Cameron Creole Watershed

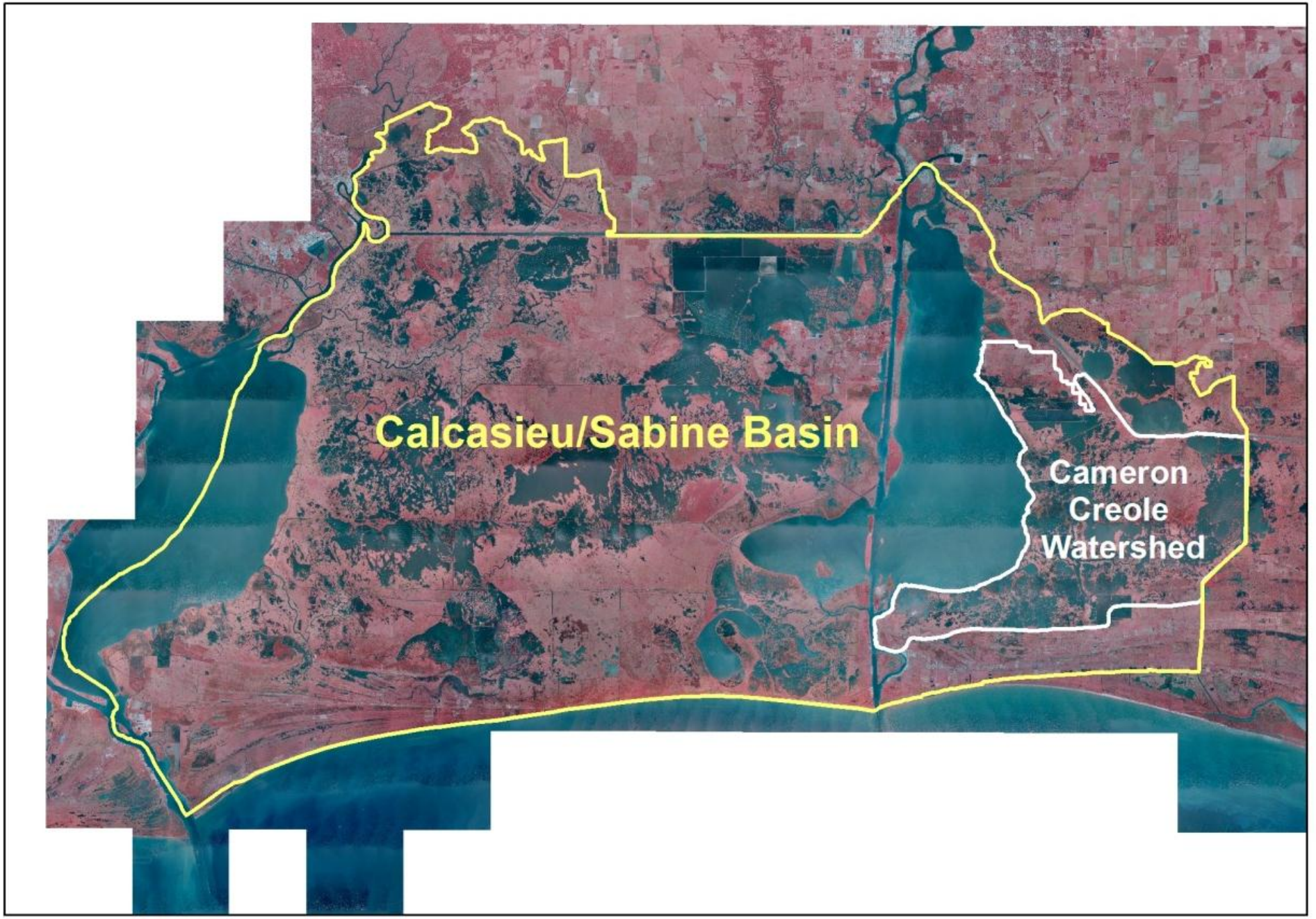
Status and Trends

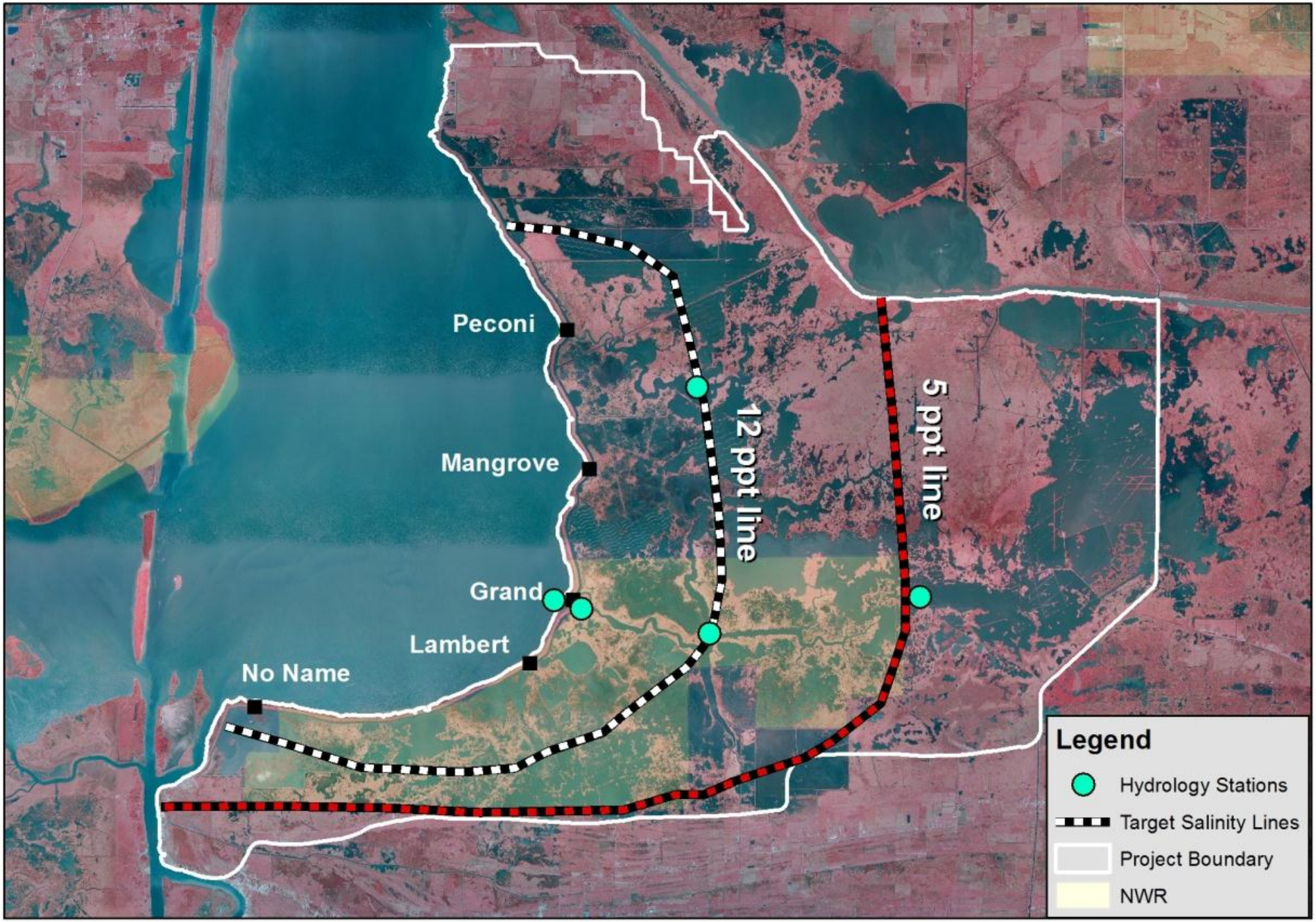
Leigh Anne Sharp

CCA State of the Lake

July 9th, 2014

committed to **our coast**


Calcasieu/Sabine Basin
Cameron
Creole
Watershed


Peconi
Mangrove
Grand
Lambert
No Name
12 ppt line
5 ppt line
Legend
Hydrology Stations
Target Salinity Lines
Project Boundary
NWR

Resource Management Plan for Cameron Creole (1987)

- **Objective** – Restore the project area to approximate the 1972 vegetative communities and salinity regimes.
  - The plan established salinity lines (isohalines) at 12 ppt and 5 ppt targets to guide management.

- **Salinity and Water Level Management Criteria** – At the 5 ppt line, maintain salinity below 5 ppt and water level between 2” above and 6” below marsh elevation.
  - This is basic structural marsh management and is used across the coast.
  - There is a salinity gradient between the 5 ppt line in the back of the watershed and the lake.

- **Gates When on Target –** Open Grand Bayou boat bay, and set all structures to “crest”.
  - **Fixed Crest Weirs** – Mangrove and No Name – Open
  - **Adjustable Crest Weirs** – Peconi and Lambert – Crest gates open, deep gates closed

Resource Management Plan (Cont'd)

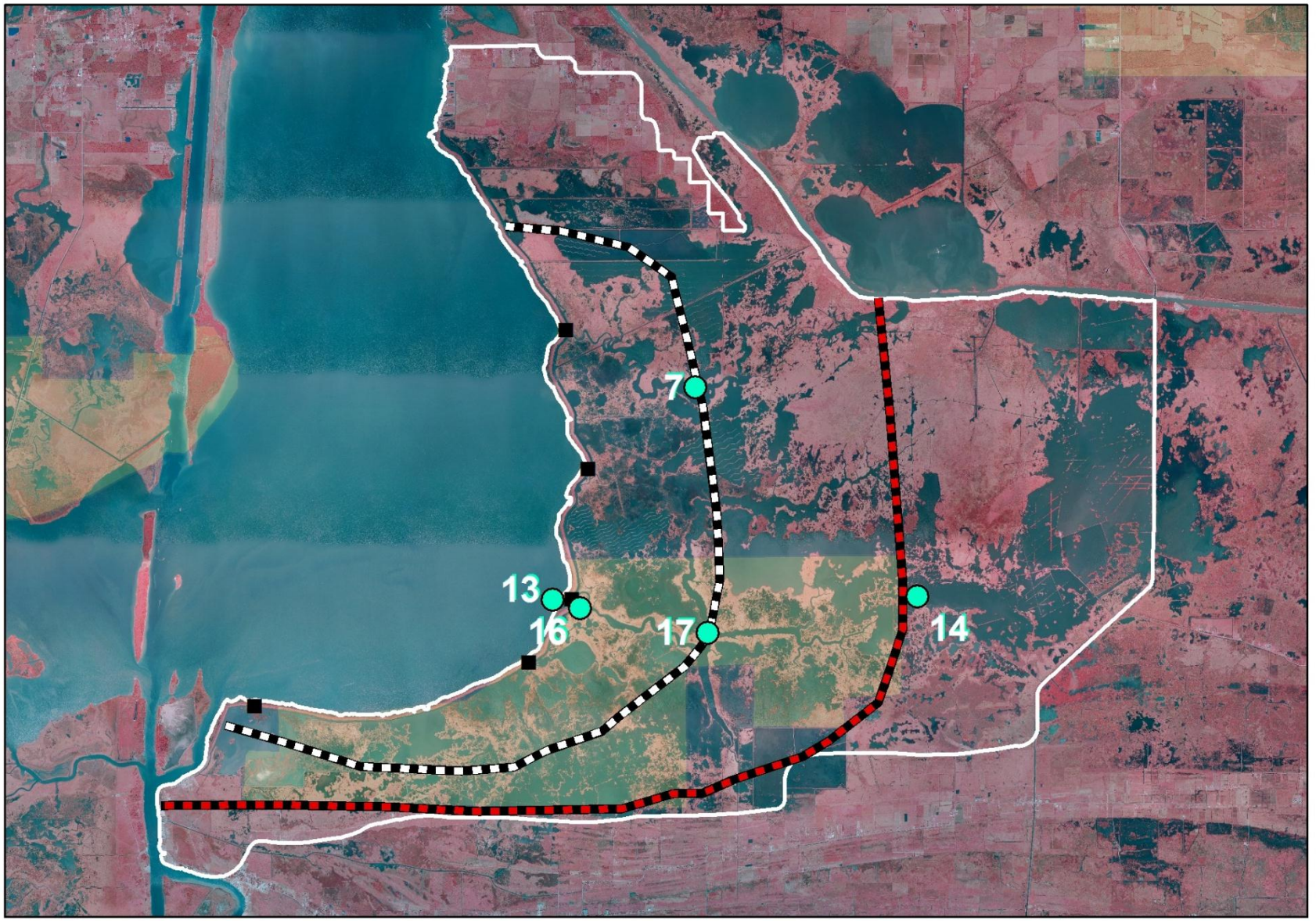
- **Gates When above Target –** Close crest gates first and then the boat bay. Fish slots remain open.

- **Lunar Fisheries Operations** – Open one deep gate at Lambert and Peconi for at least two nights on each new and full moon.
  - CPRA alerts the advisory committee when lunar operations may negatively effect water level or salinity relative to the targets in the management plan.

- **The boat bay is left open as often as possible**.

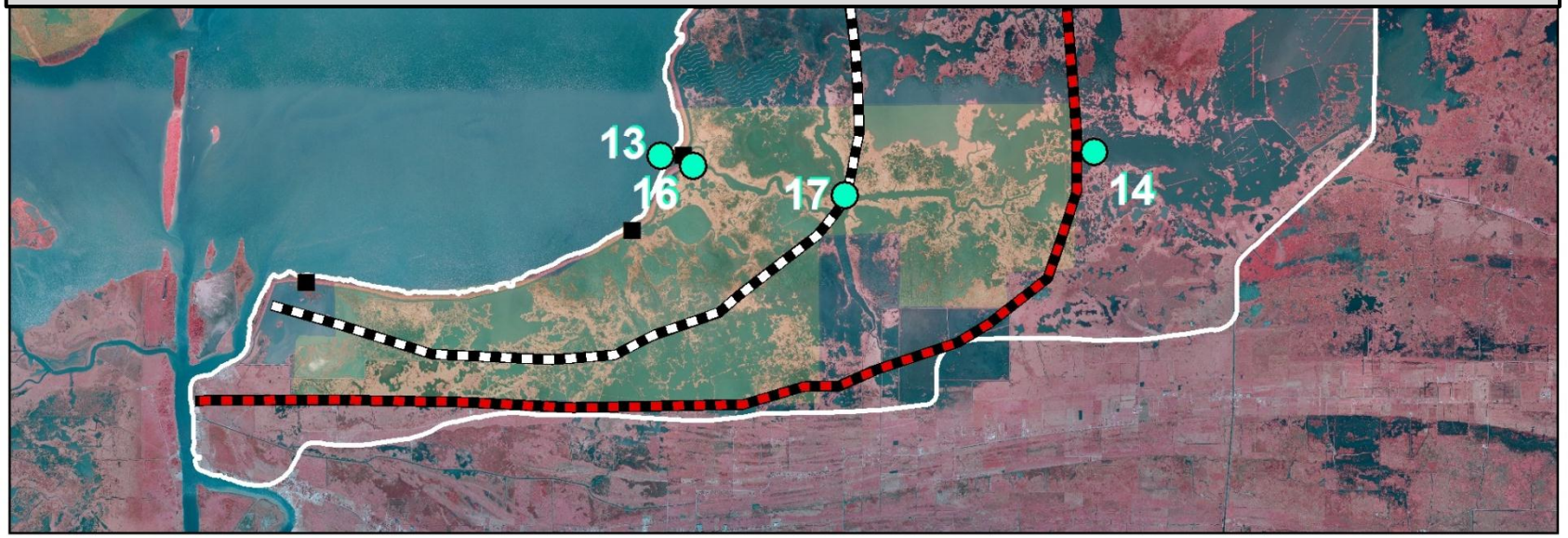
- **During deep freezes, gates are left partially open to allow fish to escape.** During the winter, water is often low inside the watershed and in the lake. Opening all the way would allow for excessive drainage. The partial gate openings may not be visible but they are there. Fish can escape.

Current Salinity Values (ppt) in the Cameron Creole Watershed

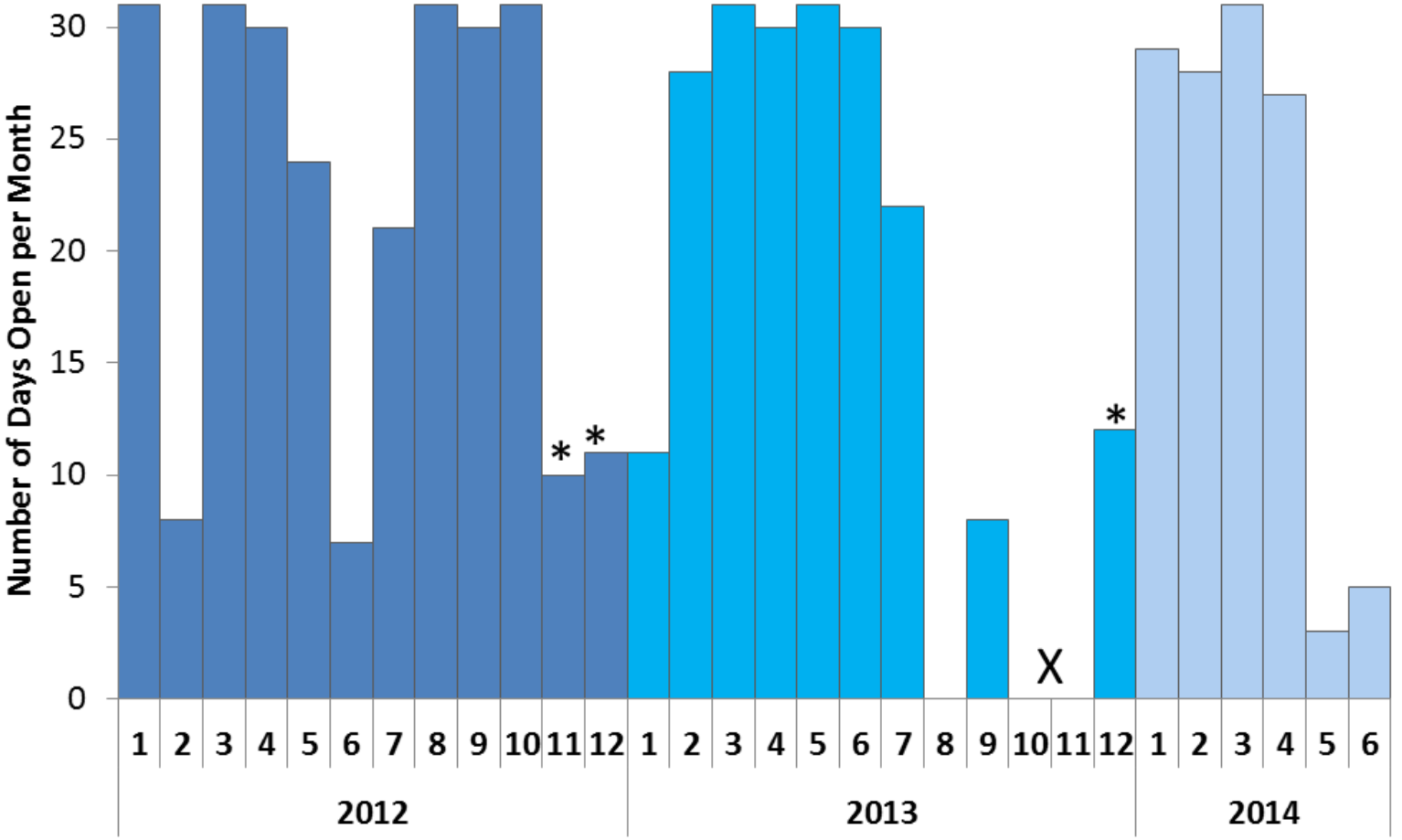


Current Salinity Values (ppt) in the Cameron Creole Watershed

- **Current Operations – Early Lunar Operations to take advantage of relatively low lake salinity:**
- Two nights from 7/8/14 to 7/10/14
- Extra gates open because critical time for immature white shrimp ingress
  - Two gates open at Peconi, Mangrove, Lambert, and NoName
  - Grand Bayou Boat Bay open
- Most gates will close Thursday morning (7/10/14).
  - Boat bay will remain open until salinity in the lake increases to above salinity in the watershed or until salinity at the 5 ppt line begins to increase.
- Grand Bayou Boat Bay Hotline: 855-532-9955



Grand Bayou Boat Bay Open

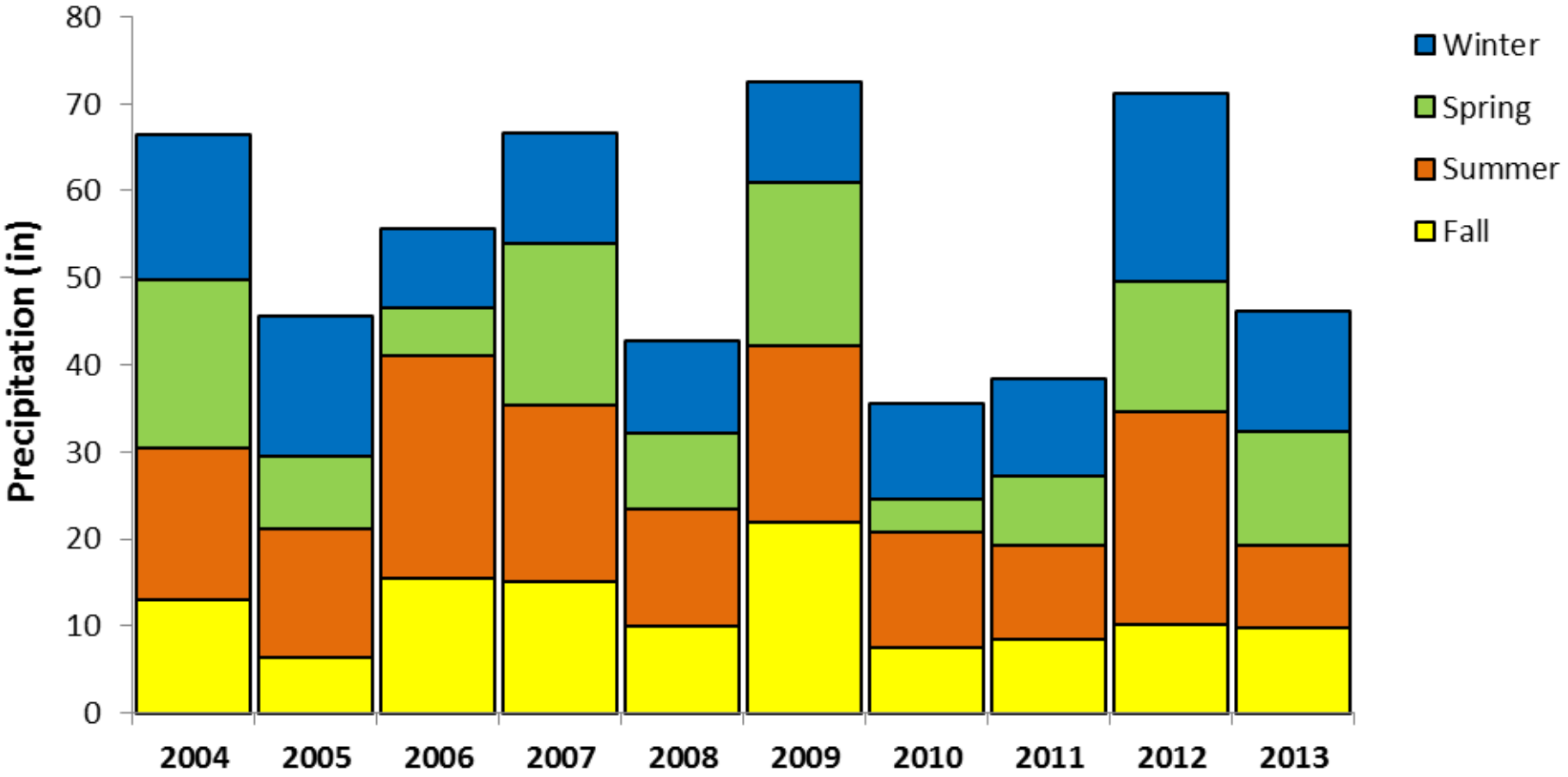


Days Open (% of Year): **265 days (73%)** **203 days (56%)** **123 days (68%)**

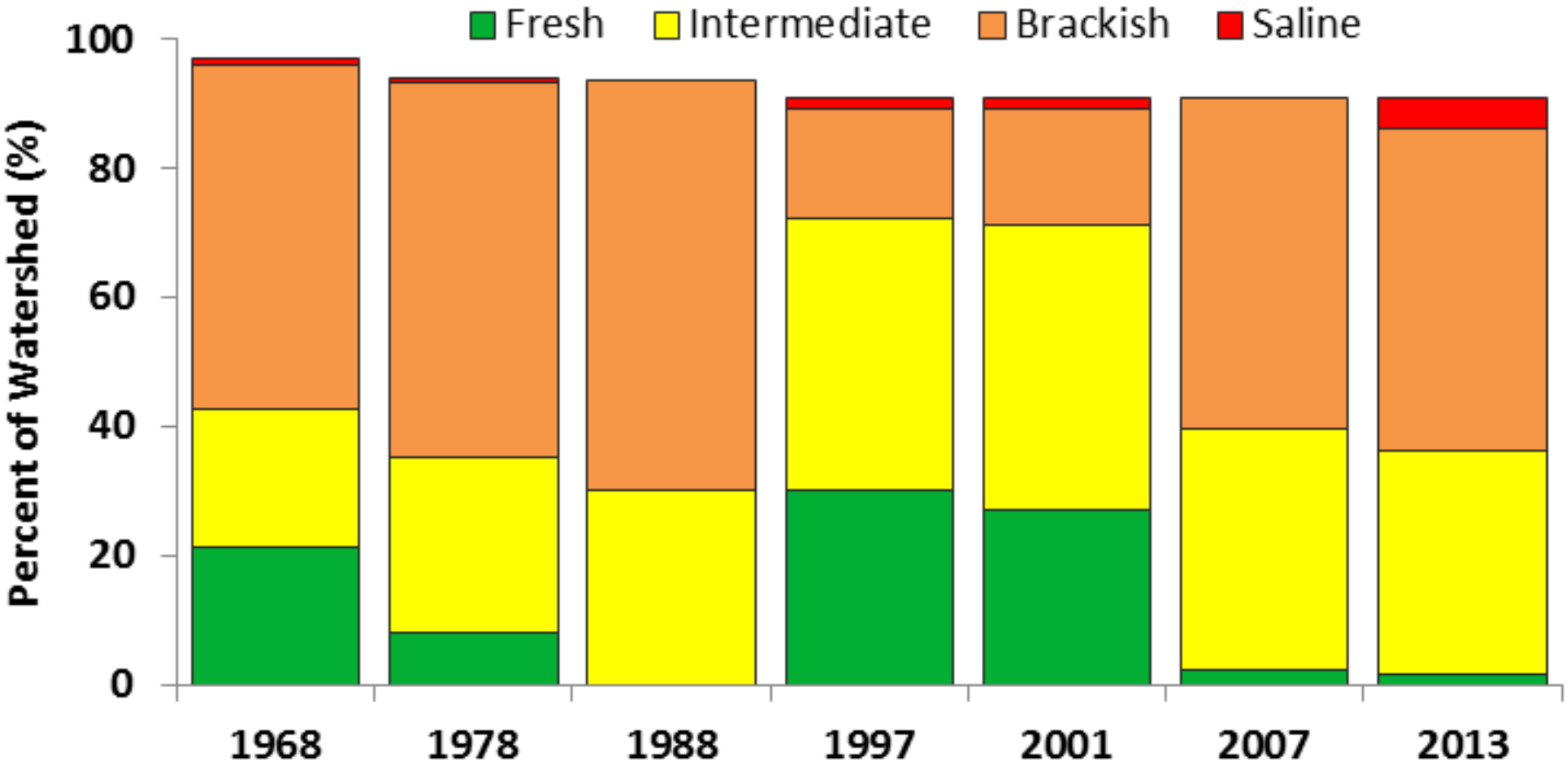
* Winter Closures due to NWR Duck Season Restrictions

X Federal Government Shutdown

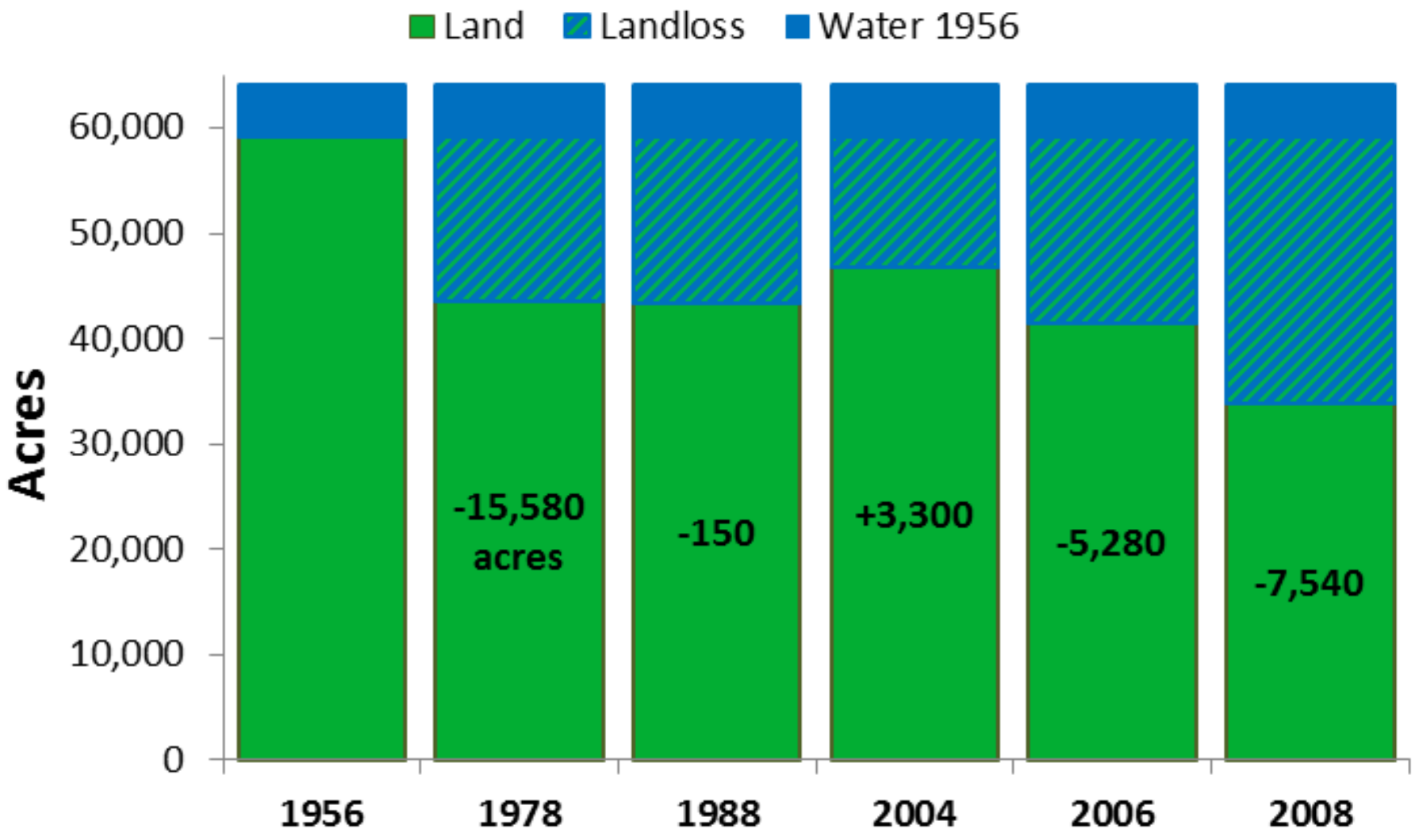
Seasonal Precipitation - Lake Charles, LA
2004 to 2013



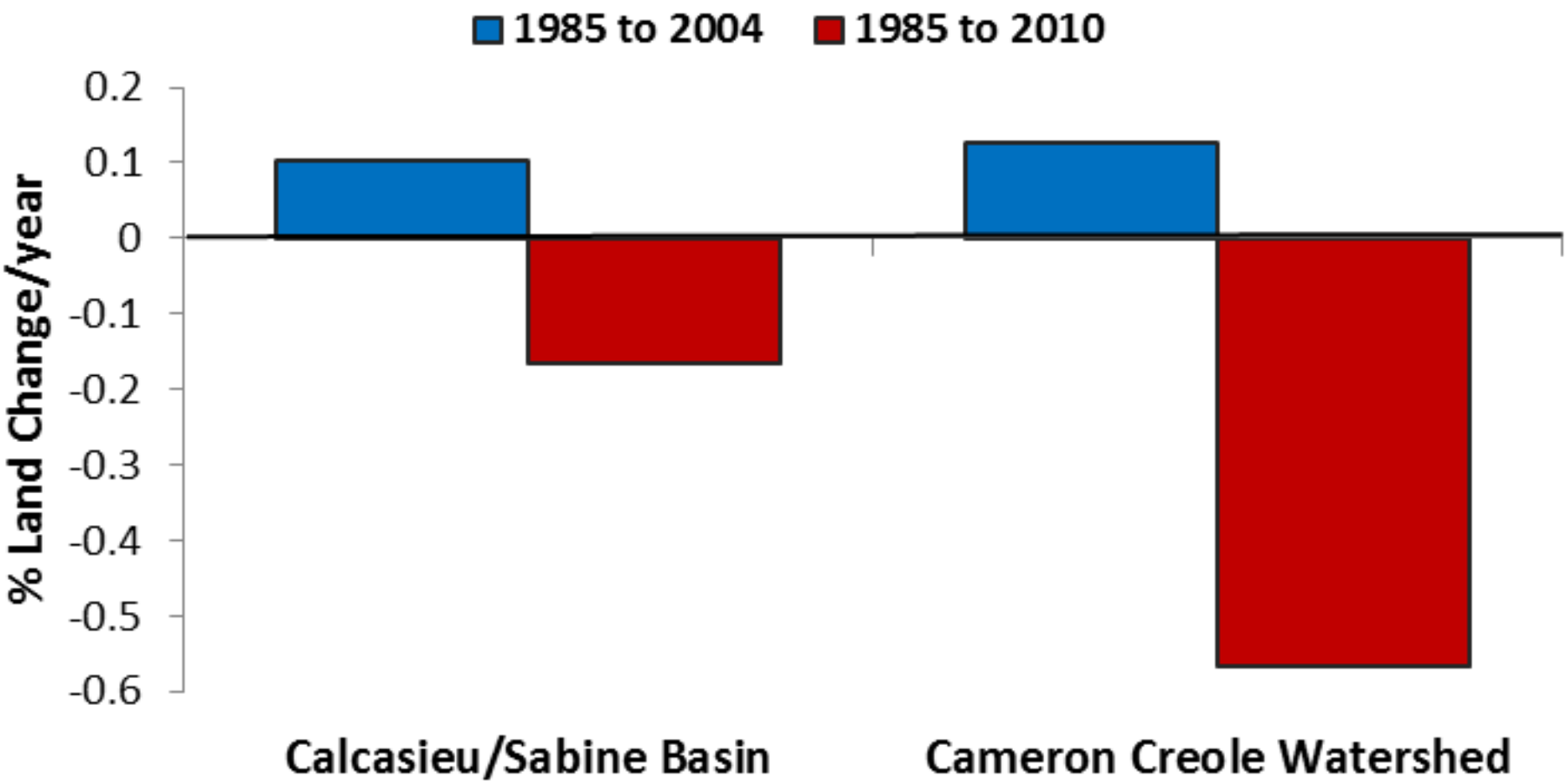
Marsh Type in the Cameron Creole Watershed 1968 to 2013



Landloss in the Cameron Creole Watershed 1956 to 2008



Land Change Rates in the Cameron Creole Watershed and the Calcasieu/Sabine Basin



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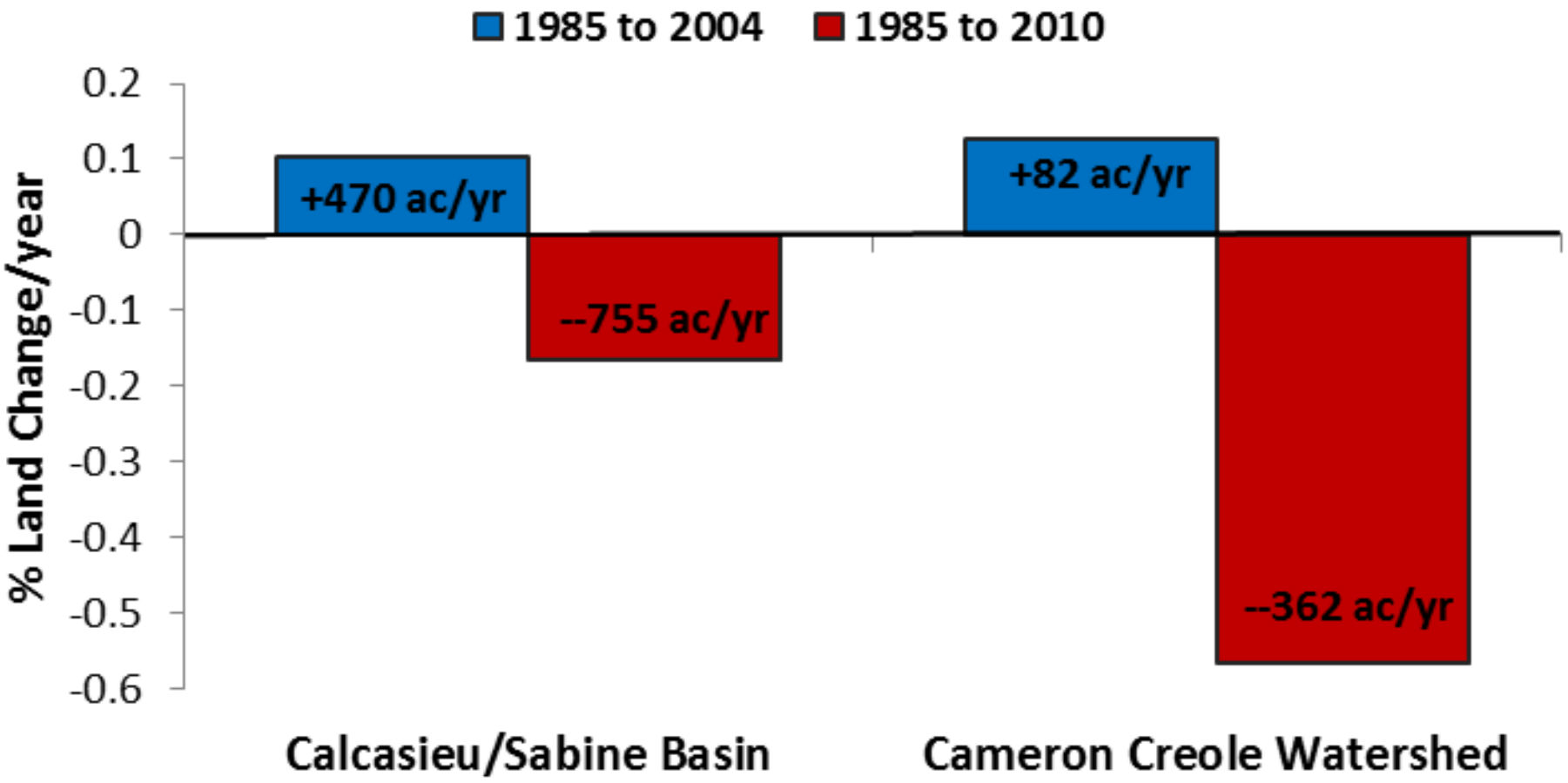
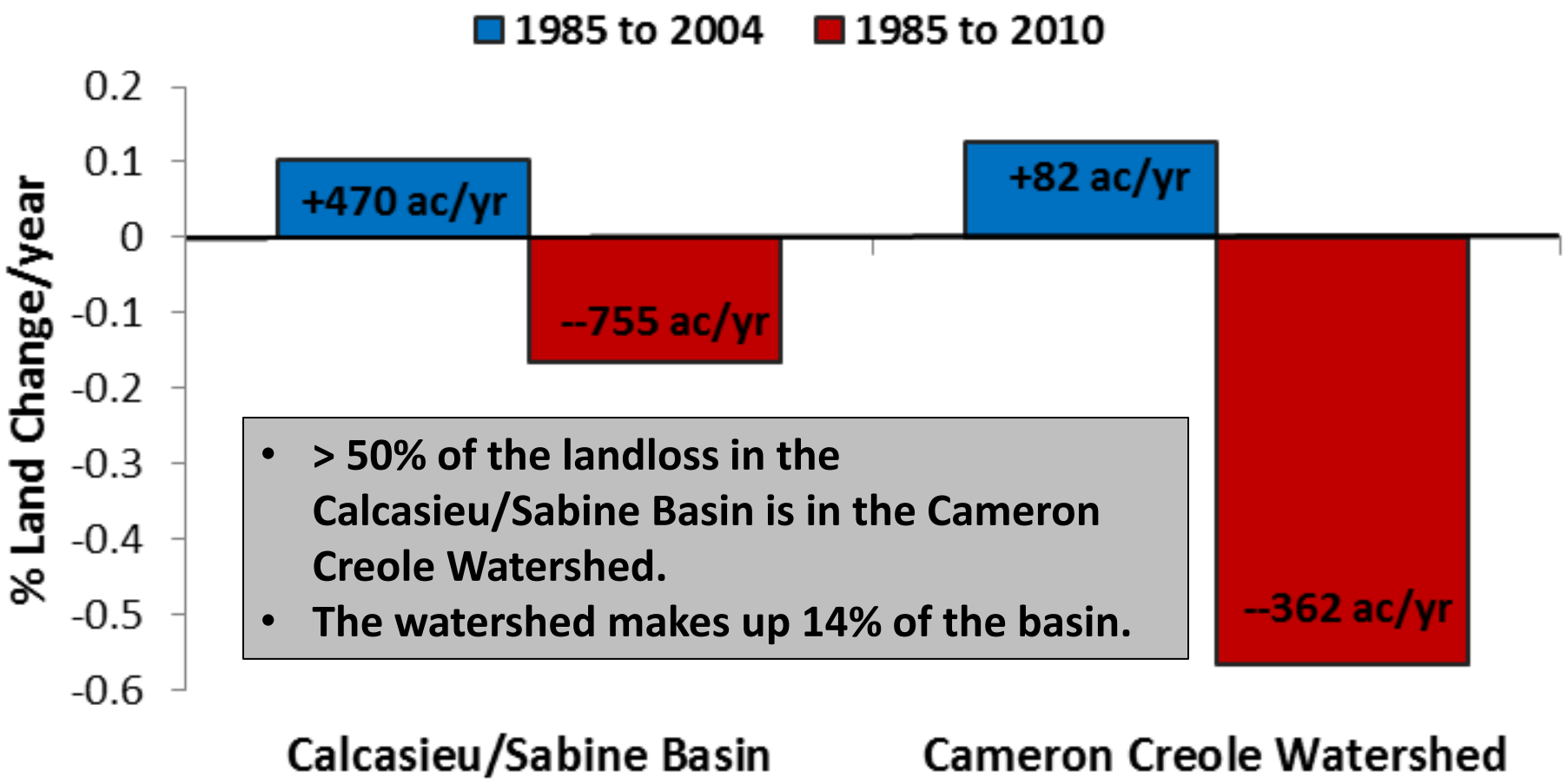


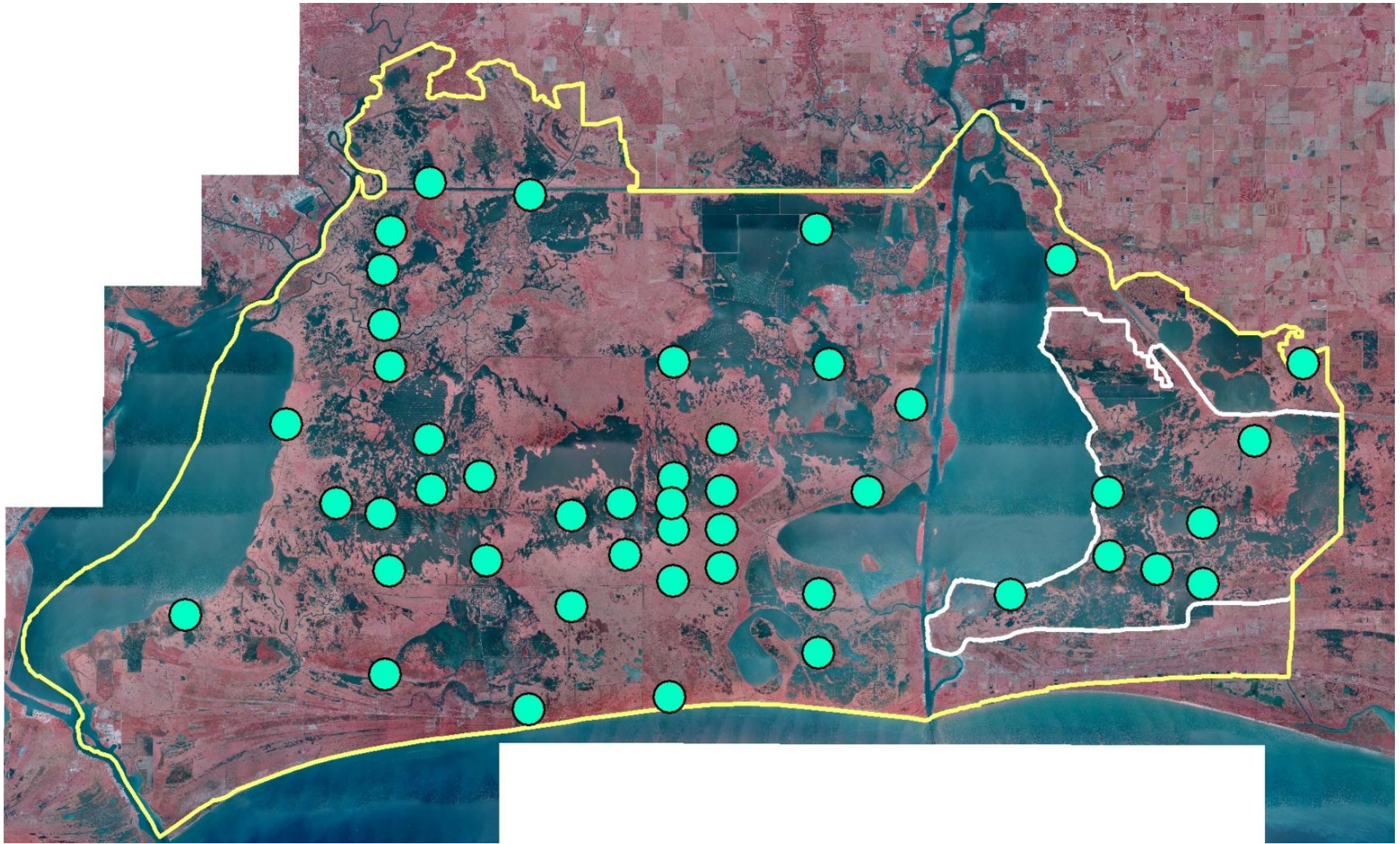
Land Change Rates in the Cameron Creole Watershed and the Calcasieu/Sabine Basin



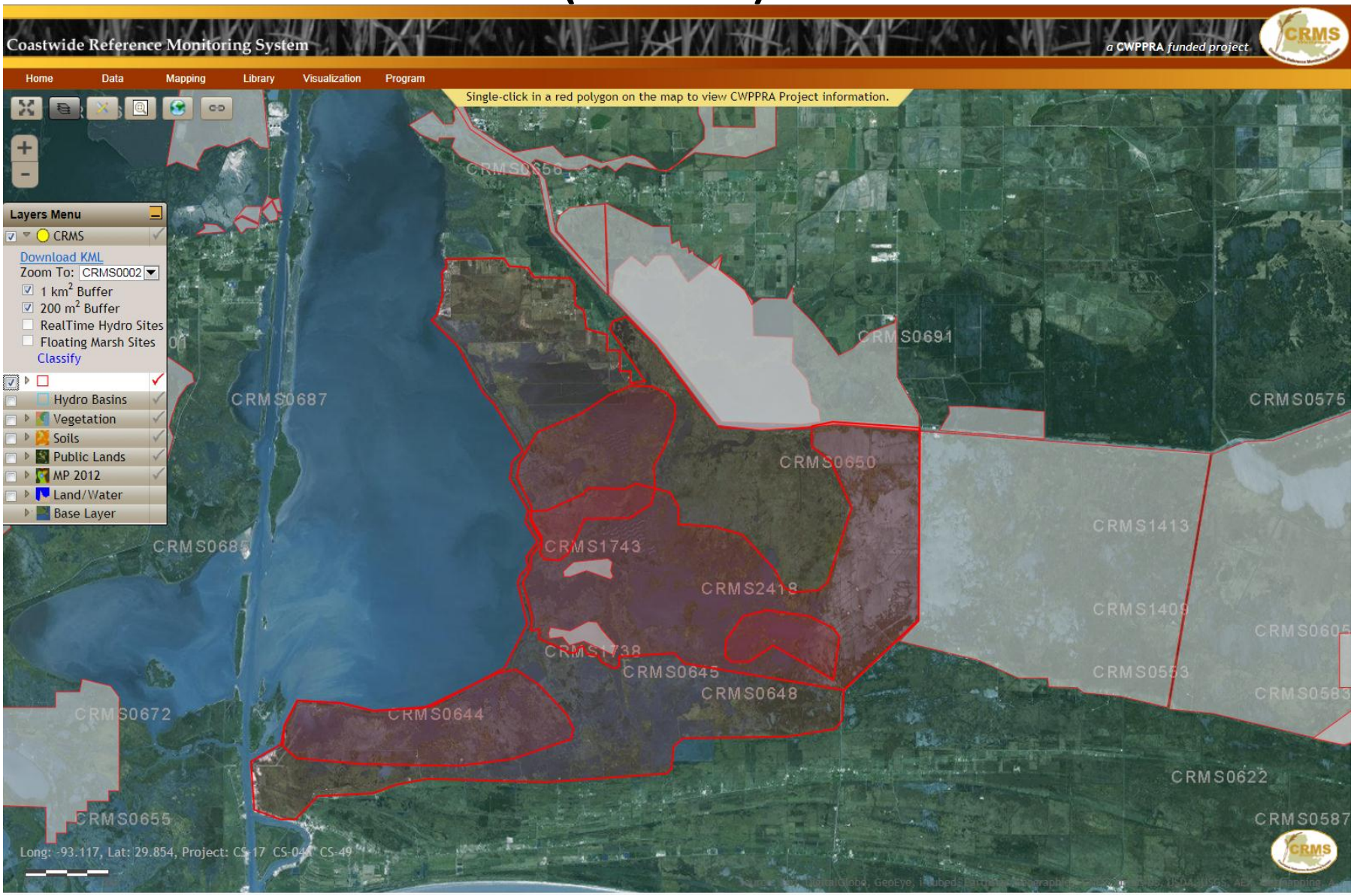
- **> 50% of the landloss in the Calcasieu/Sabine Basin is in the Cameron Creole Watershed.**
- **The watershed makes up 14% of the basin.**

Louisiana's Coastwide Reference Monitoring System (CRMS)

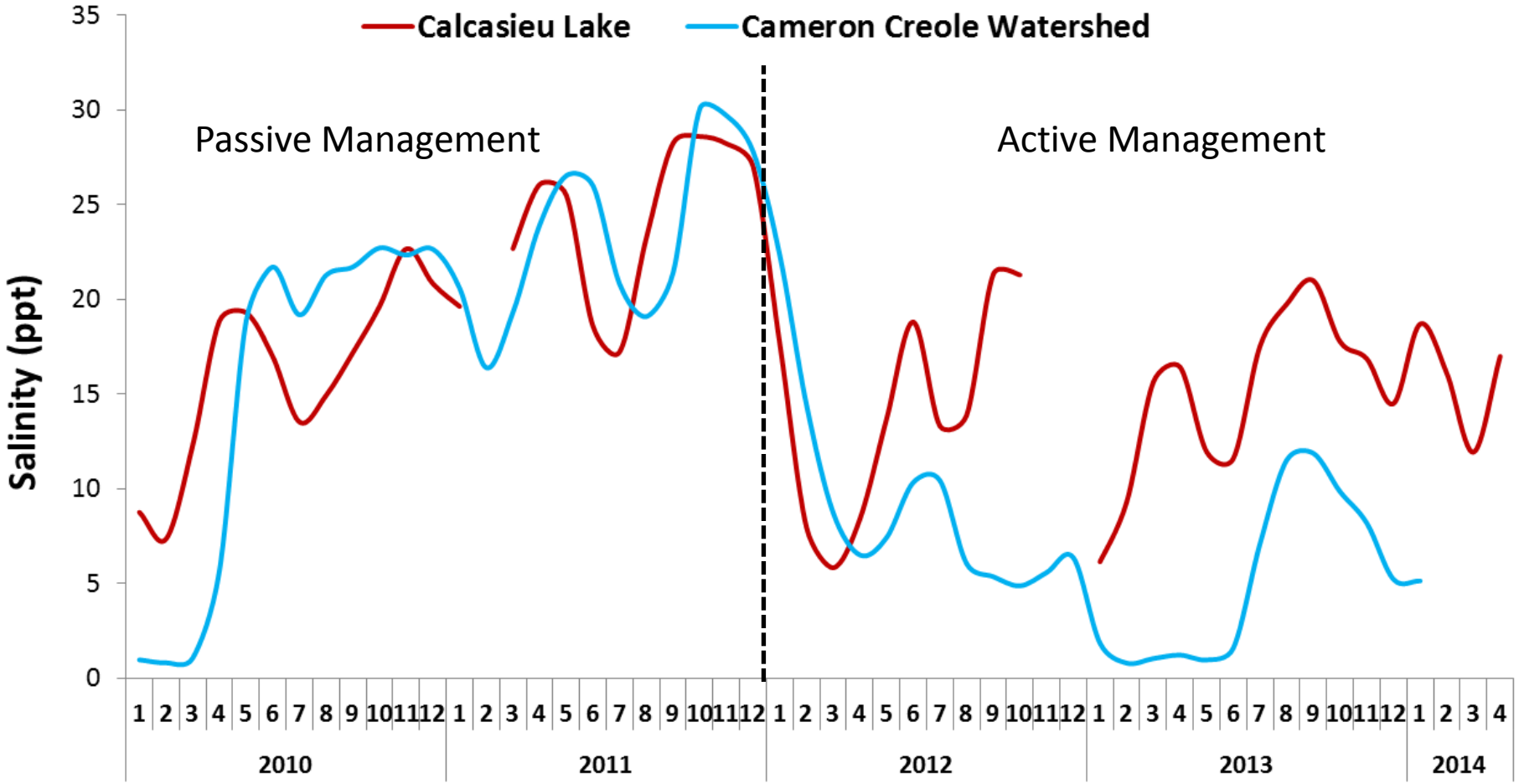
__392__ Sites Coastwide, __46__ in the Calcasieu/Sabine Basin, __7__ in the Cameron Creole Watershed



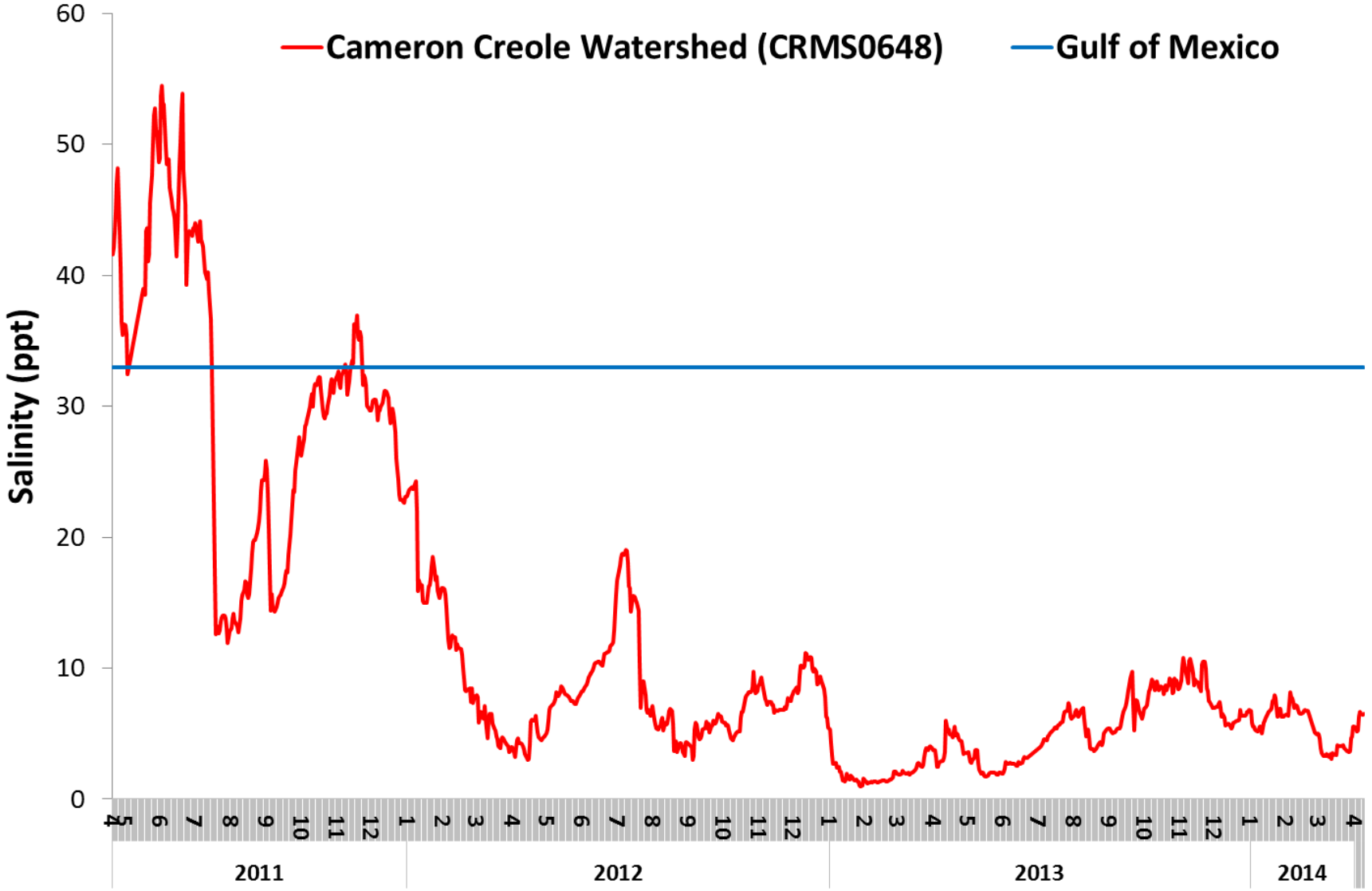
Coastal Wetland Planning Protection and Restoration Act Projects (CWPPRA)



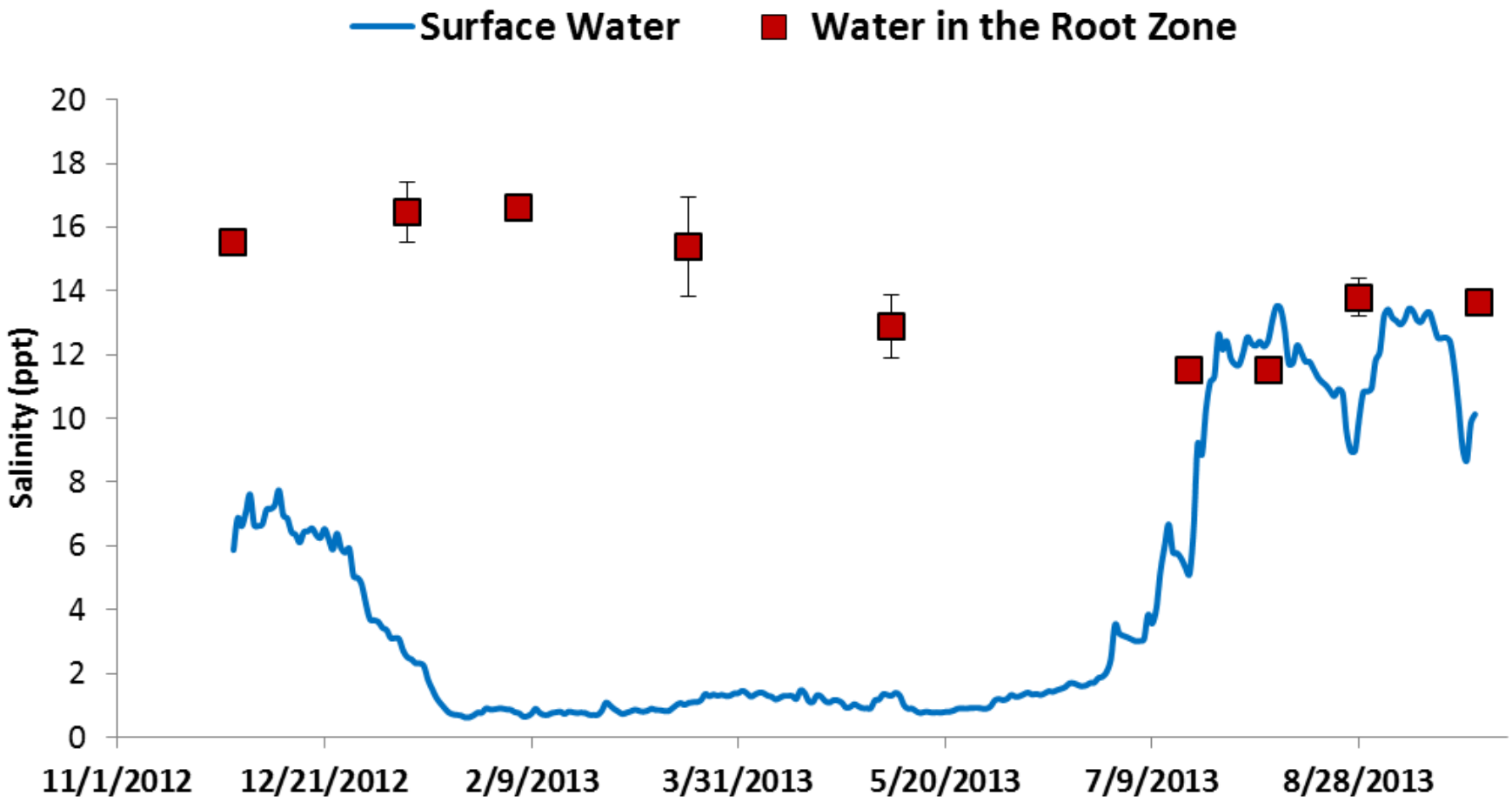
Salinity in the watershed was the same as Calcasieu Lake prior to active gate operations in 2012.



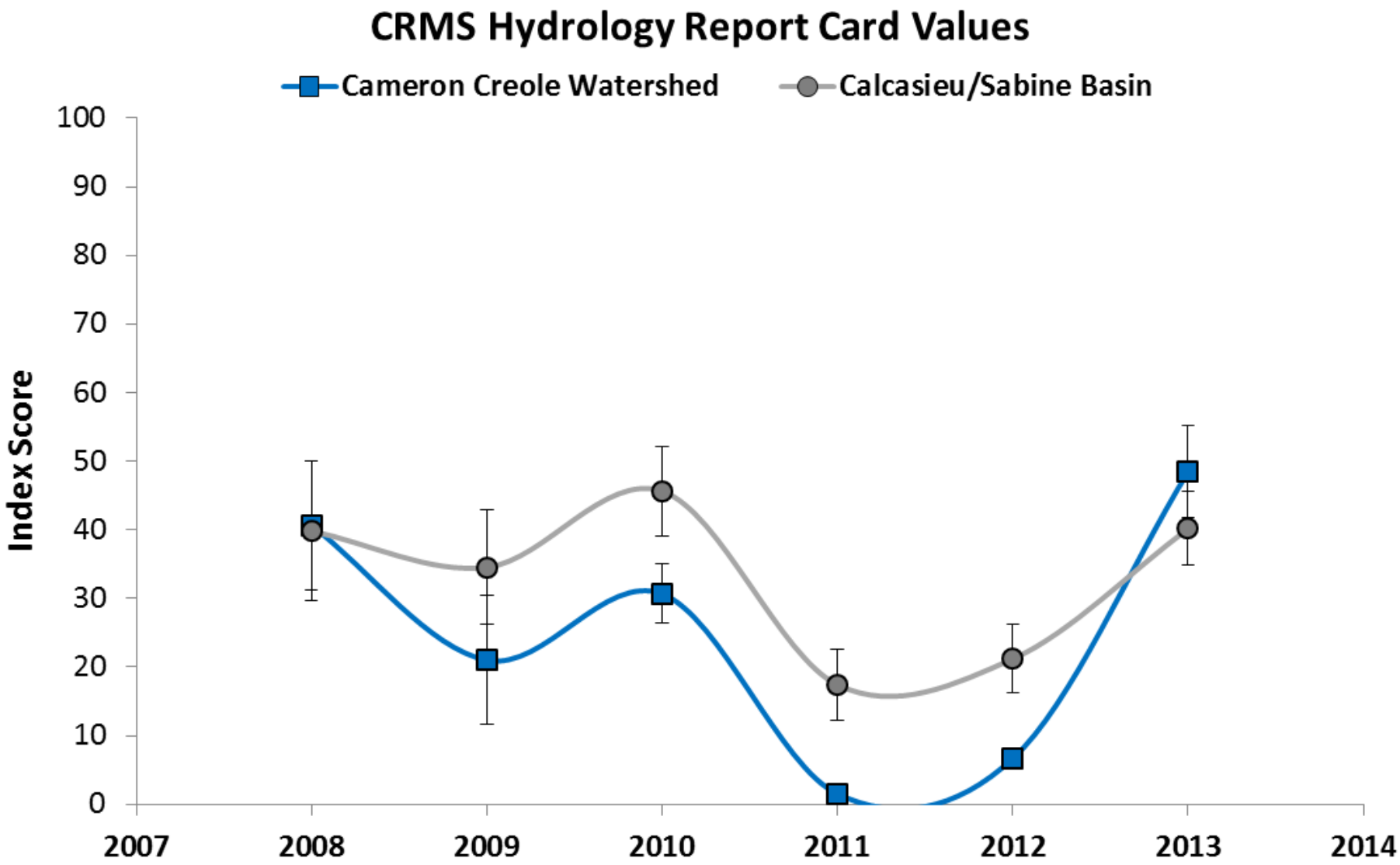
In 2011, salinity in the SE corner of Cameron Prairie NWR was > 50 ppt. The Gulf of Mexico undiluted is 33 ppt.



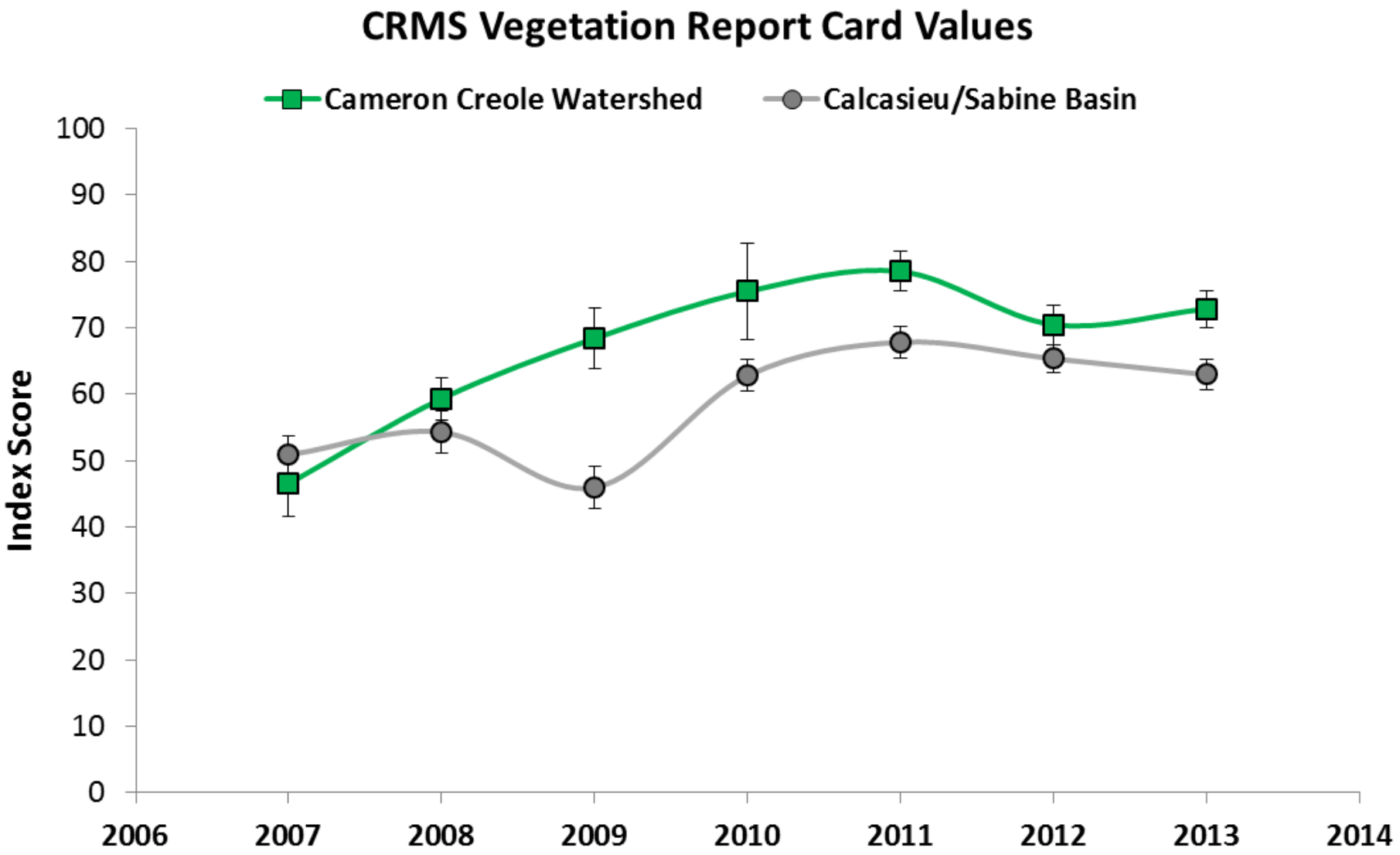
CRMS Soil Salinity –
Drought Salinity Conditions Persist In the Soil



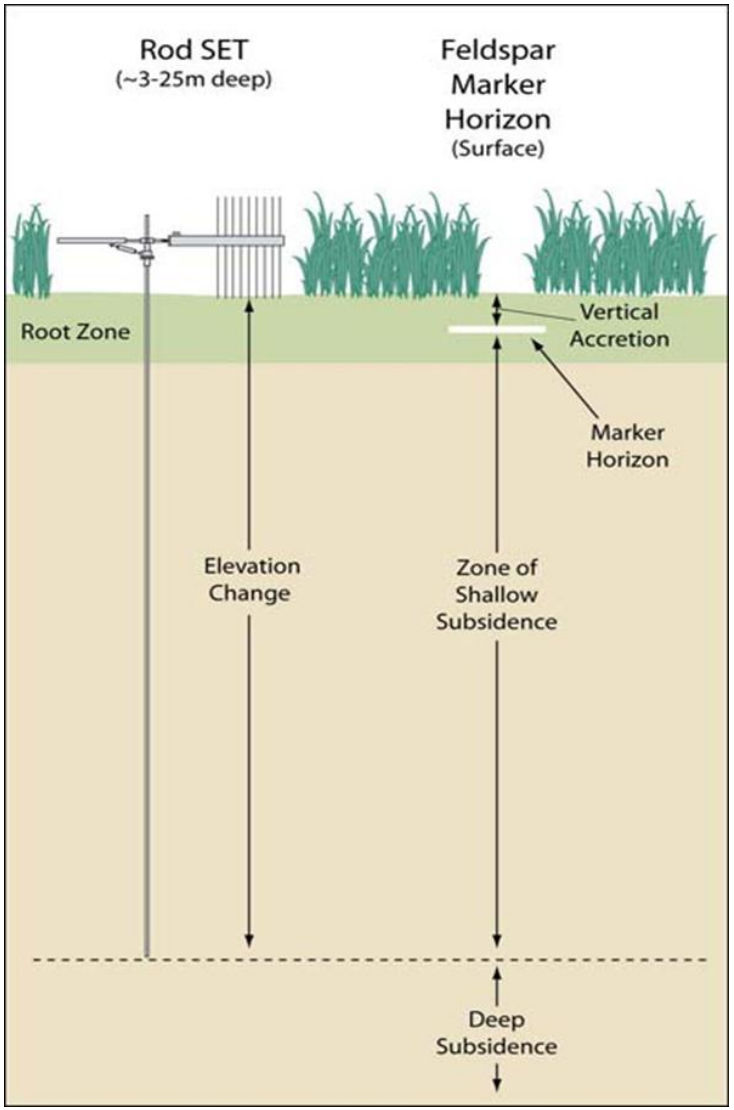
Hydrology in the Watershed was worse than the Basin but is getting better.



Vegetation in the Watershed where it exists, is in better shape than the Basin.



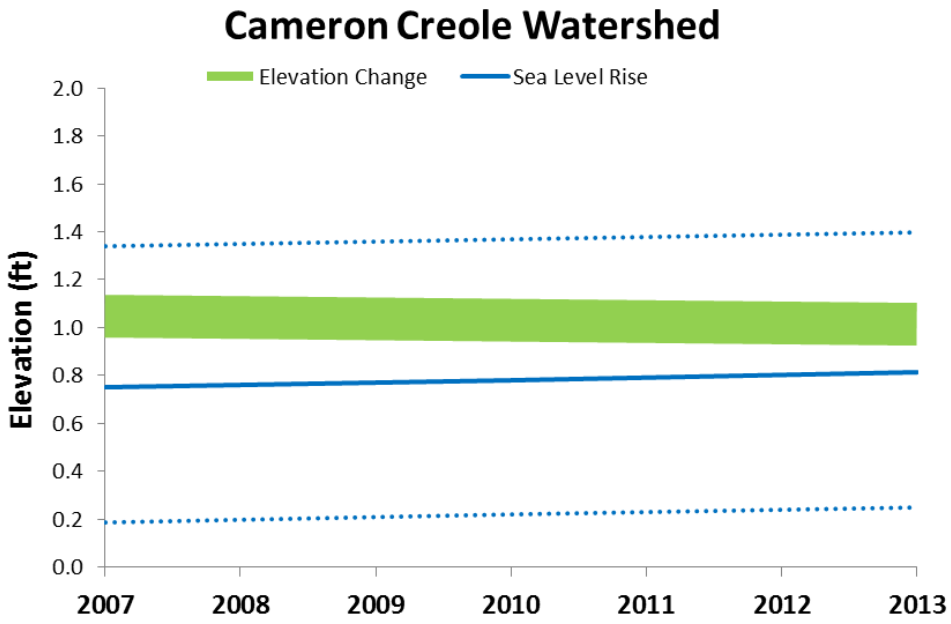
Elevation Change, Accretion, and Shallow Subsidence

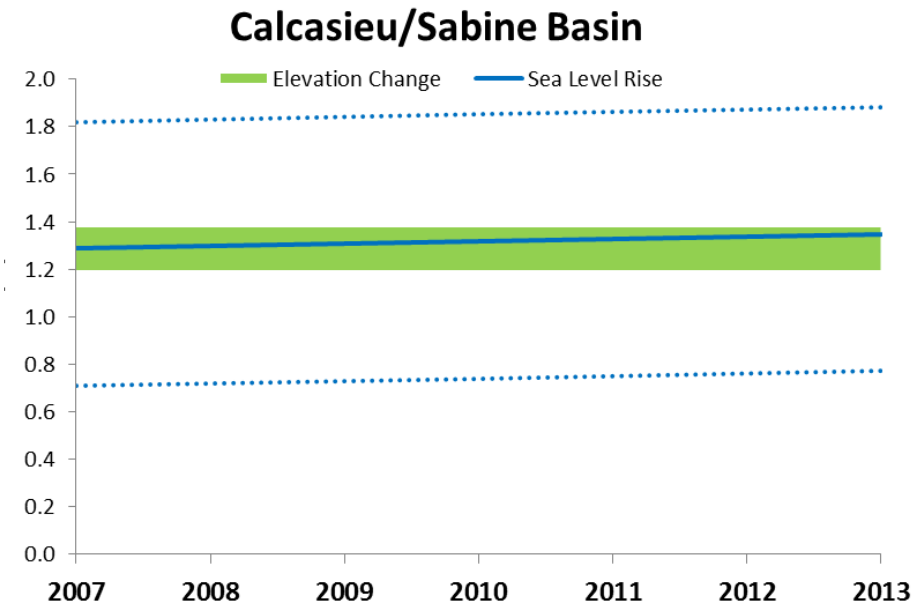


USGS Don Cahoon http://www.pwrc.usgs.gov/

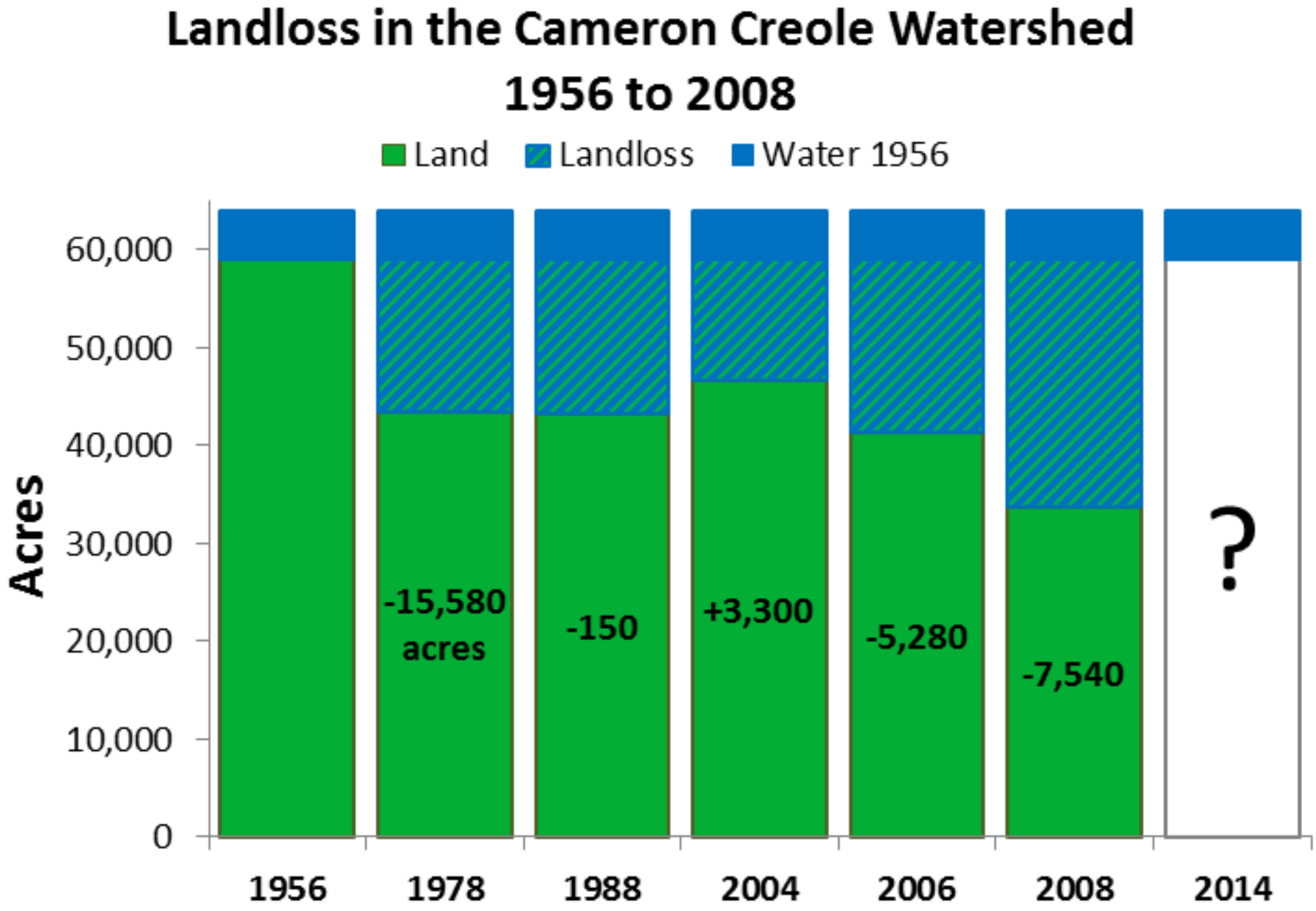
Shallow Subsidence (mm/yr)=
Accretion – Elevation Change

Elevation Change and Sea Level Rise





- Cameron Creole marshes have a lower starting elevation than the rest of the basin.
- Water elevation is also lower in Cameron Creole. The marsh sits higher in the tidal frame.
- Neither area is keeping up with sea level rise.


Landloss in the Cameron Creole Watershed
1956 to 2008
Land
Landloss
Water 1956
Acres
60,000
50,000
40,000
30,000
20,000
10,000
0
-15,580 acres
-150
+3,300
-5,280
-7,540
?
1956
1978
1988
2004
2006
2008
2014

Grand Bayou Boat Bay Hotline

855-532-9955

- The hotline has the most up date boat bay opening and closure information.