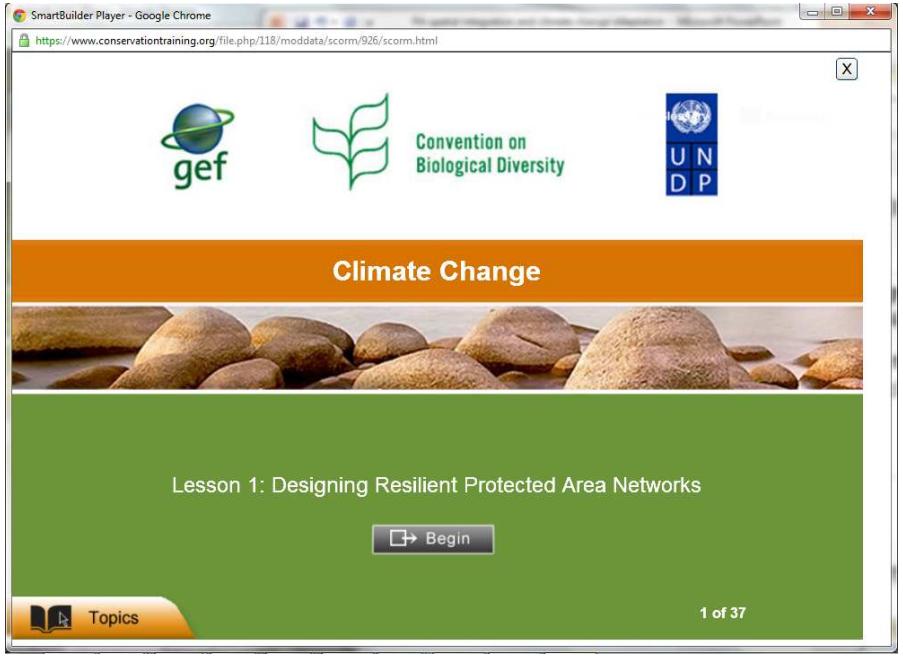
1. Unzip the attachment
2. Save the files onto a folder on your computer hard drive
3. Then click on “player” to launch the module

4. Décompresser la pièce jointe,
5. puis enregistrez les fichiers dans un dossier sur votre disque dur de l'ordinateur.
6. Cliquez ensuite sur "player" pour lancer le module

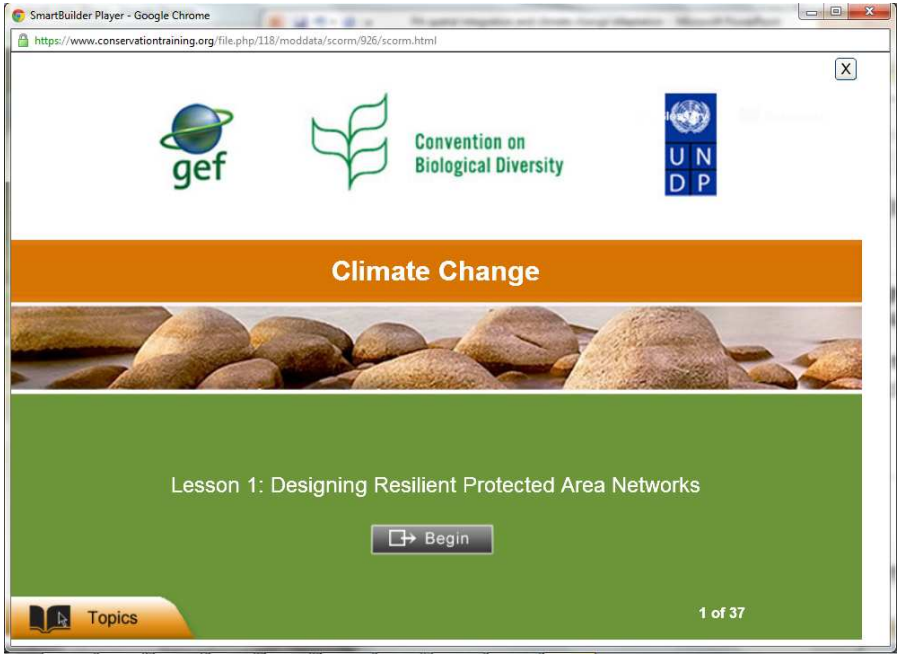
INSTRUCTIONS

Strategy 1: Incorporate protected areas into NAPA	Who	When	Cost
1. Seek agreement with department responsible for developing NAPA			
2. Identify specific sub-strategies for integrating protected areas into NAPA (increase forest protected areas, increase mangrove protection)			
3. Consult with experts on NAPA revisions			
4. Formally approve NAPA			

IF YOU WANT MORE DETAIL



Climate change: Lesson 1, (slides 20-35) (in English and French)



Climate change: Lesson 3, (slides 5-19) (in English only)