

Sediment Dynamics in Restored Tidal Wetlands of San Francisco Bay

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(HT Harvey & Assoc.)



April 2008



September 2009



May 2010



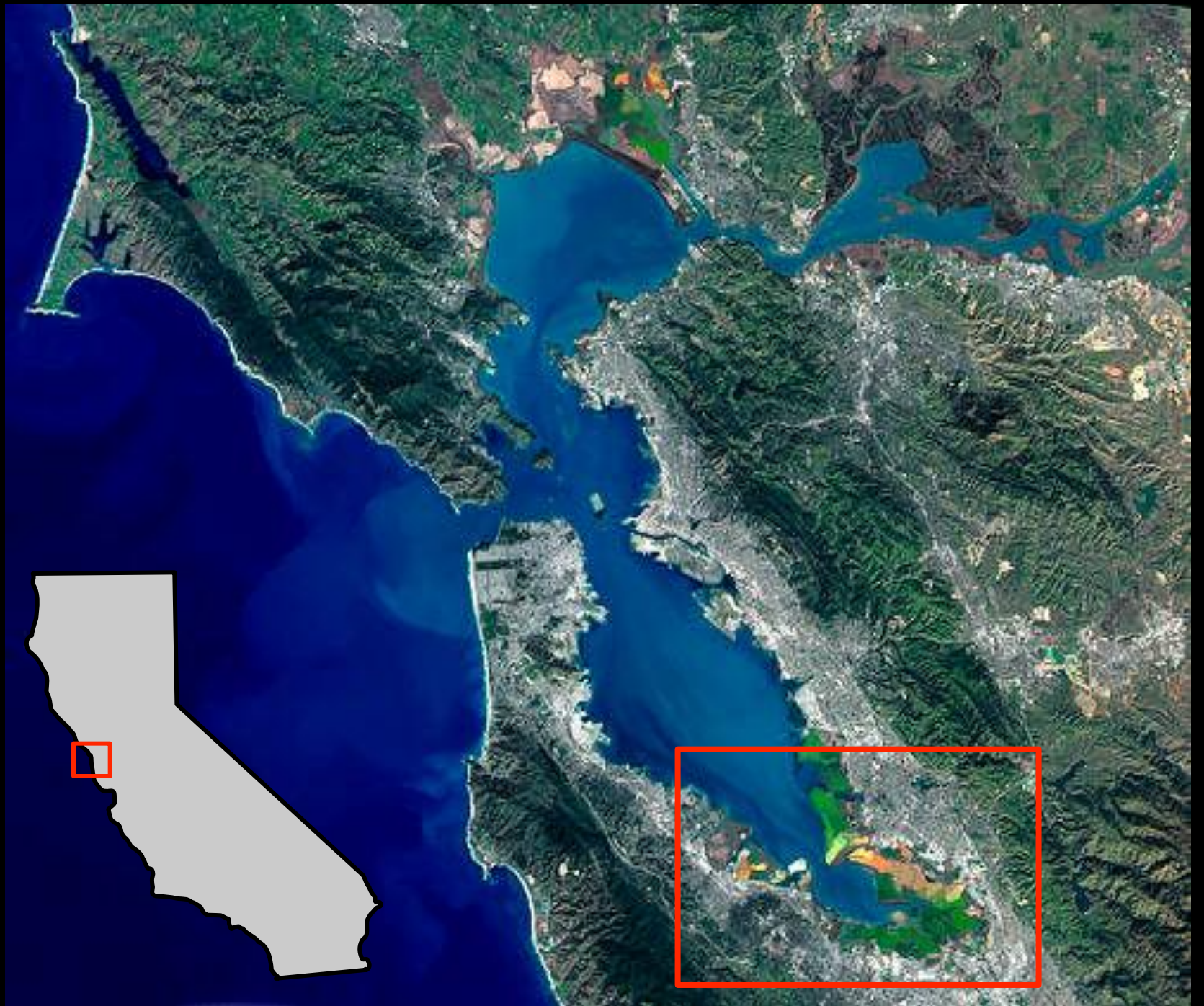
October 2010



June 2011



October 2011



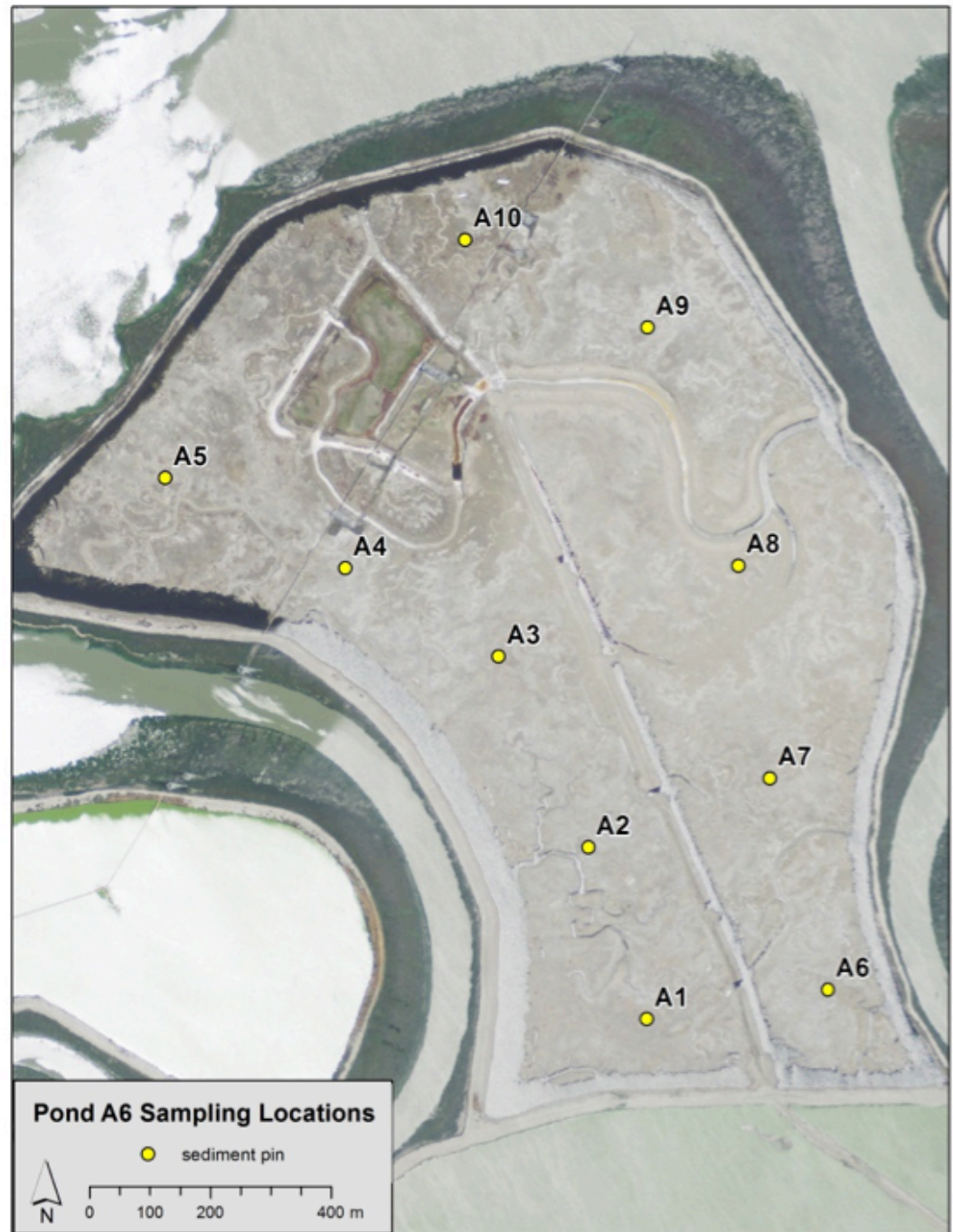
South Bay Salt Pond Restoration Project

Island Ponds / A21
Breachd in March 2006

Pond A6

Breachd in December 2010

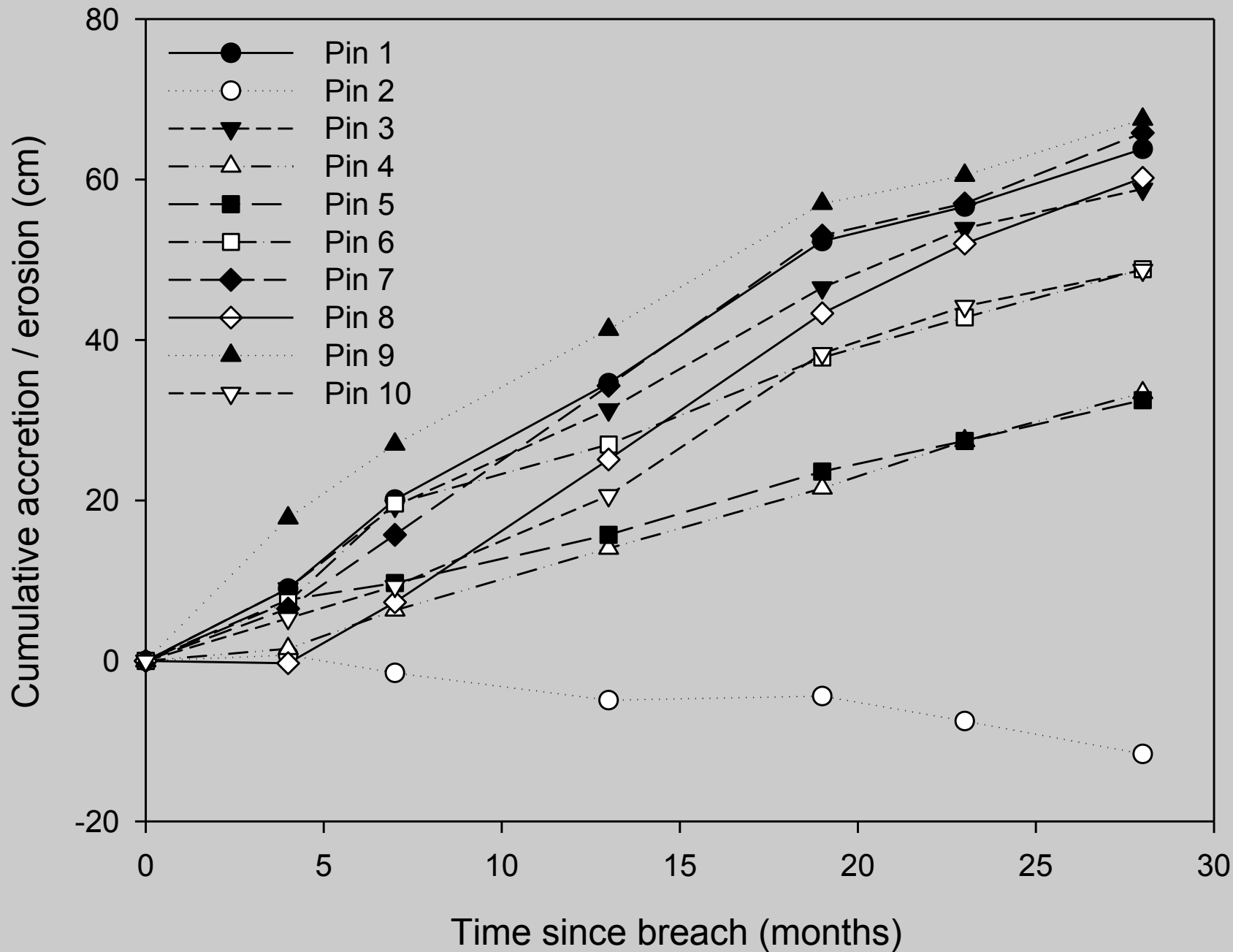
Pond A6: Breached December 2010

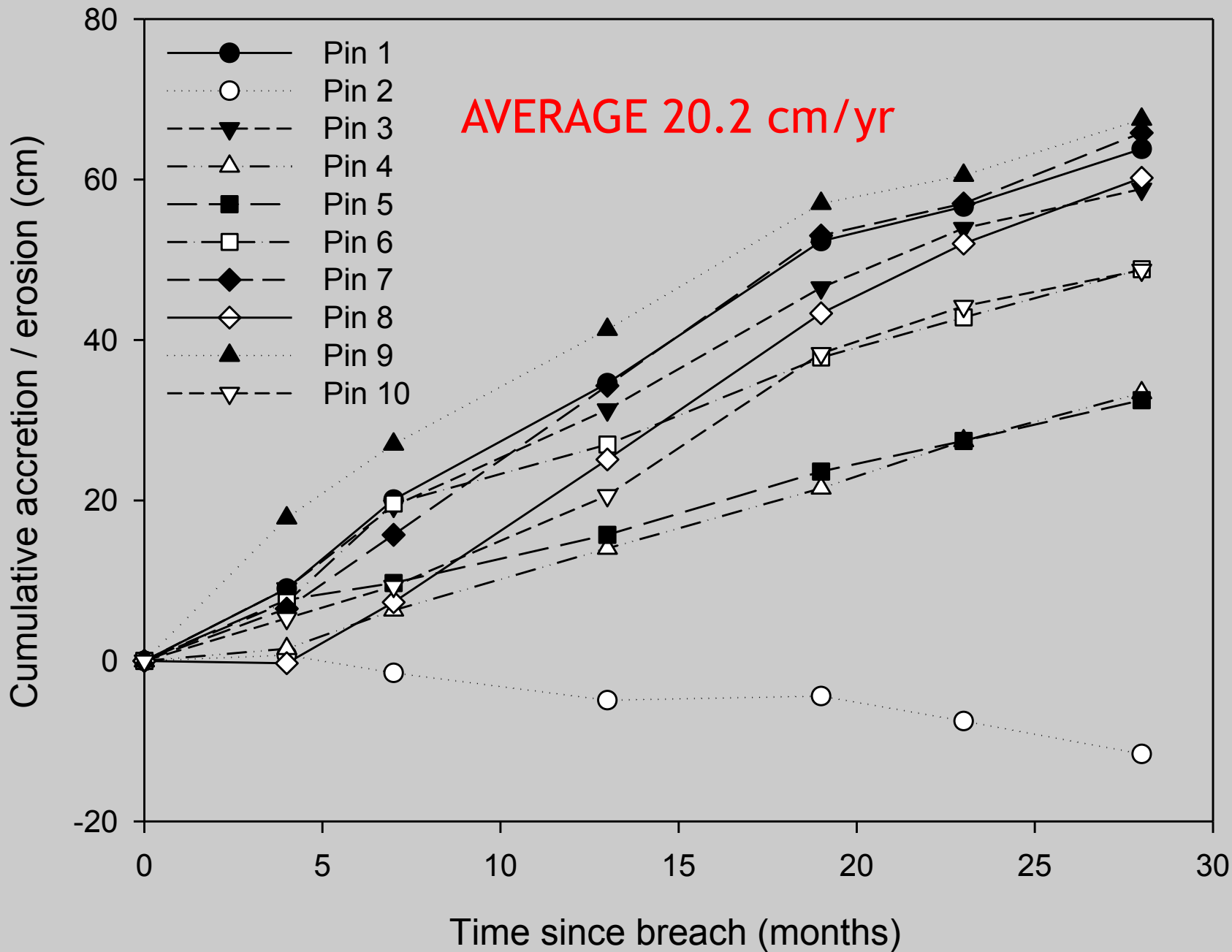














200 m

#10

#9

#5

#4

#3

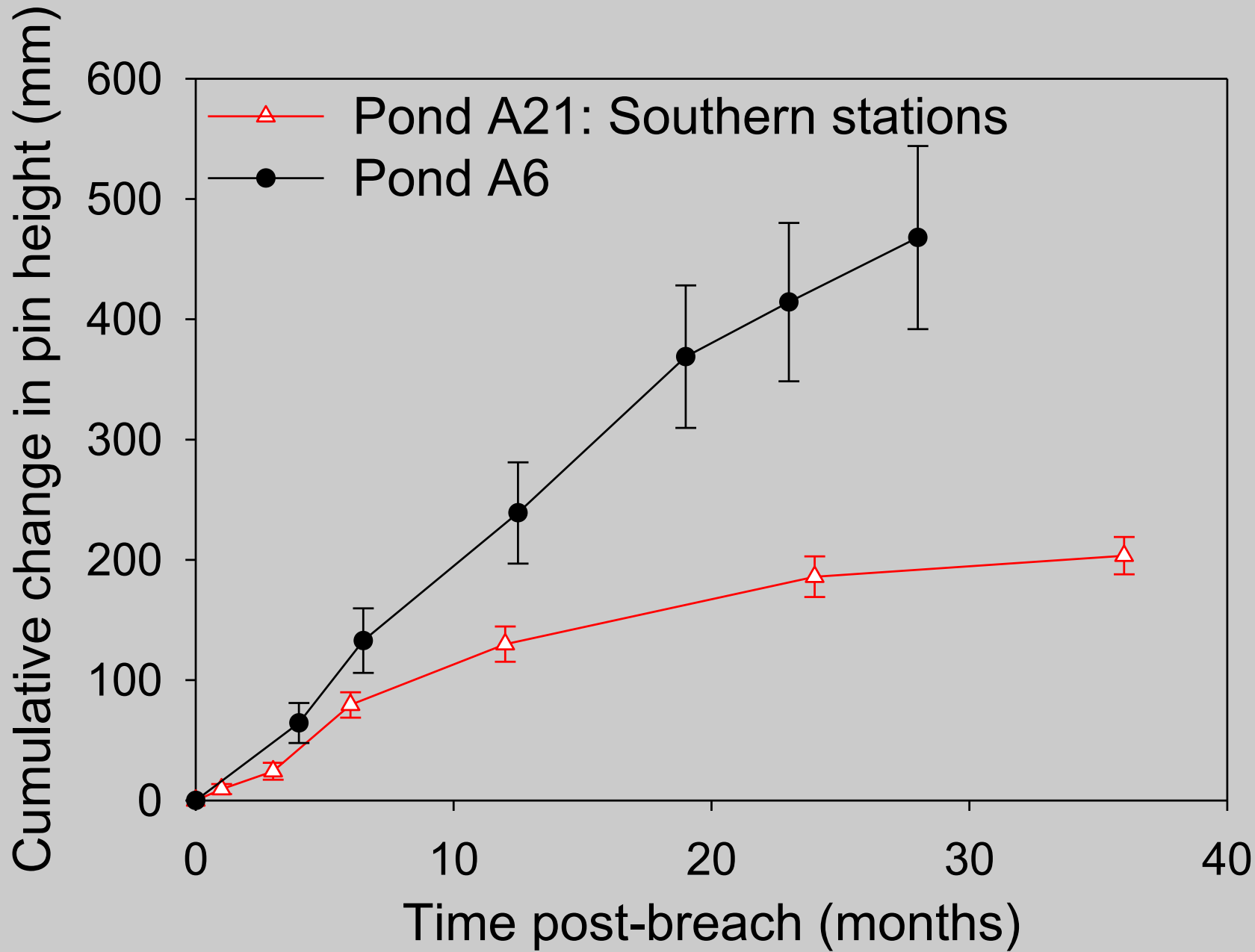
#8

#7

#2

#1

#6



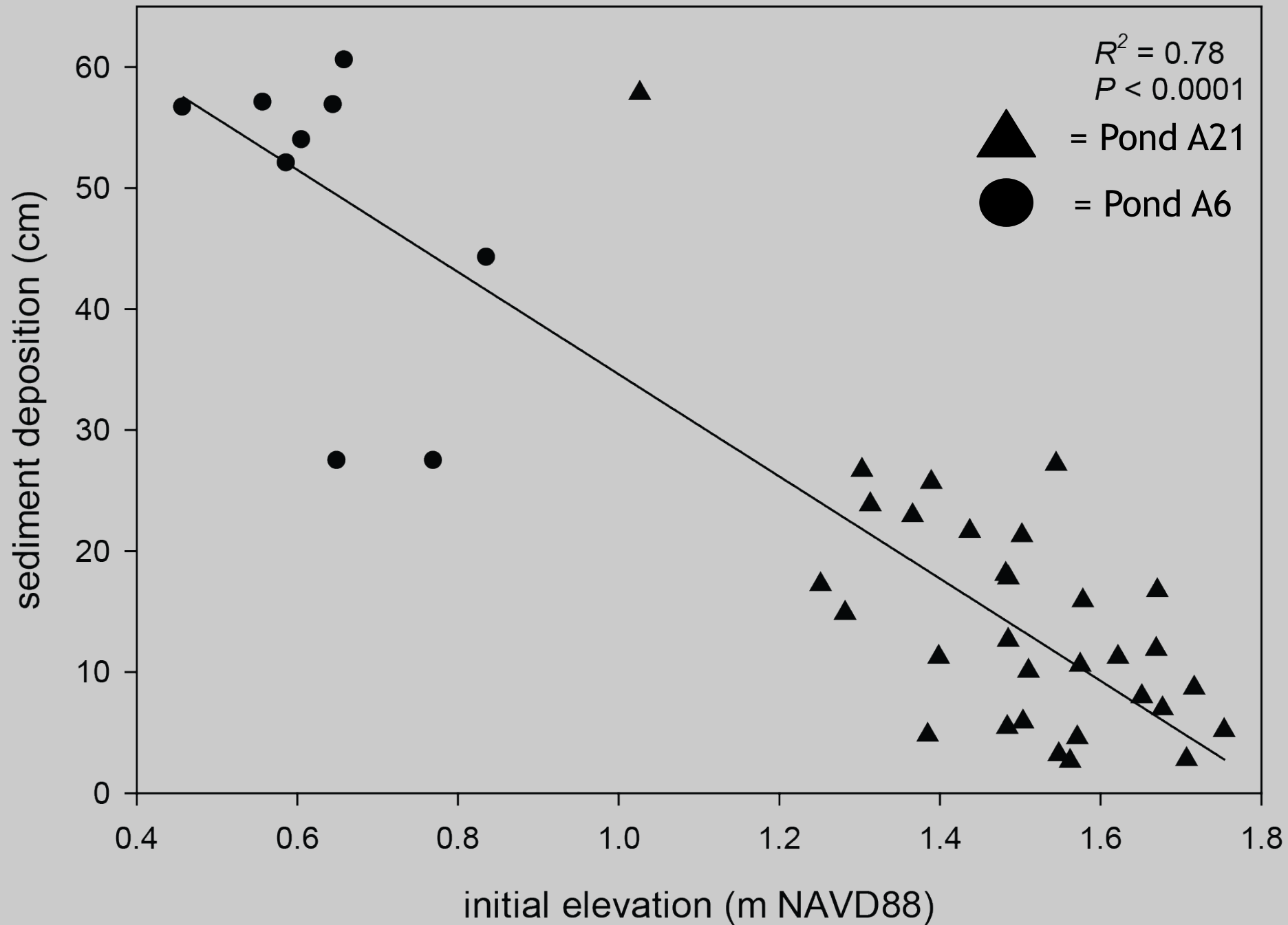
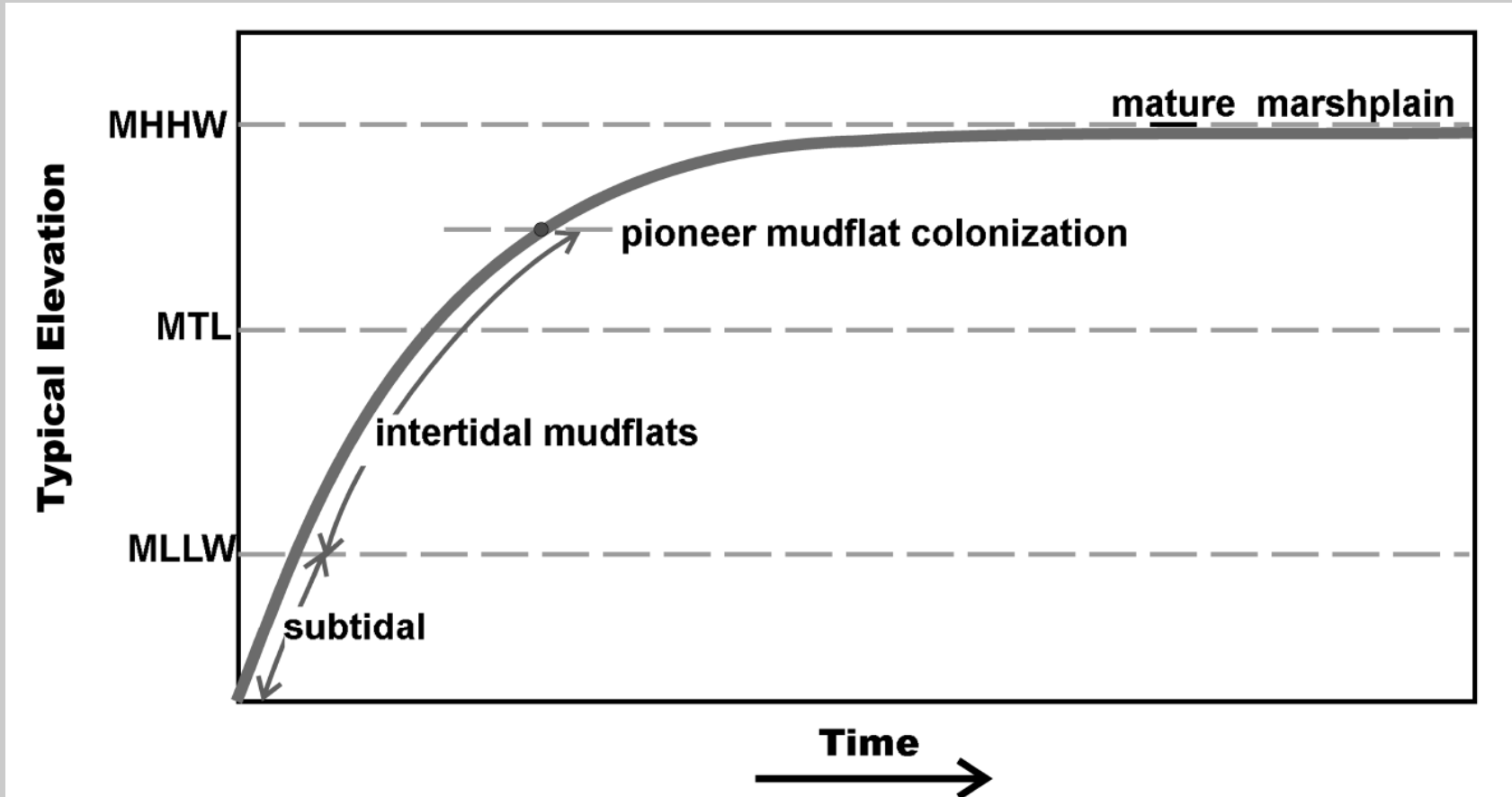




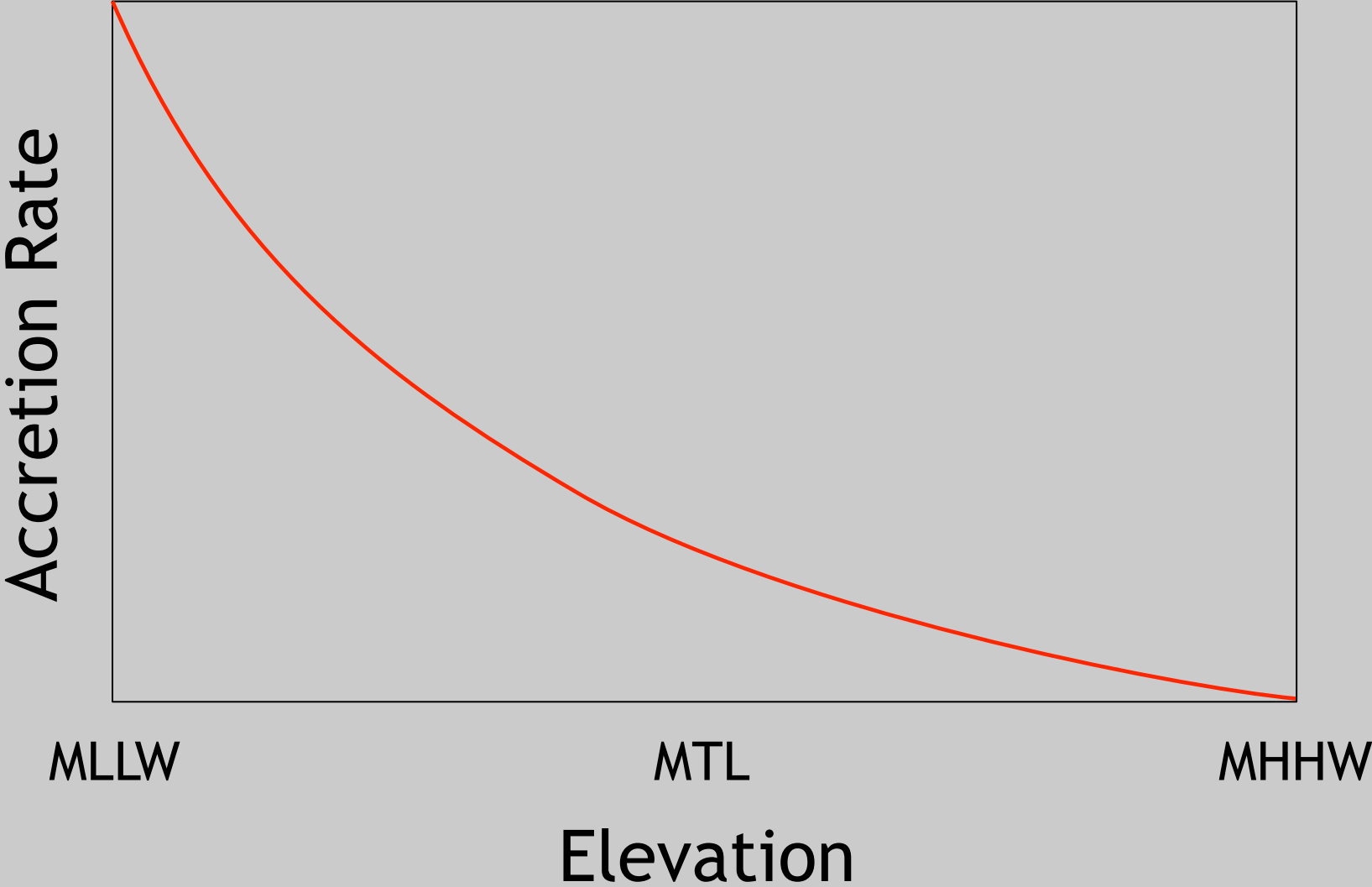
Photo credit: City of San Jose

Theoretical Tidal Wetland Development



(from Williams and Orr 2002)

Theoretical Tidal Wetland Development





Petaluma River Marsh

Coon Island

Rush Ranch

China Camp

Browns Island

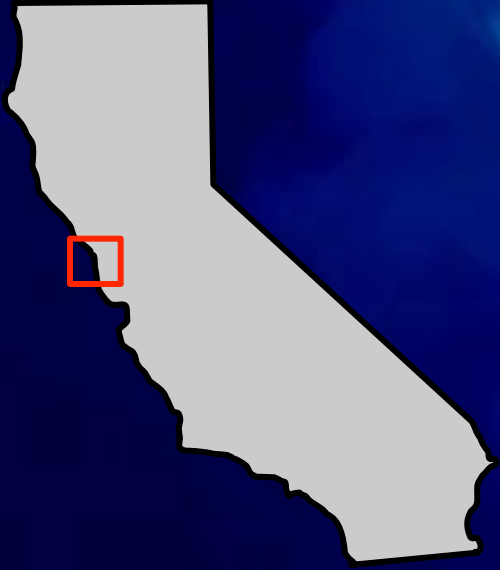
Muzzi Marsh

Whale's Tail Marsh

Island Ponds

Greco Island

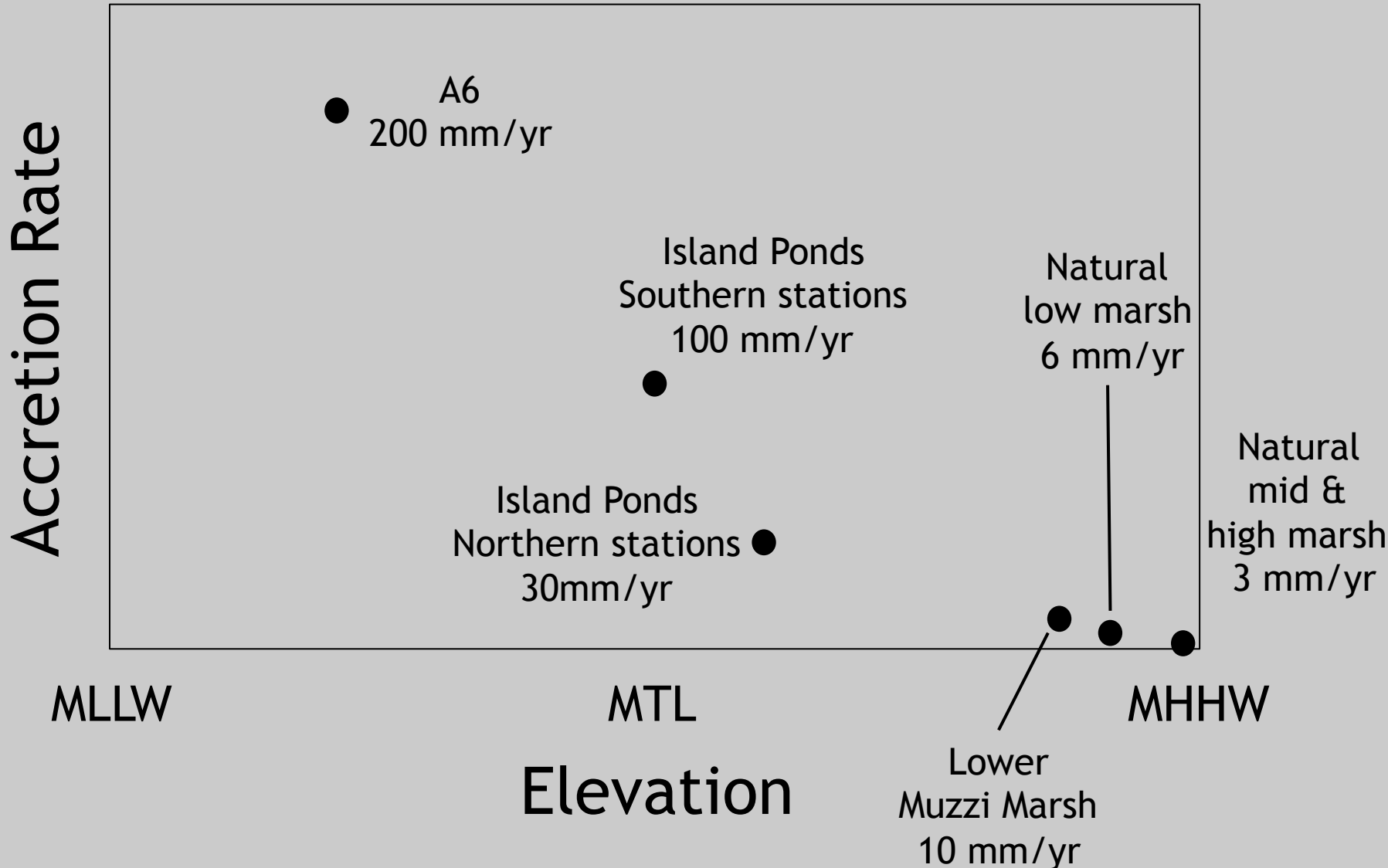
Pond A6



Summary of Accretion Rates across Sites

Sites	Range of accretion rates
Pond A6	> 200 mm/yr
Pond A21	10 to 100 mm/yr
Muzzi Marsh	3 to 10 mm/yr
Low marsh (natural)	Up to 6 mm/yr
Mid and high marsh (natural)	3 mm/yr

Theoretical Tidal Wetland Development



Pond A21 plant recruitment



pre-restoration

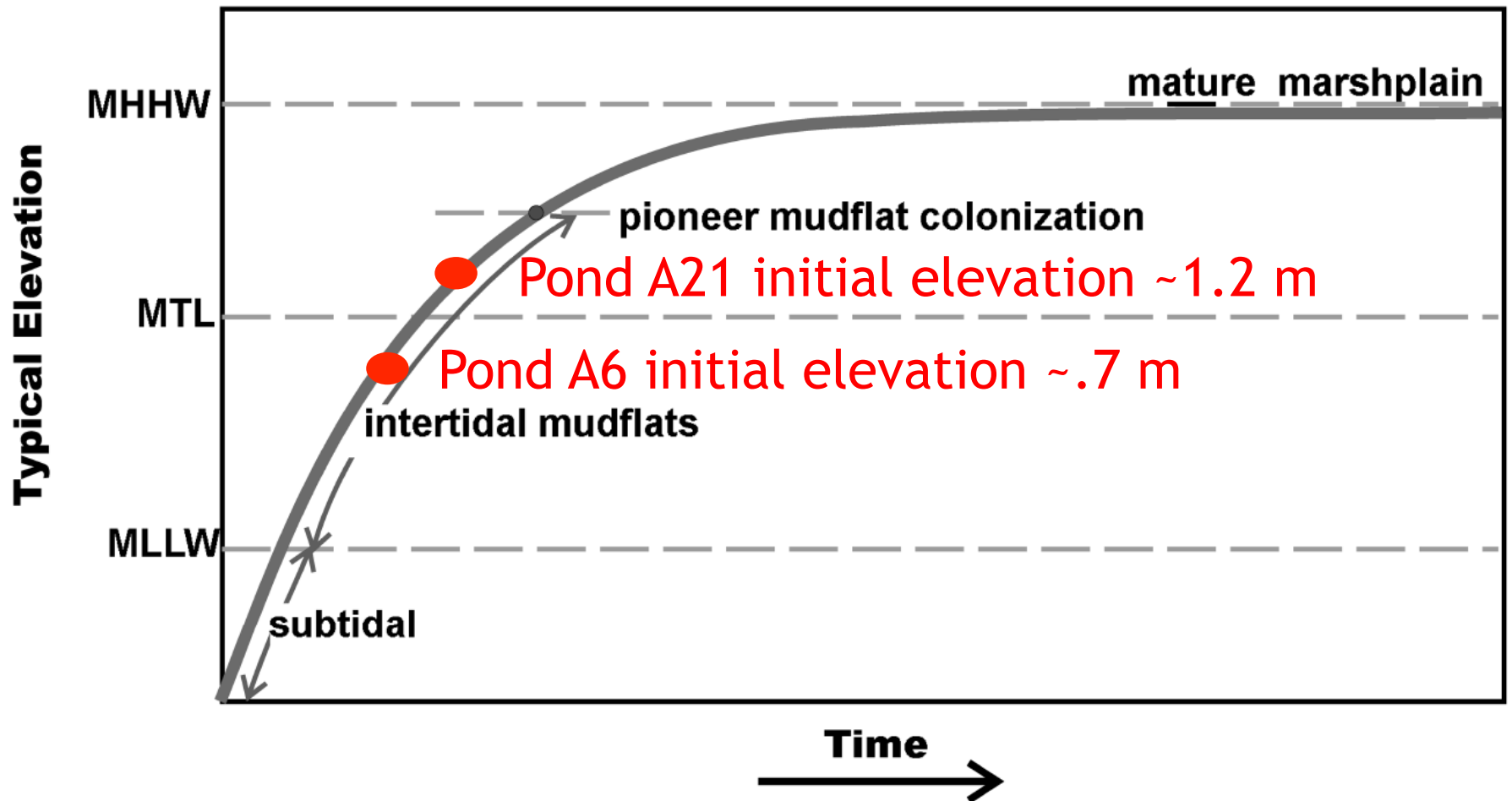
6 months



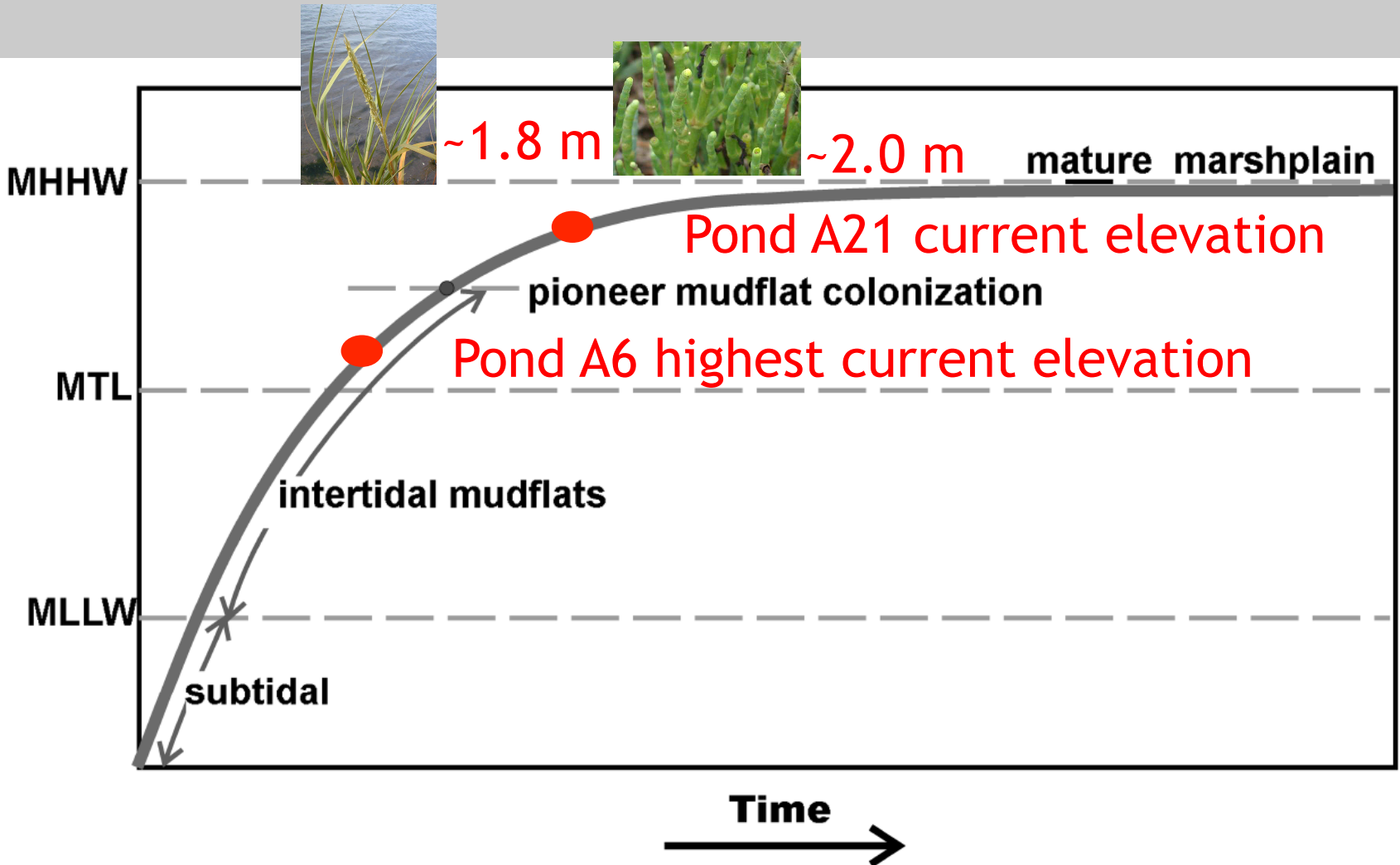
24 months

36 months





Typical Elevation



Conclusions

- Very rapid sediment accumulation in restored salt ponds in extreme South Bay
- Other factors beside elevation affect accretion (local hydrology, ditch blocks...)
- Results closely match expectations of marsh development over time
- Pond A6 still needs time to reach elevations suitable for plant colonization

Acknowledgments



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