



Building on an Initial Wetland Inventory and Classification to Map Ramsar Wetland Sites in Mexico



1974
DUMAC

1990
Priority
Wetlands

Represents the first-ever wetland inventory
and classification effort in Mexico



1991

Wetlands Inventory and Classification in



Characteristics and conditions as the base
line information.



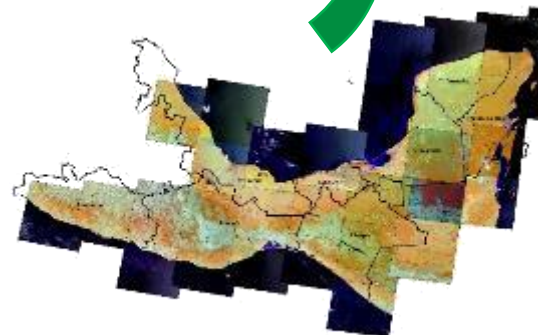
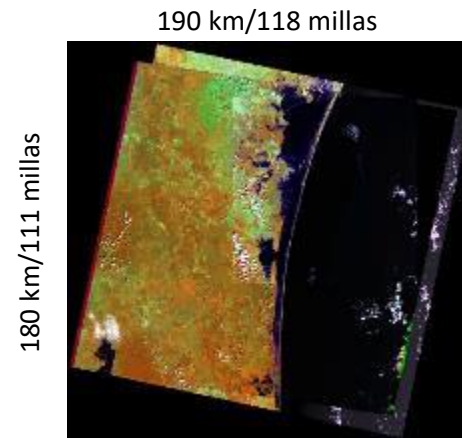
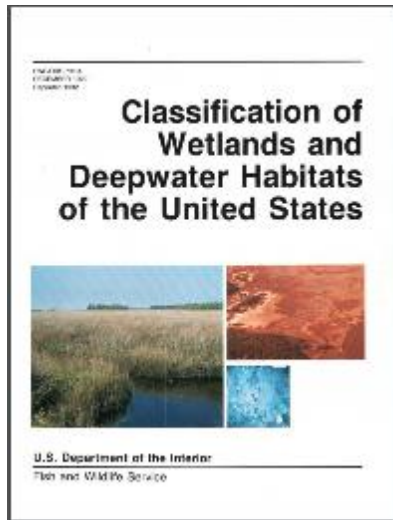
2019
Finish

Wetlands Inventory and Classification in México

Scale: 1: 100, 000

GENERAL PROCEDURE

Classification scheme based on Cowardin *et al* 1979.



REMOTE SENSING

- Landsat 4-5 and 8
- ERDAS
- Unsupervised /Supervised Classifications

VERIFICATION

- Ground truth verification

GEOGRAPHIC INFORMATION SYSTEM

- Final classification
- Accuracy assessment
- Confusion matrix (95%)

Positive facts:

- Classification compatible
- Special modifiers
- It can include new classes

ESTUARINE



Hammock

PALUSTRINE



**Sinkhole
Emergent Vegetation**

PALUSTRINE



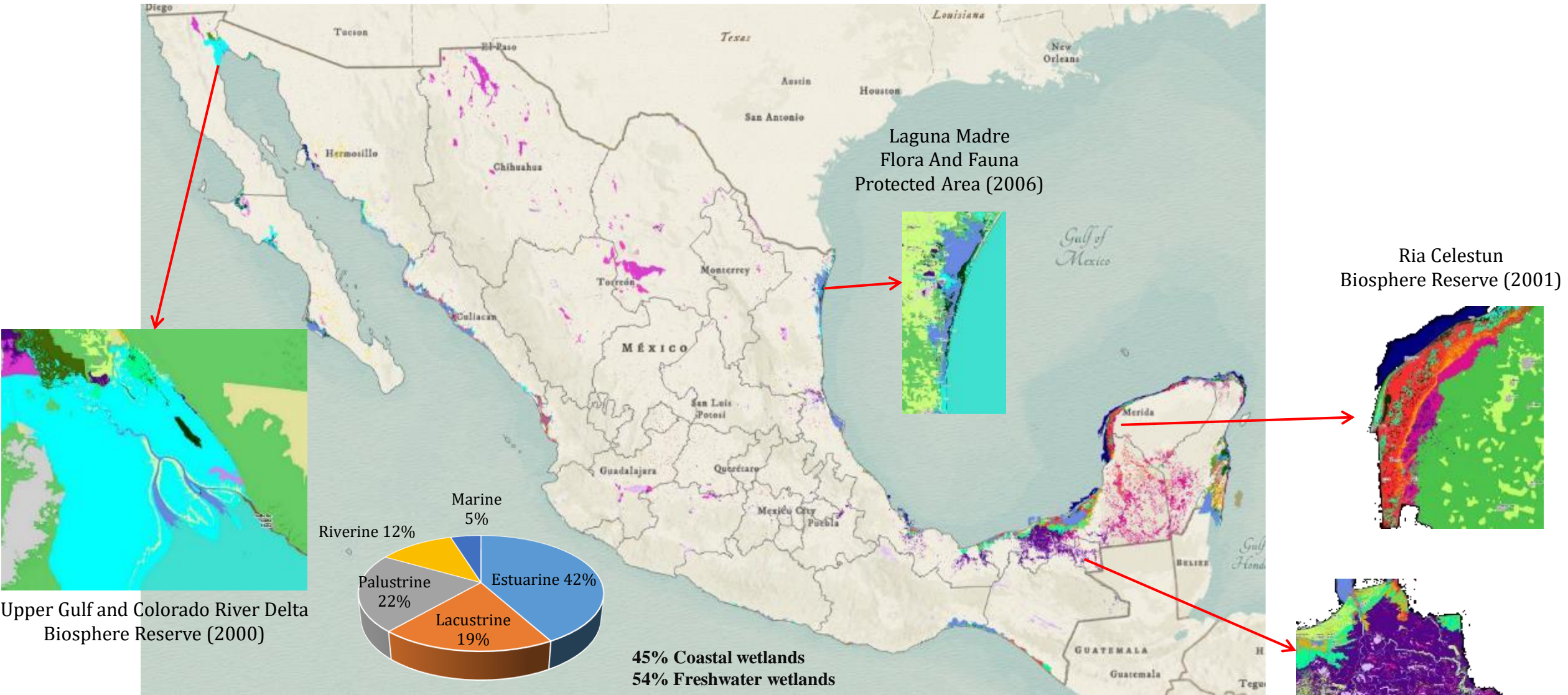
**Sinkhole
Open Water**

PALUSTRINE



**Sinkhole
Aquatic Vegetation**

APPLICATIONS: Use of the WI by Federal and State Government










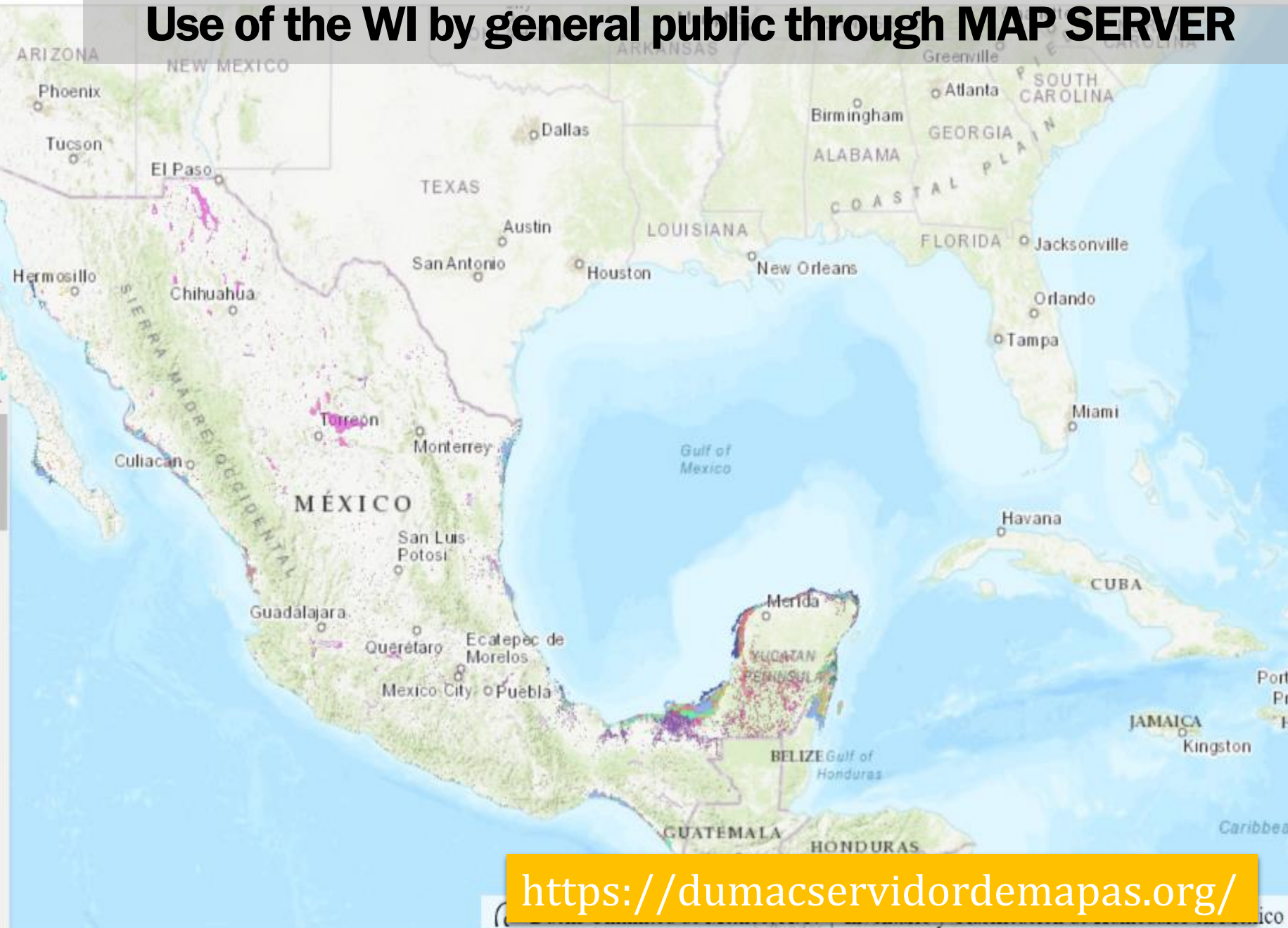
11.4 Mill Ha/ 28.17 Acres

Use of the WI by general public through MAP SERVER



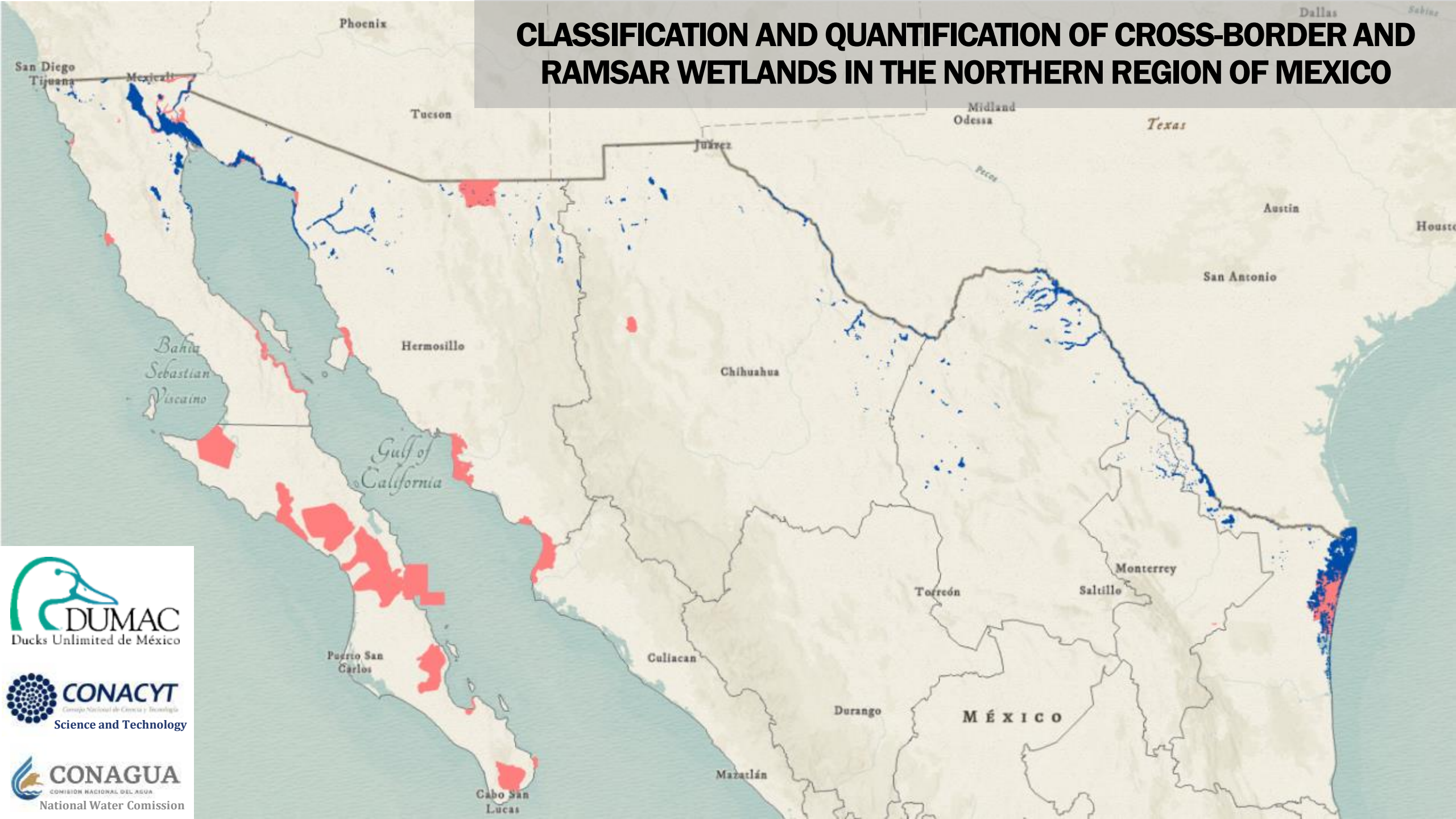
Inventario y Clasificación de Humedales en México

-  M1OW - Marino Submareal Agua Abierta
-  M1AB - Marino Submareal Vegetación Acuática
-  M1REEF - Marino Submareal Arrecife
-  M2BB - Marino Intermareal Playa
-  M2AB - Marino Intermareal Vegetación Acuática
-  M2SS - Marino Intermareal Manglar
-  E1OW - Estuarino Submareal Agua Abierta



<https://dumacservidordemapas.org/>

CLASSIFICATION AND QUANTIFICATION OF CROSS-BORDER AND RAMSAR WETLANDS IN THE NORTHERN REGION OF MEXICO



DUMAC
Ducks Unlimited de México

CONACYT
Consejo Nacional de Ciencia y Tecnología
Science and Technology

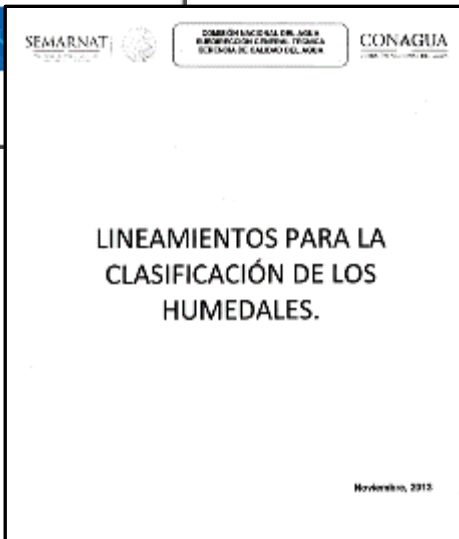
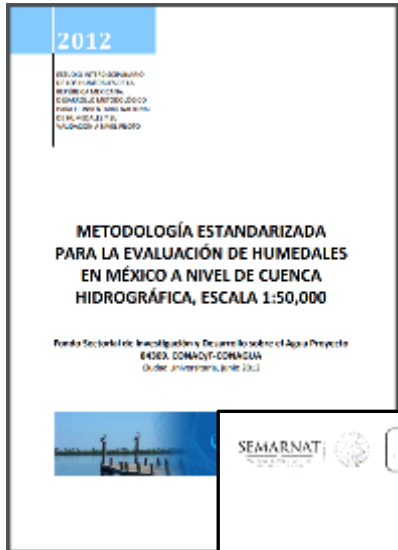
CONAGUA
COMISION NACIONAL DEL AGUA
National Water Commission

Classification and Quantification of Cross-border and Ramsar Wetlands in the Northern Region of Mexico

Scale: 1: 50, 000

GENERAL PROCEDURE

- Classification scheme based on Guidelines of National Water Commission (CONAGUA)



REMOTE SENSING

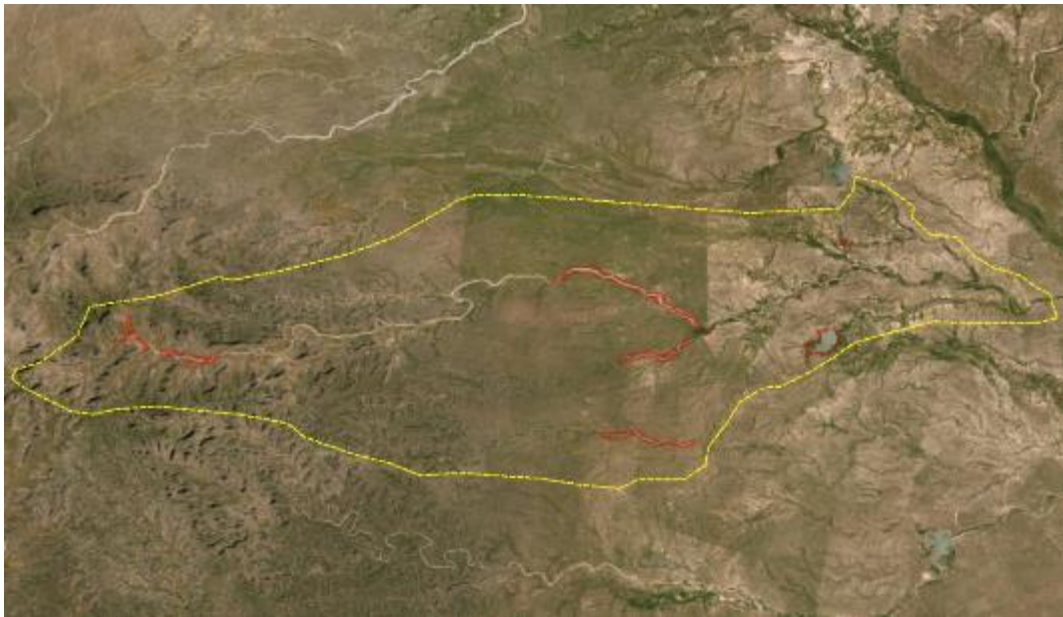
- Sentinel 2 (8a-11-4)
- ERDAS
- Unsupervised Classification

GEOGRAPHIC INFORMATION SYSTEM

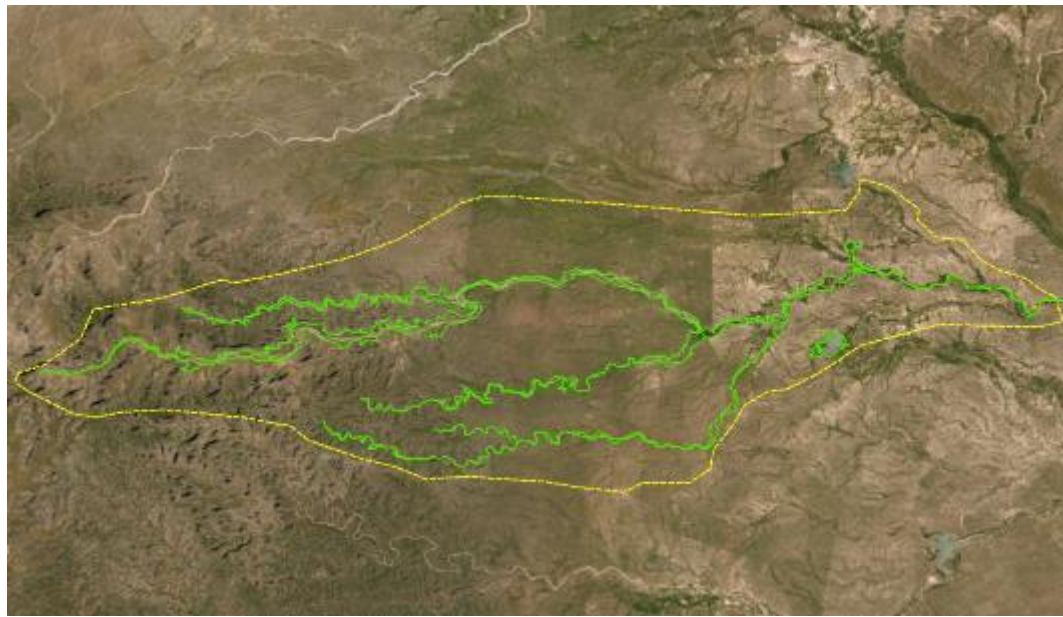
- Based on DUMAC Wetland Inventory

VERIFICATION

- Fieldwork and Data Collection Form



INH CONAGUA 1:250 000



New Classification 1: 50, 000

Río San Diego Watershed

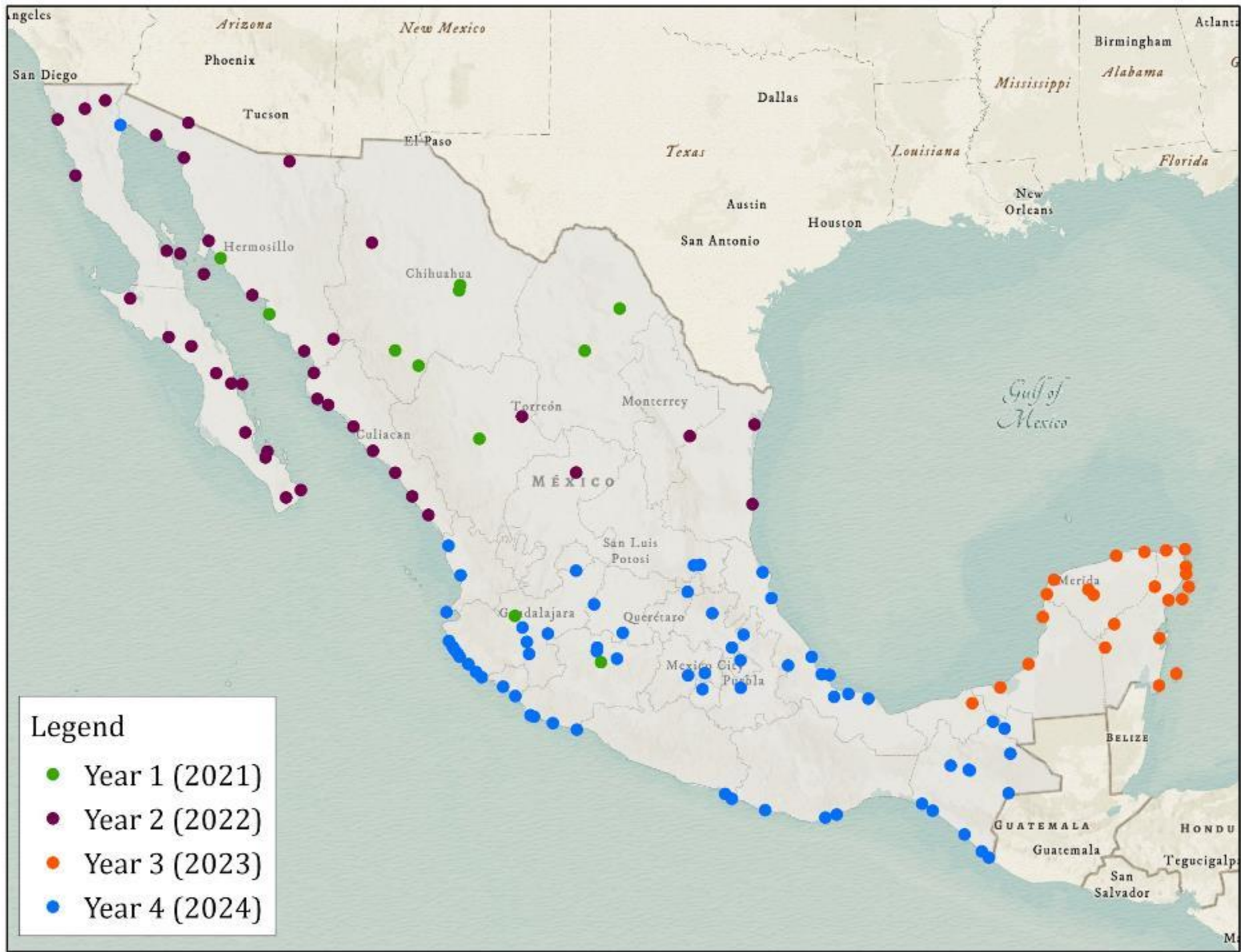


Río Salado Watershed

Conserving Wetland Biodiversity: Capacity Building and Mapping Mexican Wetlands for Compliance with the Ramsar Convention



National Commission of Natural Protected Areas



❑ Classification scheme based on Cowardin *et al.*

FGDC-STD-004-2013
Second Edition

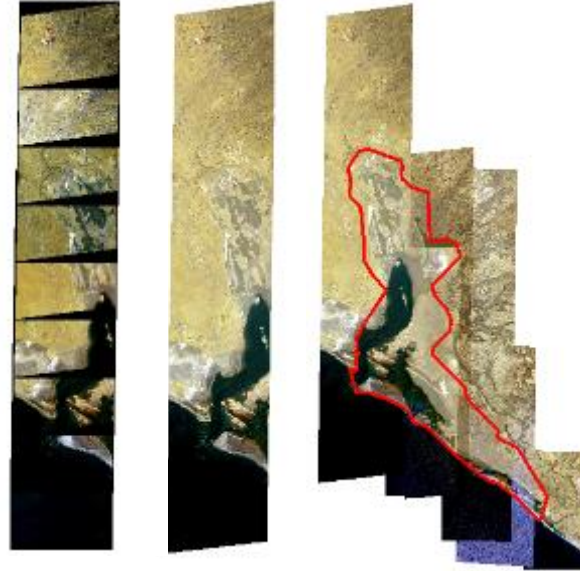


Classification of Wetlands and Deepwater Habitats of the United States

Adapted from Cowardin, Carter, Golet and LaRoe (1979)

Wetlands Subcommittee
Federal Geographic Data Committee

August 2013



REMOTE SENSING

- WorldView 2 y 3
- eCognition 9 y 10
- Object Based Image Analysis
- Unsupervised Classification

GEOGRAPHIC INFORMATION SYSTEM

- Based on DUMAC Wetland Inventory

VERIFICATION

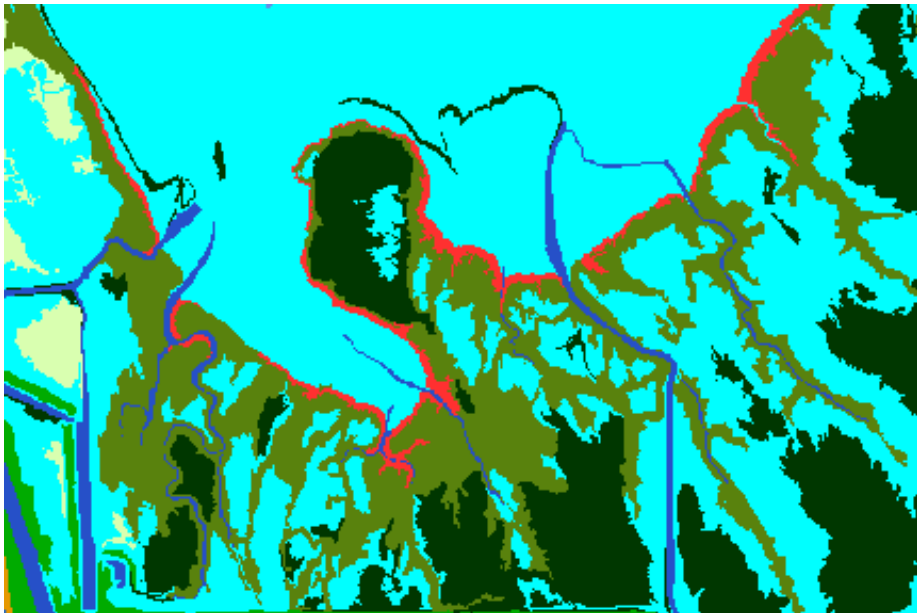
- Fieldwork










World View Image

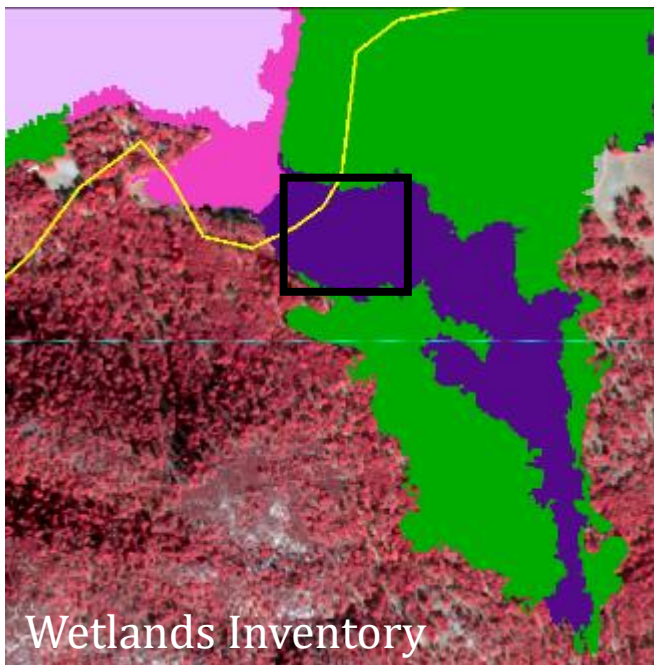
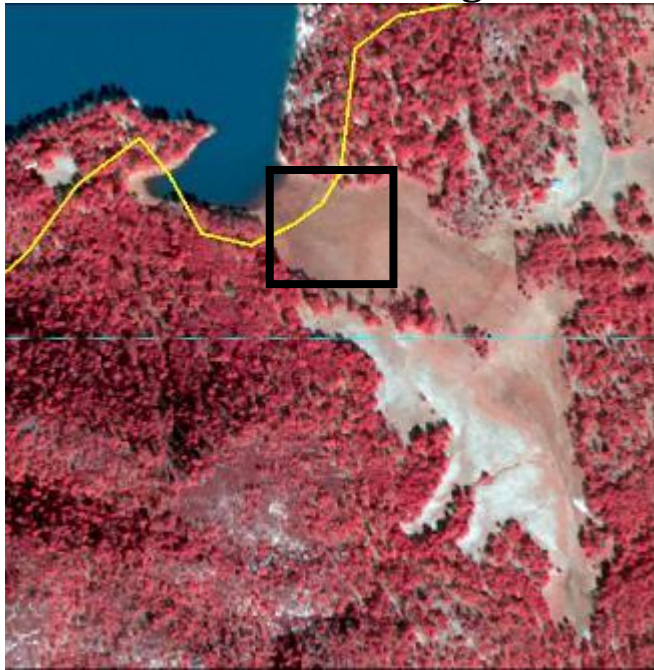


Wetlands Inventory








- | | | |
|---|--|------------|
|  | Estuarine Intertidal Aquatic Bed Algal | E2AB1 |
|  | Estuarine Intertidal Emergent | E2EM |
|  | Estuarine Intertidal Streambed | E2SB |
|  | Estuarine Intertidal Streambed Excavated | E2SBx |
|  | Estuarine Intertidal Scrub-Shrub Evergreen/ Emergent | E2SS7/E2EM |
|  | Estuarine Intertidal Scrub-Shrub Evergreen | E2SS7 |
|  | Estuarine Intertidal Unconsolidated Shore | E2US |

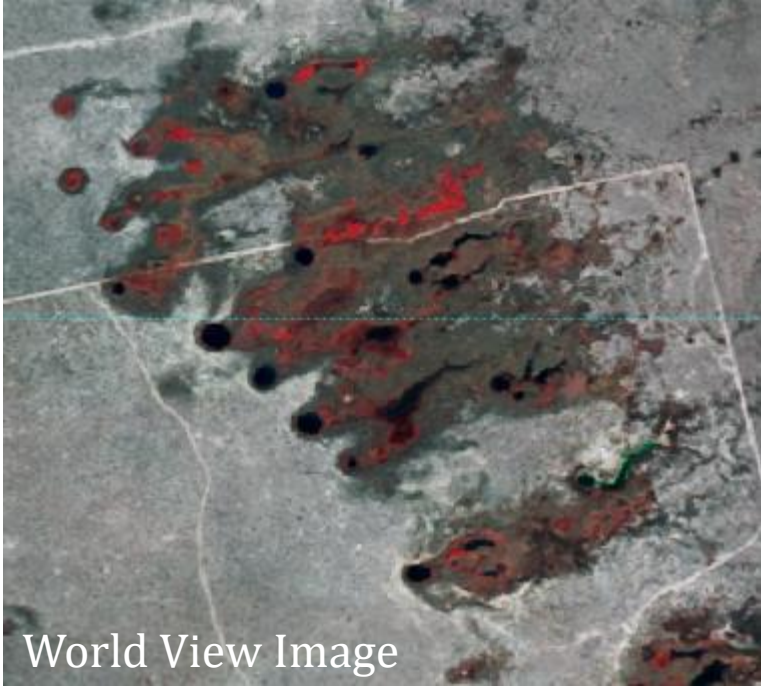
World View Image



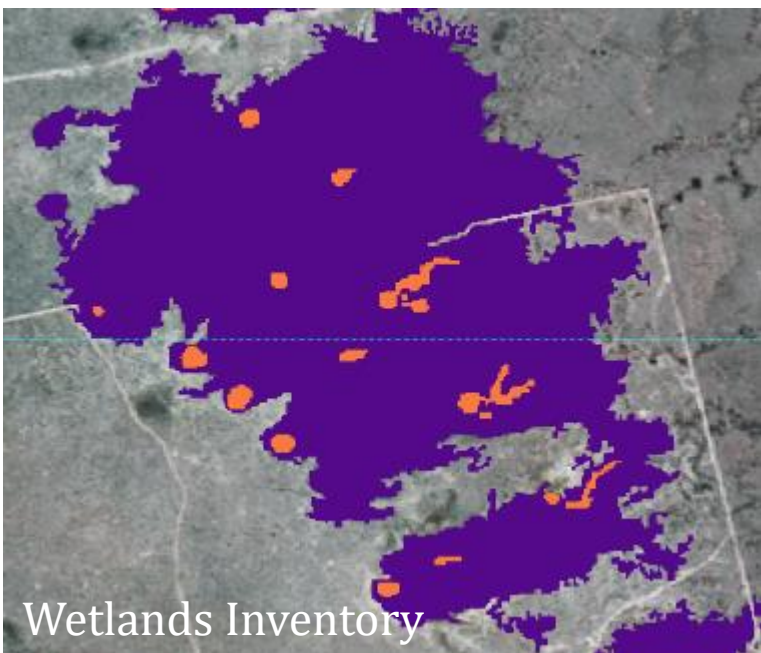
Wetlands Inventory



-  Lacustrine Limnetic Unconsolidated Bottom (L1UB)
-  Lacustrine Littoral Unconsolidated Shore (L2US)
-  Palustrine Emergent (PEM)
-  Palustrine Emergent Farmed (PEMf)
-  Ramsar Site





World View Image



Wetlands Inventory



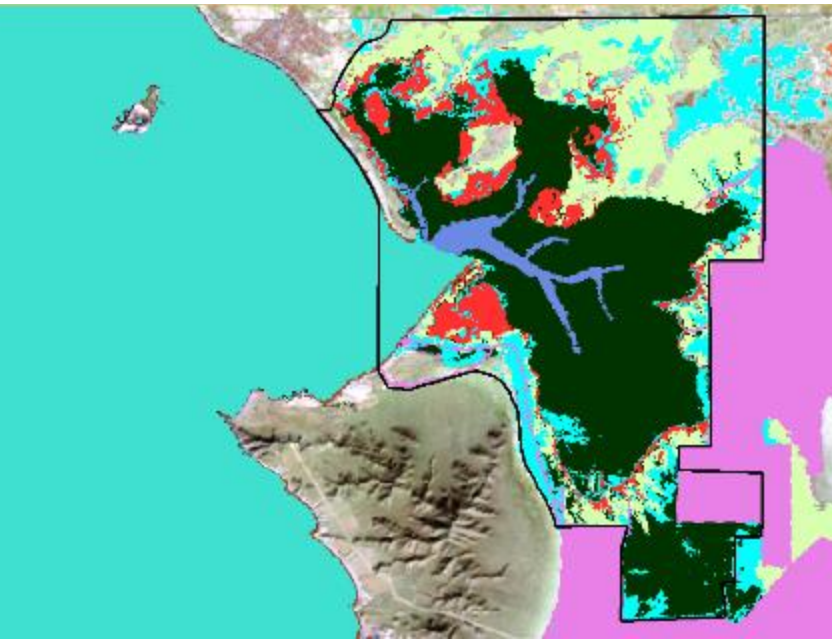
-  Palustrine Emergent
-  Palustrine Unconsolidated Bottom

- Marine Open Water
- Estuarine Subtidal Open Water
- Estuarine Intertidal Aquatic Bed
- Estuarine Intertidal Emergent Vegetation
- Estuarine Intertidal Mangrove
- Estuarine Intertidal Flat
- Estuarine Intertidal Flat Modified

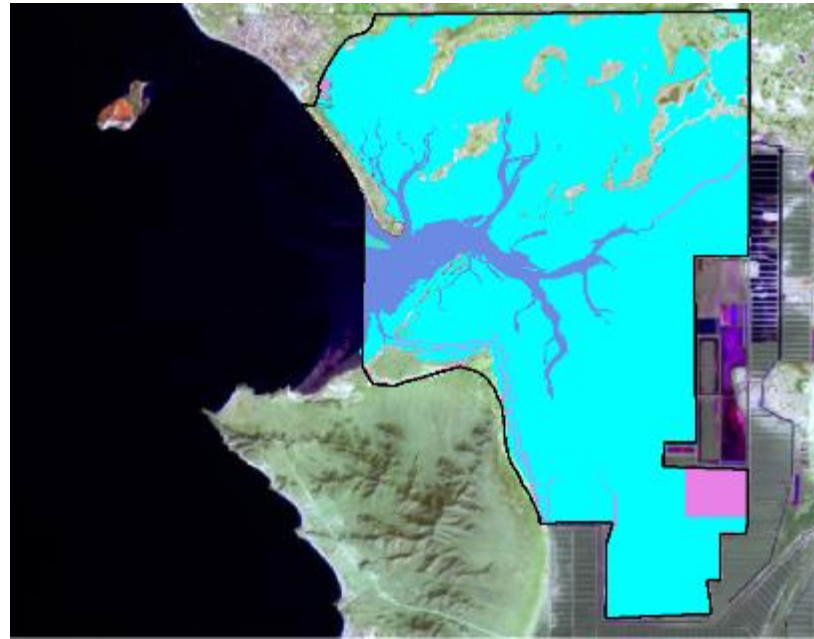
CONAGUA

- Coastal Strip
- Littoral
- Coastal lagoon
- Marsh
- Marsh Modified

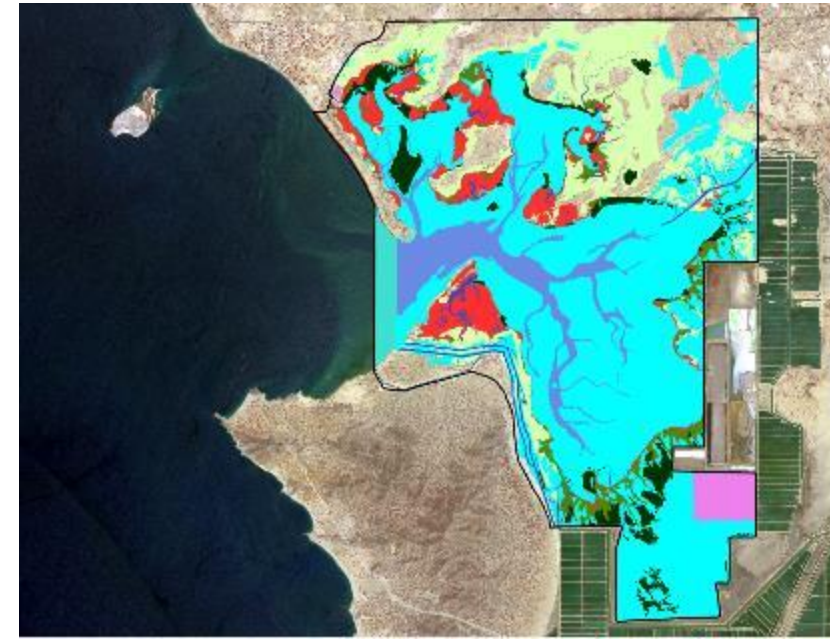
- | | |
|--|---|
| Marine Subtidal Unconsolidated Bottom | Estuarine Intertidal Streambed Excavated |
| Estuarine Subtidal Unconsolidated Bottom | Scrub-Shrub Evergreen/ Emergent |
| Estuarine Intertidal Aquatic Bed Algal | Estuarine Intertidal Scrub-Shrub Evergreen |
| Estuarine Intertidal Emergent | Estuarine Intertidal Unconsolidated Shore |
| Estuarine Intertidal Streambed | Estuarine Intertidal Unconsolidated Shore Diked/Impounded |



DUMAC Wetland Inventory and Classification of Wetland
1: 100, 000
LANDSAT imagery



Classification and Quantification of Cross-border and Ramsar Wetlands
1: 50, 000
SENTINEL imagery



Mexico Ramsar Wetland Mapping
1: 15, 000
WORLDVIEW imagery