Convey Water from All-American Canal to Andrade Wetlands

LA602 Landscape Design and Natural Processes
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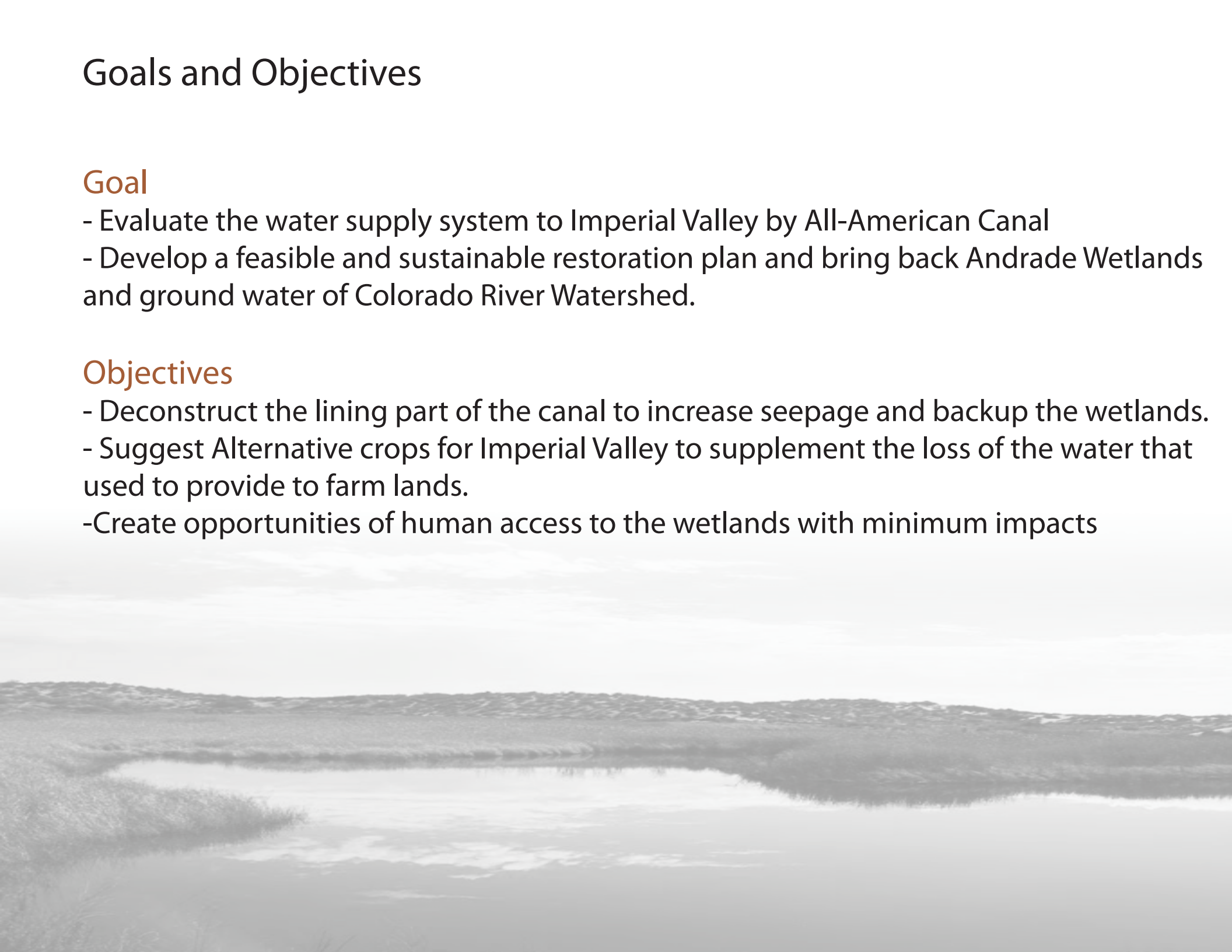
Goals and Objectives

Goal

- Evaluate the water supply system to Imperial Valley by All-American Canal
- Develop a feasible and sustainable restoration plan and bring back Andrade Wetlands and ground water of Colorado River Watershed.

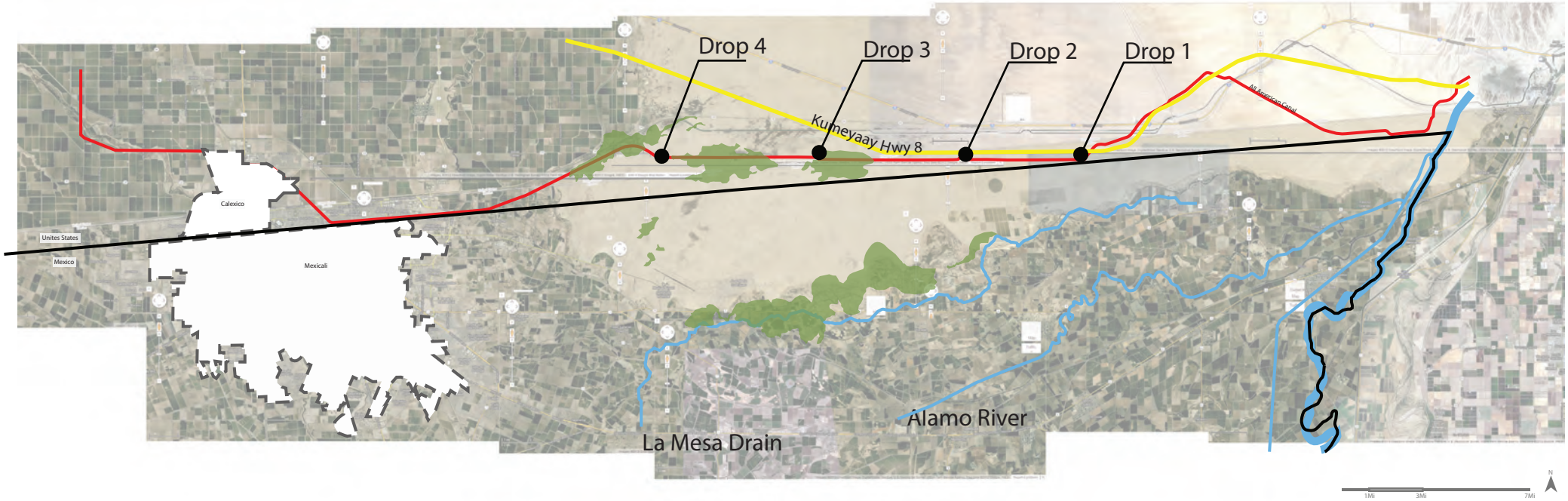
Objectives

- Deconstruct the lining part of the canal to increase seepage and backup the wetlands.
- Suggest Alternative crops for Imperial Valley to supplement the loss of the water that used to provide to farm lands.
-Create opportunities of human access to the wetlands with minimum impacts



Site Context

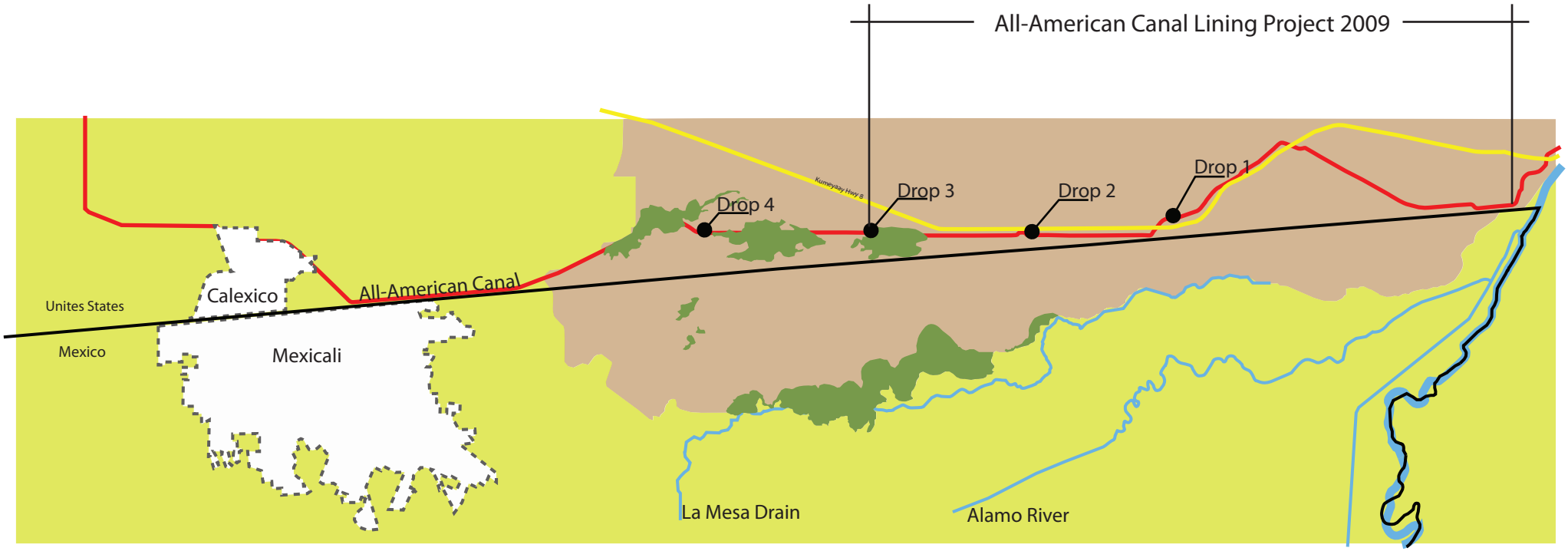
Andrade Wetland (6200 ha)



All-American Canal

All-American Canal

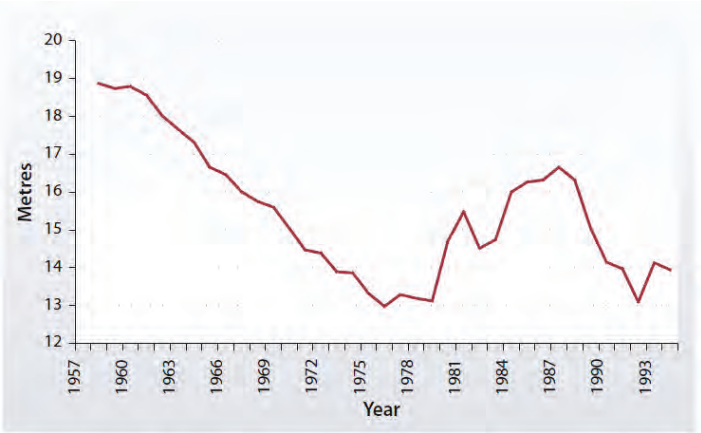
Land Use



Algodone Sand Dune

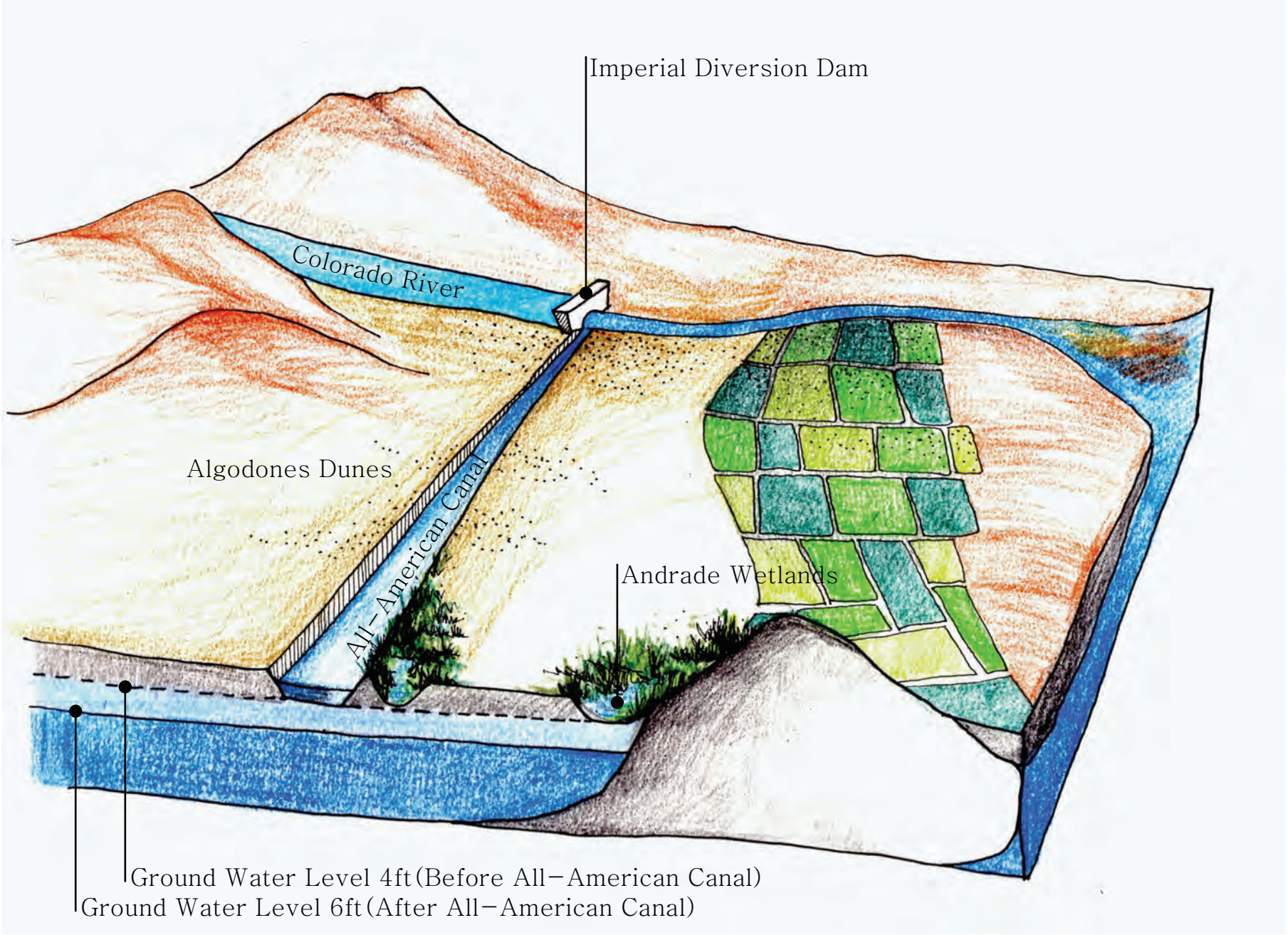
Agricultural Land Use

Andrade Wetland (6200 ha)

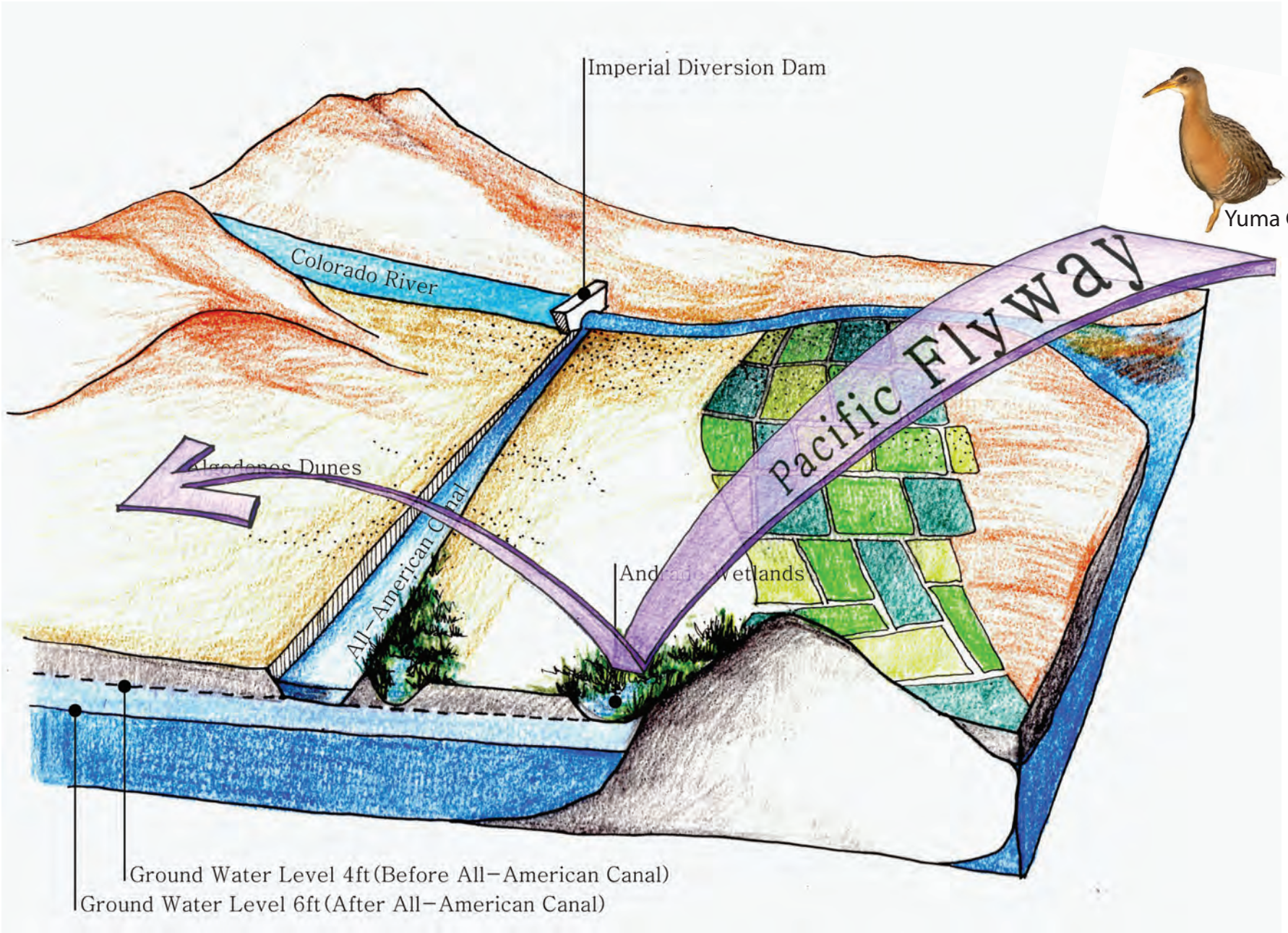


Ground water level of Mexicali Watershed
1957-1993

Water Circulation



Why Andrade Mesa Wetlands?

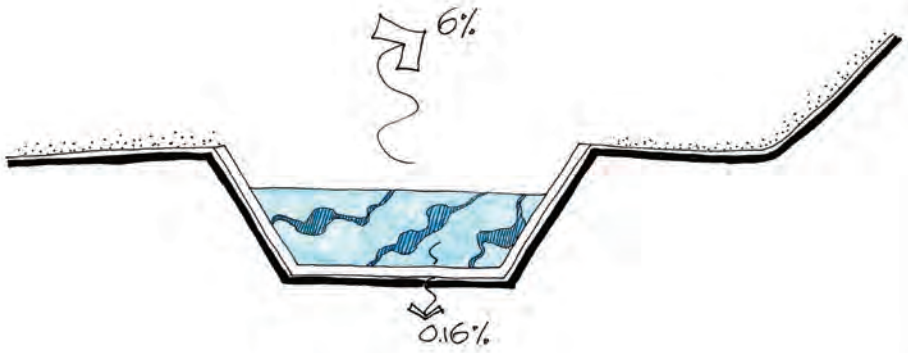


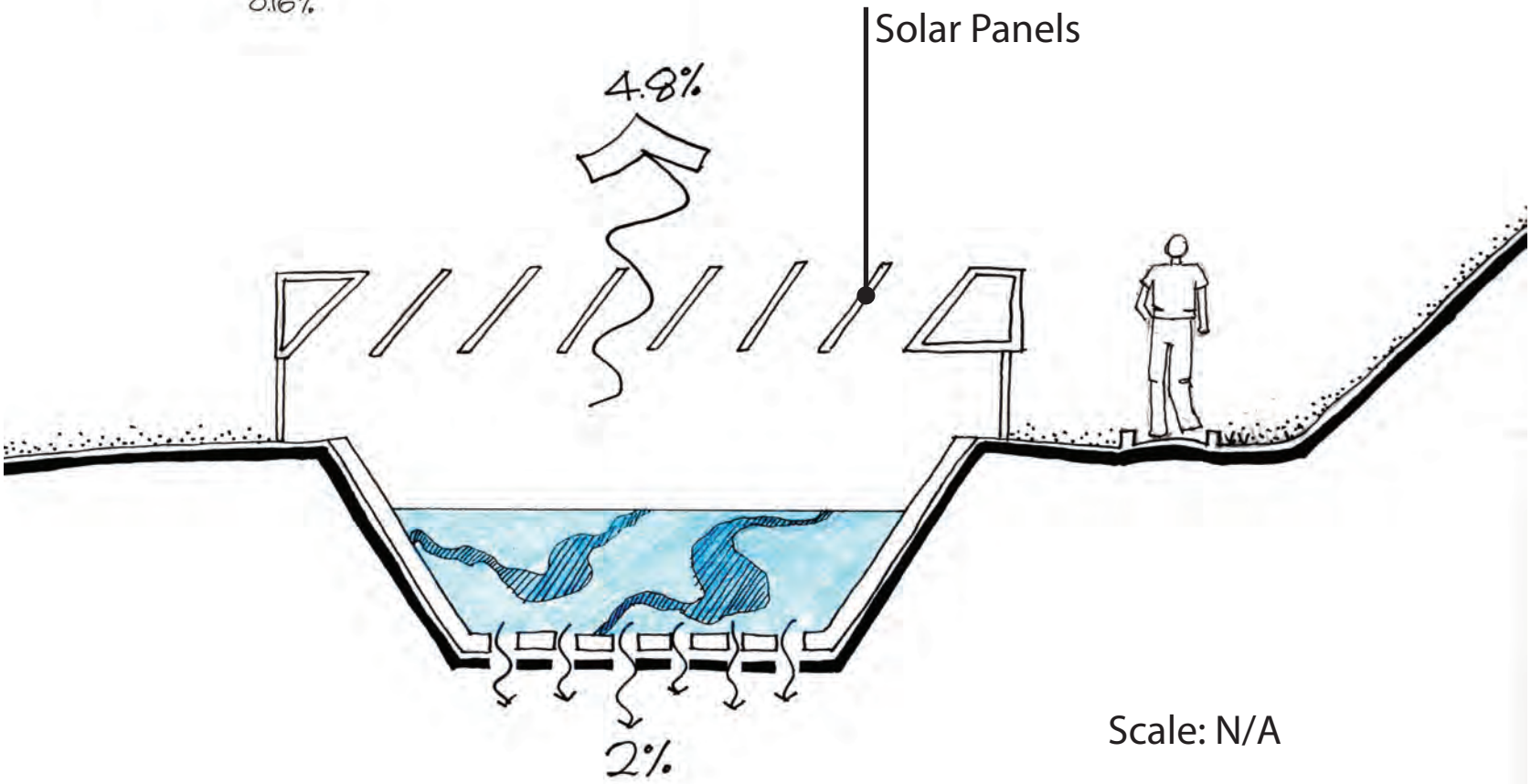
Yuma Clapper Rail

Rehabilitation

Rehabilitation_Canal Seepage

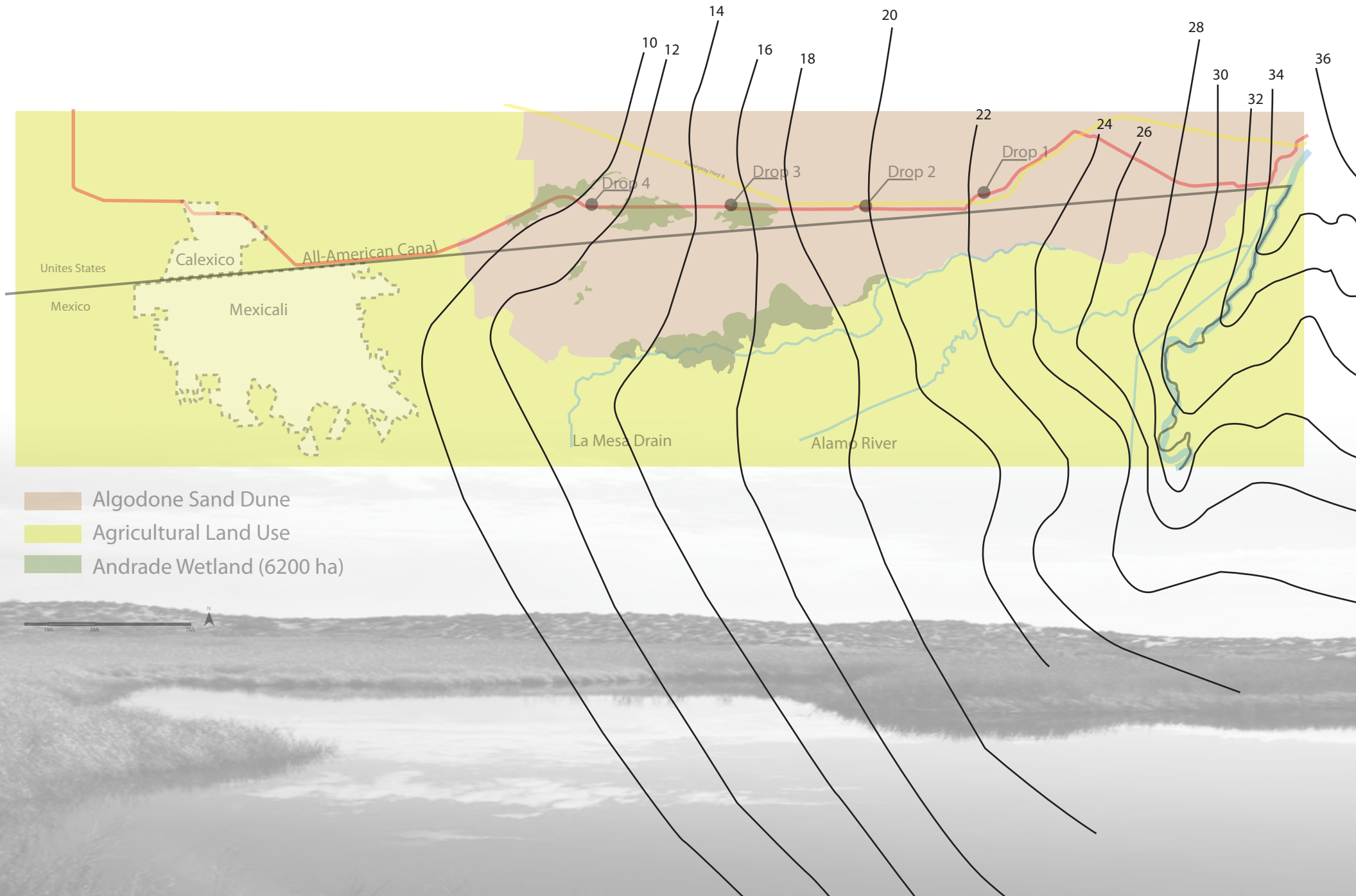
Case Study in India





Scale: N/A

Ground Water Level



Rehabilitation_Alternattive crops

Punica granatum
-Pomegranate
-Salt tolerence

Olea europaea
-Olive
-Moderate
salt tolerence

Opuntia
-Prickly Pear
-low water use
-high salt tolerance

Aloe

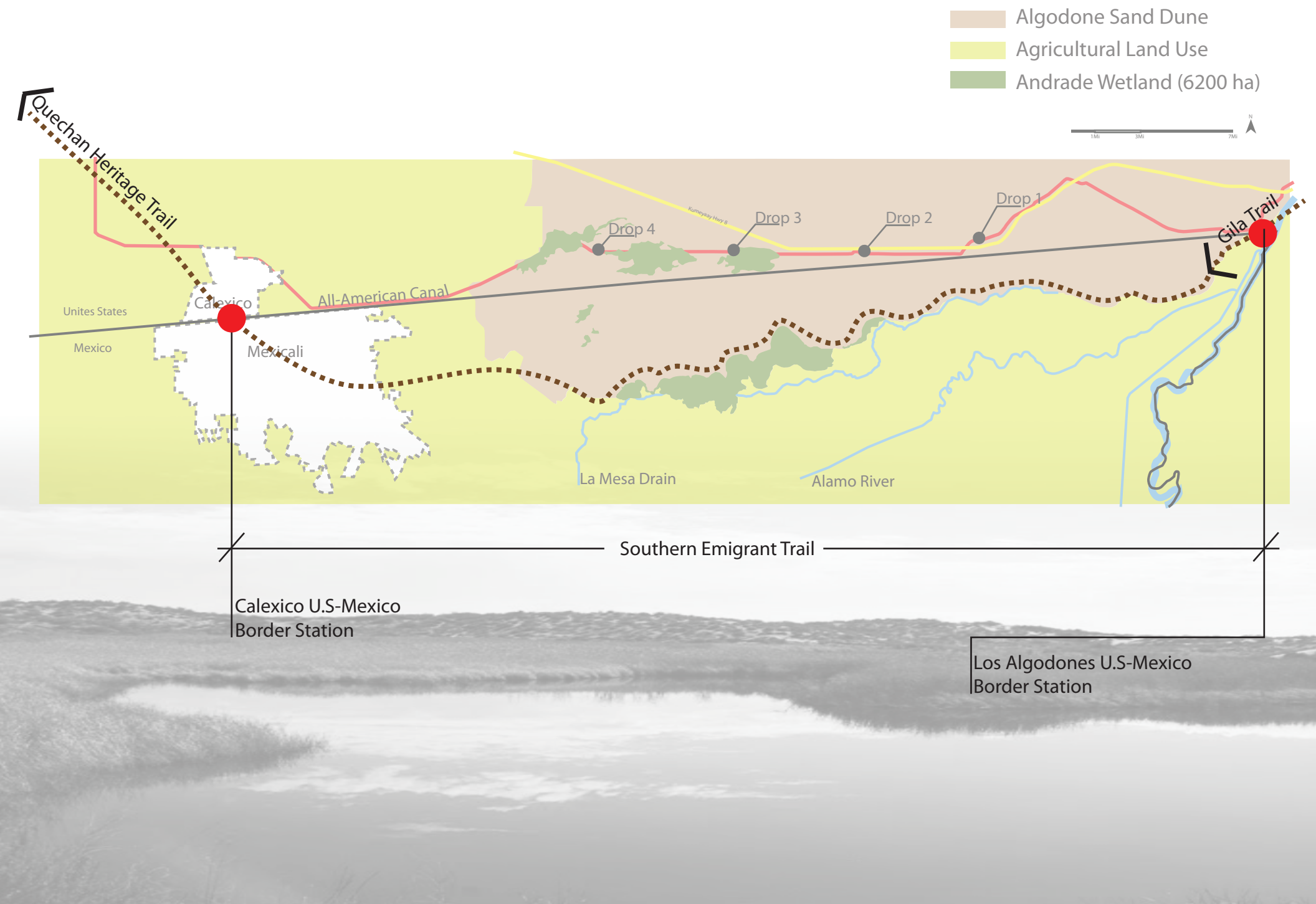
Jojoba
-Young plants:sentitive to flooding
-Established plants are salt tolerent

Parthenium argentatum Gray
-Salt tolerent
-Produce rubber

Anacardium occidentale
-Salt tolerece:depends water
-Cashew

Lesquerella
-Bladder Pod
-Vegetable oil

Rehabilitation_Historic Trail



References

Arias, E., Alber, M. (2004). Gulf of California/Colorado River Basin GIWA Regional assessment 27. United NationsEnvironment Programme

U.S. Bureau of Reclamation. (2005). All-American Canal Lining Project: Potential Species Impacts in the Republic of Mexico.

HinoJosa-Huerta, O. (2002). Andrade Mesa Wetlands of the All-American Canal.

Carrillo-Guerrero, Y. (2009). Water Conservation, Wetland Restoration and agriculture in the Colorado River Delta, Mexico. The Univ. of Arizona.

Save the Colorado http://savethecolorado.org

Trails West http://emigranttrailswest.org/

Drylands Design http://drylandscompetition.org/wp-content/uploads/2012/01/T178.pdf

Thompson, A.E. 1990. Arid-land industrial crops. p. 232-241. In: J. Janick and J.E. Simon (eds.), Advances in new crops. Timber Press, Portland
http://www.hort.purdue.edu/newcrop/proceedings1990/v1-232.html

Creswell, R., Martin, F.W. (1998). Dryland Farming: Crops & Techniques for Arid Regions. Echo.