

Chain of Coastal Wetlands at the Arid Pacific Coast of South America

Tabilo E., Burmeister J., Chávez-Villavicencio C., Zöckler C.

Johannes Burmeister
Manfred-Hermsen-Stiftung, Germany



Arid Pacific Coast of South America

Project Area

- Coastal strip of approx. 3,800 km length
- Río Tumbes in North-Western Peru
- Río Aconcagua in Northern Central Chile



Arid Pacific Coast of South America

Cold-Ocean Humboldt Current

- Arid climate
- Centers of coastal upwelling
- ENSO phenomenon



Arid Pacific Coast of South America

Sechura-Atacama Coastal Deserts

- Coastal deserts
- Scarcely distributed xeric shrubs



Arid Pacific Coast of South America

Northern-Transition: Tumbes-Sechura Dry Forest

- Tropical dry forest
- Southernmost mangrove forests at the neotropic Pacific coast



Arid Pacific Coast of South America

Southern-Transition: Chilean Coastal Matorral

- Xeric shrublands
- Sclerophyll vegetation



Arid Pacific Coast of South America

Freshwater Resource

- Rivers from the Andes
- Intensive use for agriculture, mining, electricity, and domestic purpose



Coastal Wetlands

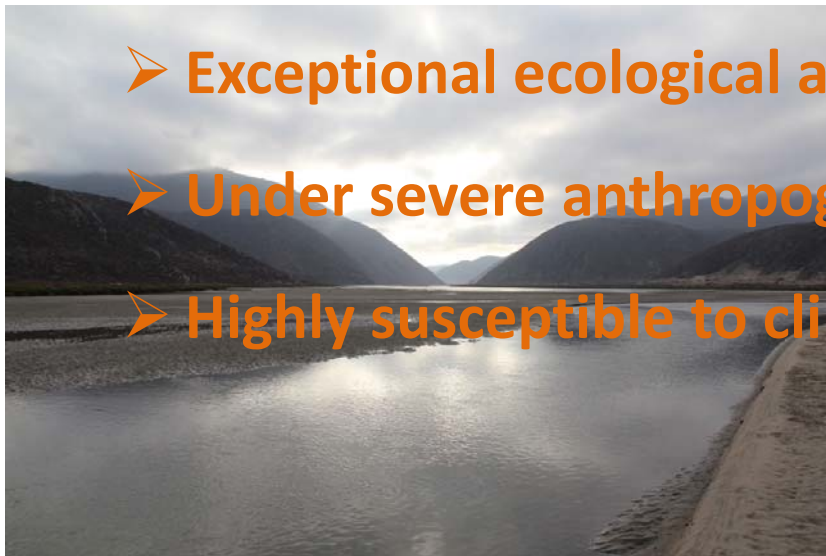
- Around 80 Sites (possibly more)
- Including shallow bays, coastal lagoons, river mouths, and estuaries

➤ **Local hotspots of biodiversity**

➤ **Exceptional ecological and socio-cultural value**

➤ **Under severe anthropogenic pressure**

➤ **Highly susceptible to climate change**



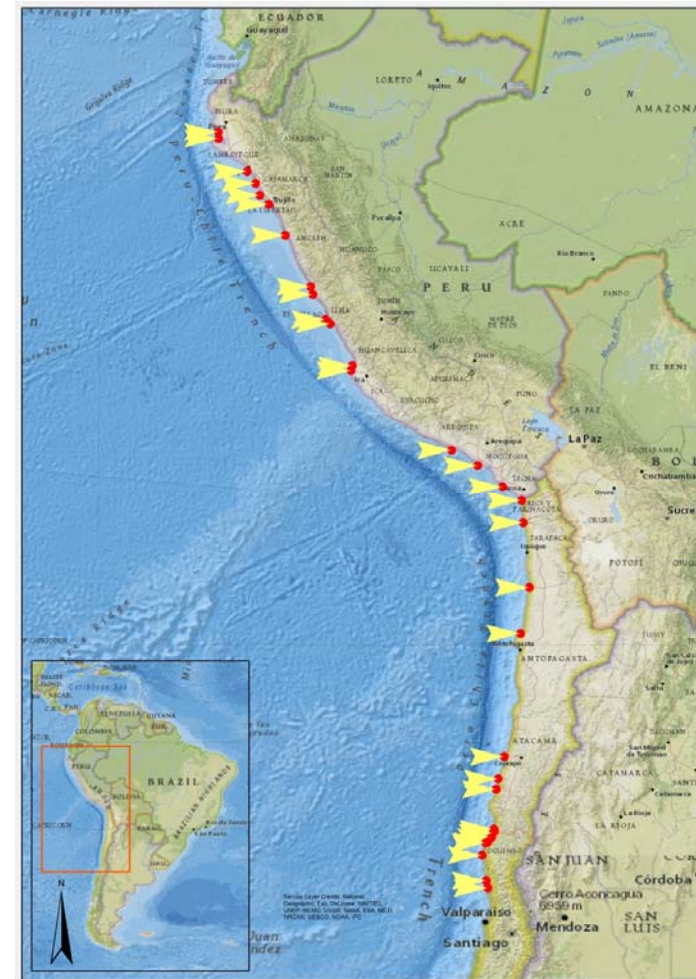
**...AND vital stepping stones for a variety of
Migratory Shorebird Species**



Rapid Assessment of Coastal Wetlands

34 Sites between Sechura and Los Vilos

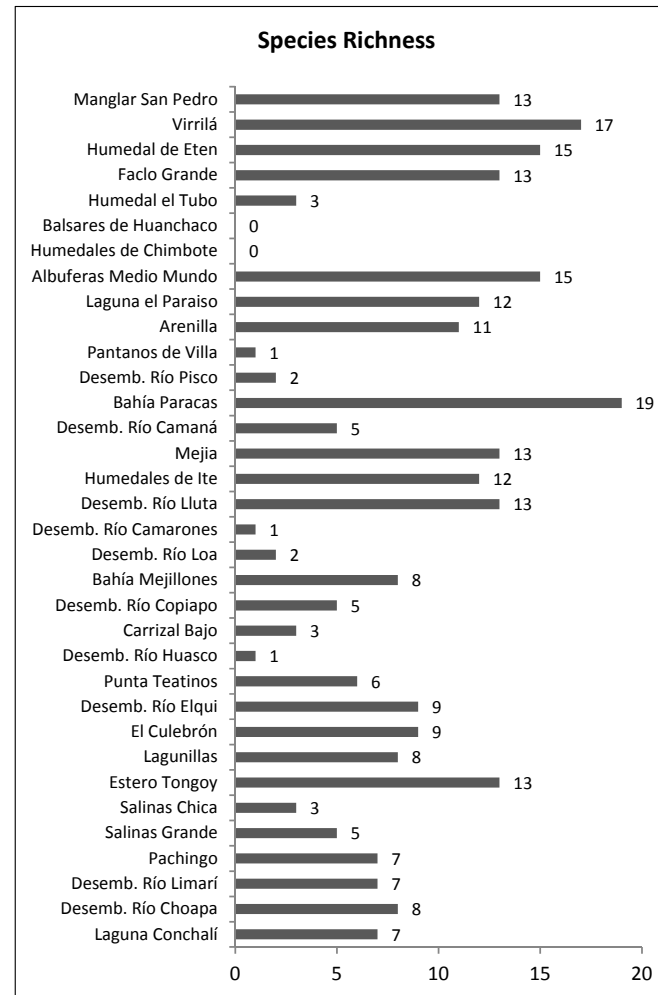
- January – February 2015 by CNEH & MHS
- Visits of spontaneous character
- Meetings with local stakeholders



Rapid Assessment of Coastal Wetlands

Counts of Migratory Shorebirds

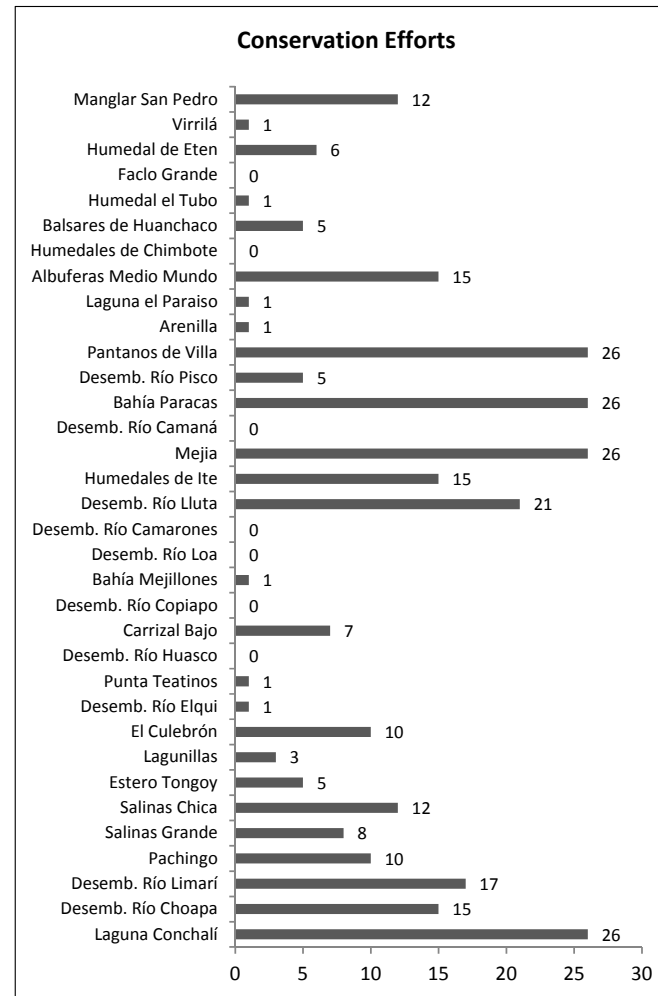
- One-off snapshot
- Highly disturbed at many sites



Rapid Assessment of Coastal Wetlands

Conservation Efforts

- 3 „fully protected“ sites in Peru, 1 in Chile
- 15 Sites with only little or no efforts

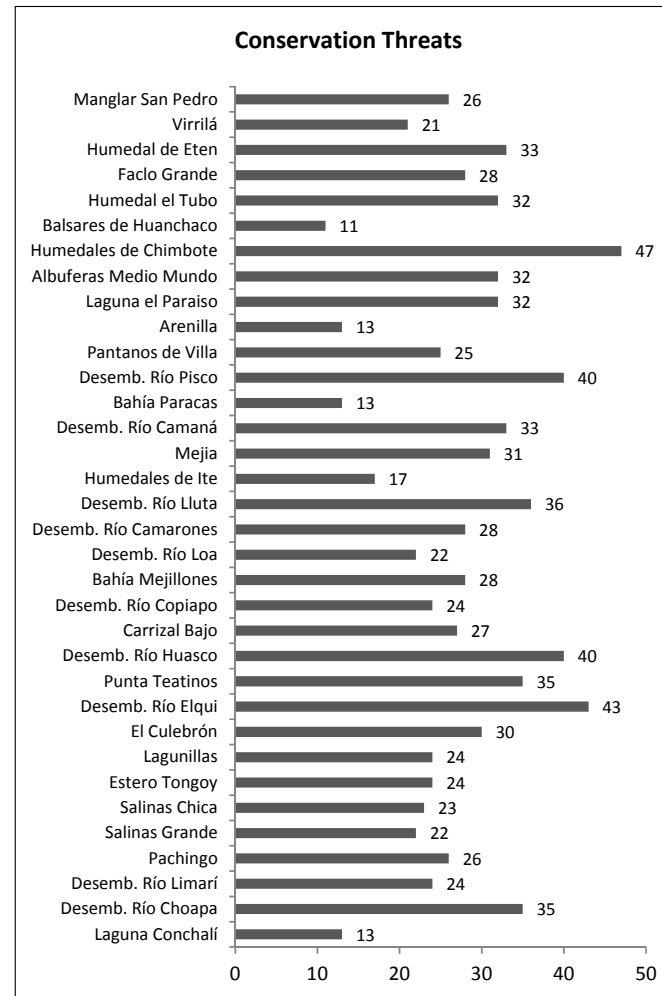


Rapid Assessment of Coastal Wetlands

Conservation Threats

➤ Most prevalent:

- Water withdraw
- Farming
- Urban expansion
- Infrastructure development
- Industrial development



Rapid Assessment of Coastal Wetlands

Prioritisation of Sites

- I. Conservation Efforts < 16
Conservation Threats > 35
- II. Conservation Efforts < 16
Conservation Threats > 20
- III. Conservation Efforts < 16
Conservation Threats > 20
Species Richness > 9 (Peru)
> 6 (Chile)

Site	Criteria		
	I CE < 16; CT > 35	II CE < 16; CT > 20	III SR > 9 (P), > 6 (C) CE < 16; CT > 20
Manglar San Pedro	-	prioritize	prioritize
Virrilá	-	prioritize	prioritize
Humedal de Eten	-	prioritize	prioritize
Faclo Grande	-	prioritize	prioritize
Humedal el Tubo	-	prioritize	-
Balsares de Huanchaco	-	-	-
Humedales de Chimbote	prioritize	prioritize	-
Albuferas Medio Mundo	-	prioritize	prioritize
Laguna el Paraíso	-	prioritize	prioritize
Poza Arenilla	-	-	-
Pantanos de Villa	-	-	-
Desemb. Río Pisco	prioritize	prioritize	-
Bahía Paracas	-	-	-
Desemb. Río Camaná	-	prioritize	-
Laguna de Mejía	-	-	-
Humedales de Ite	-	-	-
Desemb. Río Uta	-	-	-
Desemb. Río Camarones	-	prioritize	-
Desemb. Río Loa	-	prioritize	-
Bahía Mejillones	-	prioritize	prioritize
Desemb. Río Copiapo	-	prioritize	-
Carrizal Bajo	-	prioritize	-
Desemb. Río Huasco	prioritize	prioritize	-
Punta Teatinos	-	prioritize	-
Desemb. Río Elqui	prioritize	prioritize	prioritize
El Culebrón	-	prioritize	prioritize
Lagunillas	-	prioritize	prioritize
Estero Tongoy	-	prioritize	prioritize
Salinas Chica	-	prioritize	-
Salinas Grande	-	prioritize	-
Pachingo	-	prioritize	prioritize
Desemb. Río Limarí	-	-	-
Desemb. Río Choapa	-	prioritize	prioritize
Laguna Conchalí	-	-	-

Instruments for Conservation

- Network of local stakeholders
- Capacity building at local level
- Valorisation of ecosystem services
- Economic incentives for conservation, benefitting local communities
- Support the implementation of International Conventions such as:
 - Convention on Biological Diversity (CBD)
 - Convention on the Conservation of Migratory Species of Wild Animals (CMS)
 - Convention on Wetlands of International Importance (Ramsar)
 - UN Convention to Combat Desertification (UNCCD)
 - UN Framework Convention on Climate Change (UNFCCC)

Criteria for a Conservation Area

- Recognises the chain of coastal wetlands as a connected system
- Emphasises protection of migratory bird species
- Facilitates appropriate management measures in the sphere of influence
- Combines strict conservation with sustainable use of resources
- Accommodates small isolated sites, some with less than 100 ha
- Allows integration of private property
- Facilitates transboundary conservation work
- Provides legal protection

Example Conservation Area

Peru's National Reserve of Guano Capes and Islands

- 33 individual sites (22 Islands, 11 capes)
- 140.833 ha
- State territory



The Role of Biosphere Reserves

Río Limarí, BR Fray Jorge, Chile

- Estuary of approx. 750ha
- Bordering the NP Fray Jorge
- Incorporated in the BR since 2012
- In the process of Ramsar nomination



The Role of Biosphere Reserves

Manglares de Tumbes , BR del Noroeste, Peru

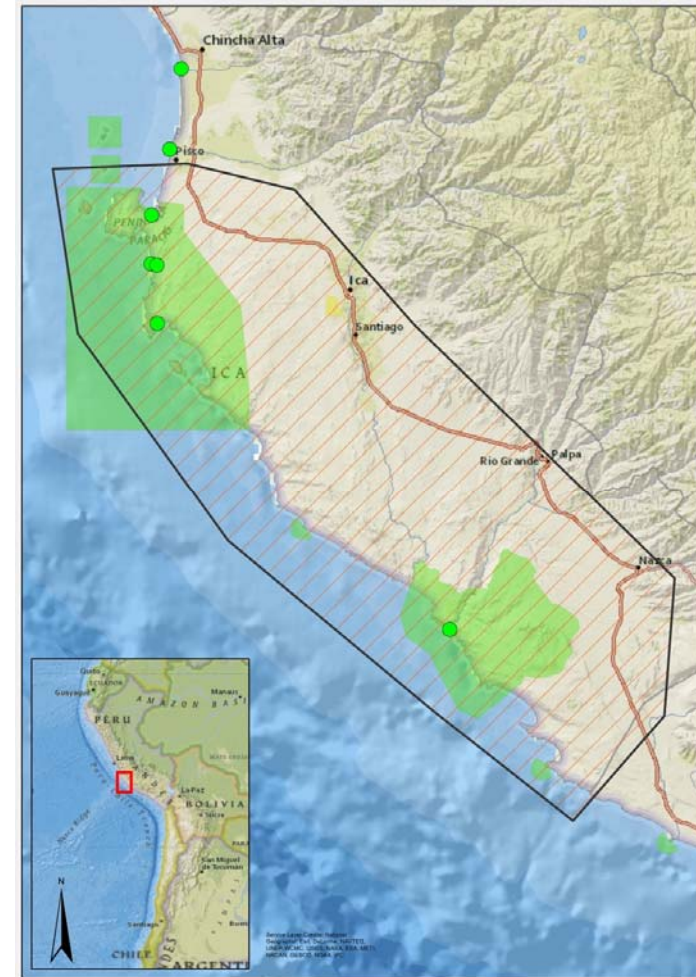
- Mangrove of approx. 3.000ha
- National Sanctuary since 1988
- In the process of being incorporated to the BR



Possible Options of New Biosphere Reserves

Paracas – Nazca – San Fernando, Peru

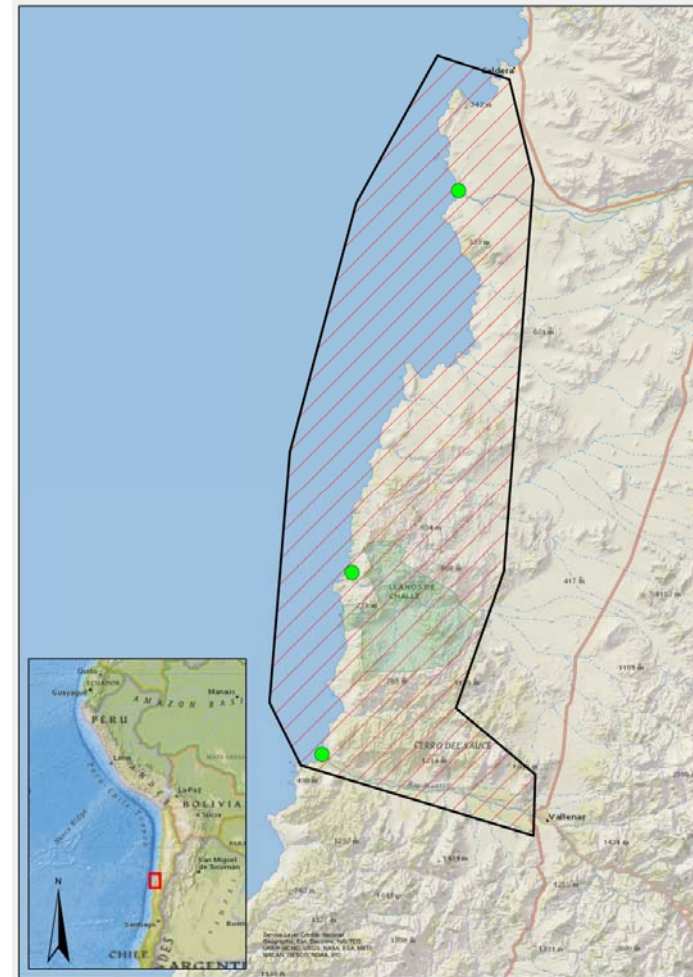
- Reservas Nacionales Paracas y San Fernando
- Unspoiled coastal zone
- High marine and coastal bio-diversity meets extreme scarcity
- River valleys in natural state
- Nazca-Paracas Culture



Possible Options of New Biosphere Reserves

Huasco – Llanos de Challe – Bahía Inglesa, Chile

- Parque Nacional Llanos de Challe
- Productive valley of Huasco river
- Semi-desert unspoiled coastal zone
- Low-impact coastal fishery
- Flowering desert, flora of high diversity and endemism



Potential New Model of a Biosphere Reserve?

Clustered Biosphere Reserve

- Combining example of the Guano Islands and Capes NR with attributes of BRs
- Including the aspects of logistical function, human development, and climate change
- Maybe also a solution for other scenarios of coastal and marine conservation work?
- Opportunity of transboundary approach between Peru and Chile



Questions?

You can find us at the poster session.

THANK YOU!!