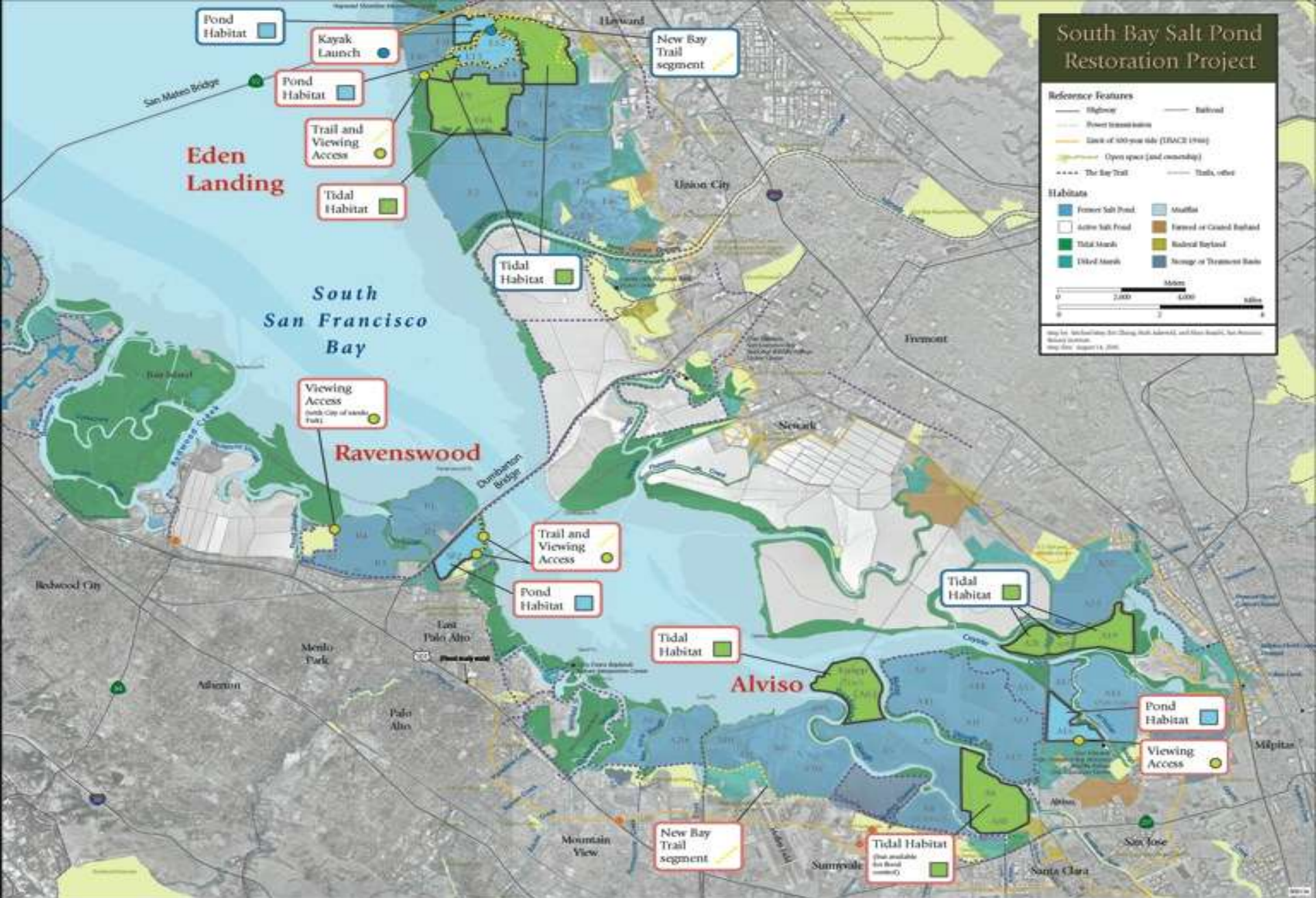


# South San Francisco Bay Salt Pond Restoration: Future Sea Level Rise Modeling Needs



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# Initial Restoration Actions

South Bay Salt Pond Restoration Project

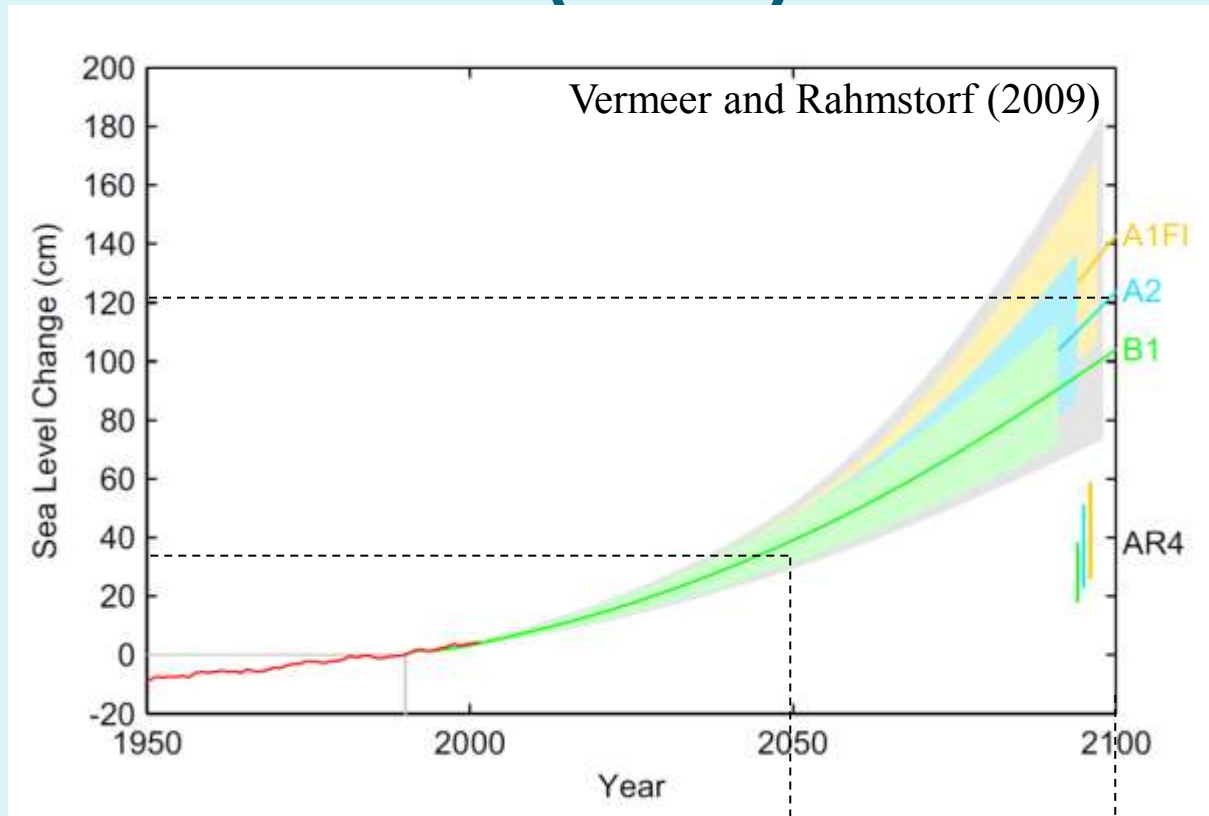


2006 - 07



proposed 2008

# Sea Level Rise (SLR) Scenarios



IPCC Emission  
Scenarios,  
semiempirical  
 $SLR=f(T)$

Last IPCC  
Estimates (2007)

36 cm<sup>1</sup> SLR over 40 yrs = 0.7 cm/yr

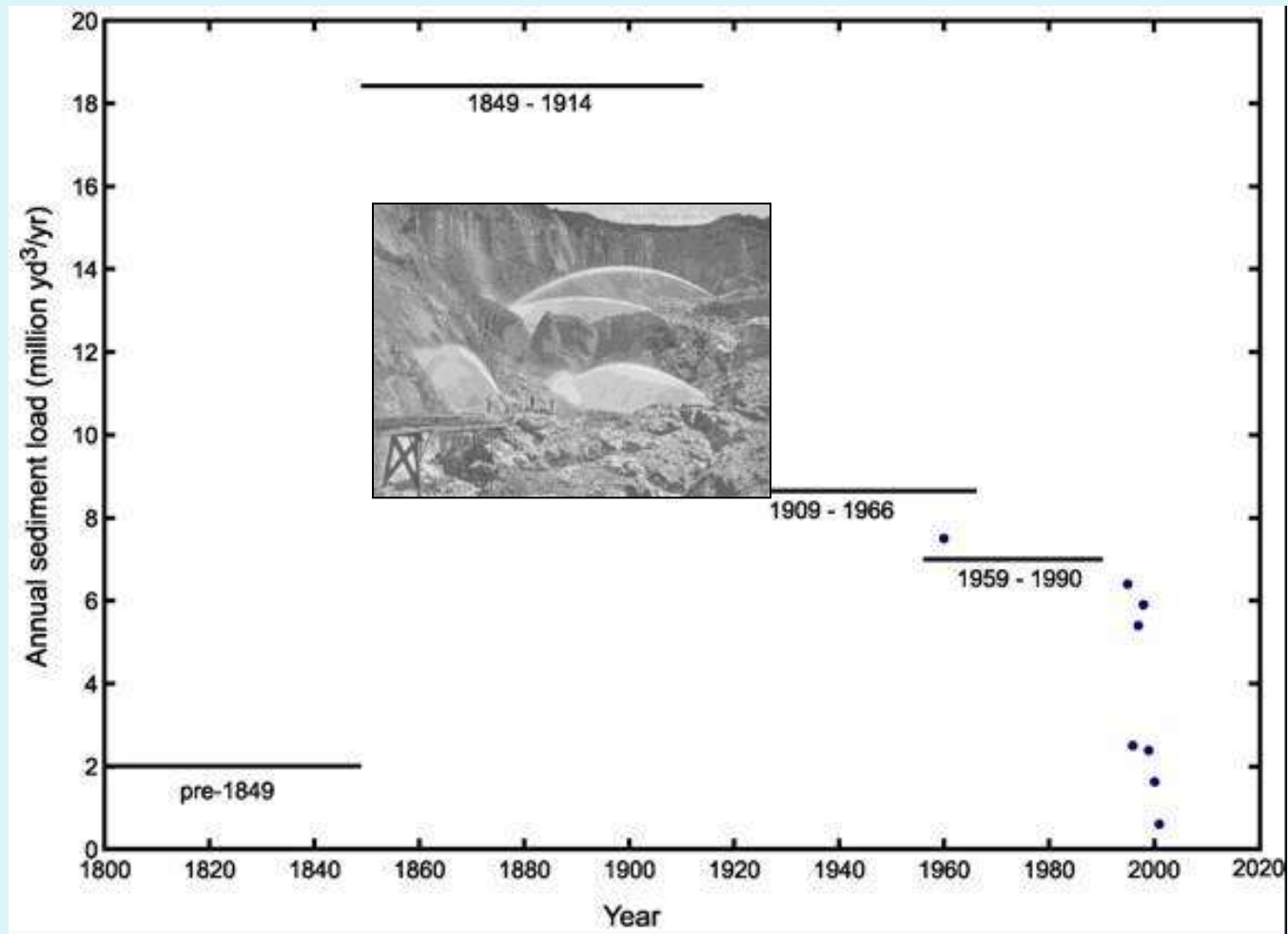
121 cm<sup>1</sup> SLR over 100 yrs = 1.2 cm/yr

# Pond Restoration and Sea Level Rise

- SBSP is using passive restoration
- Breach levees, let natural sedimentation processes fill to marsh plain elevation
- Some ponds are from a few to several feet below MTL
- Need SLR models working with pond system, not existing marsh



# Past 200 years of sediment supply



Schoellhamer, USGS

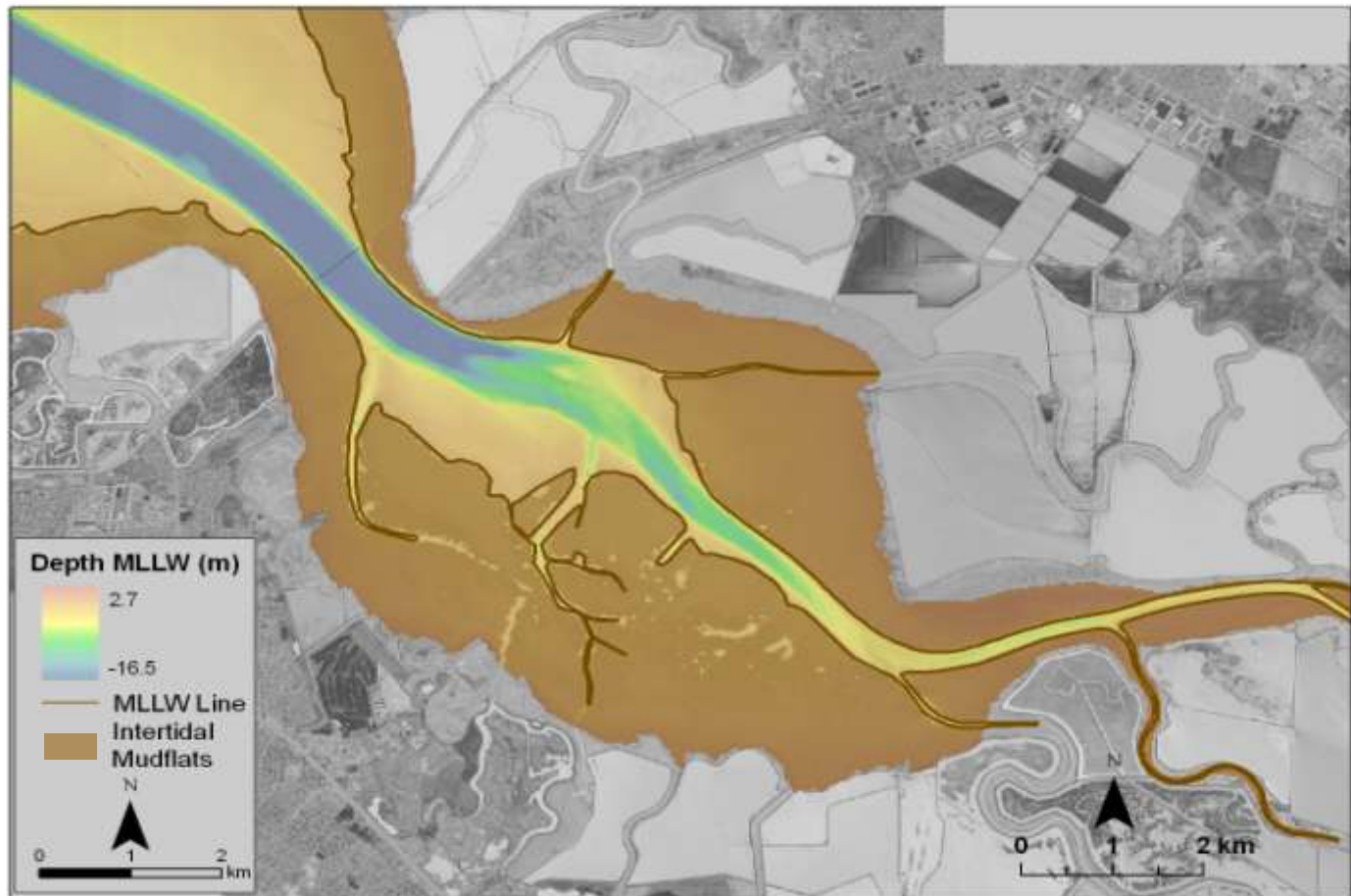
# Will there be enough sediment?

- Preliminary results – Cumulative Sediment Flux

Negative is flood direction(into far south SFB)

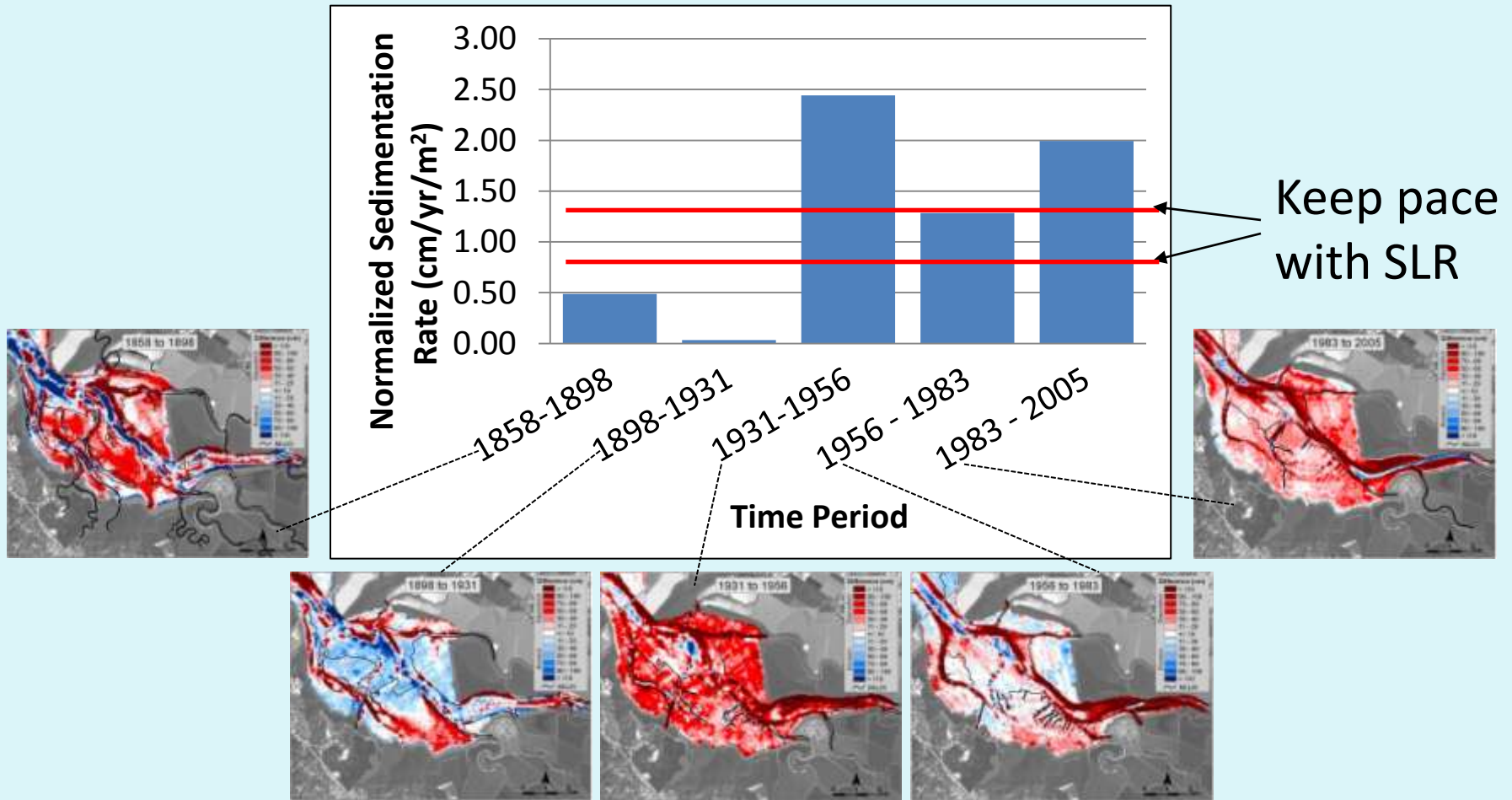


# South SF Bay Bathymetry



Jaffe, USGS 2004 and 2005 data

# Historical versus future sediment “demand”

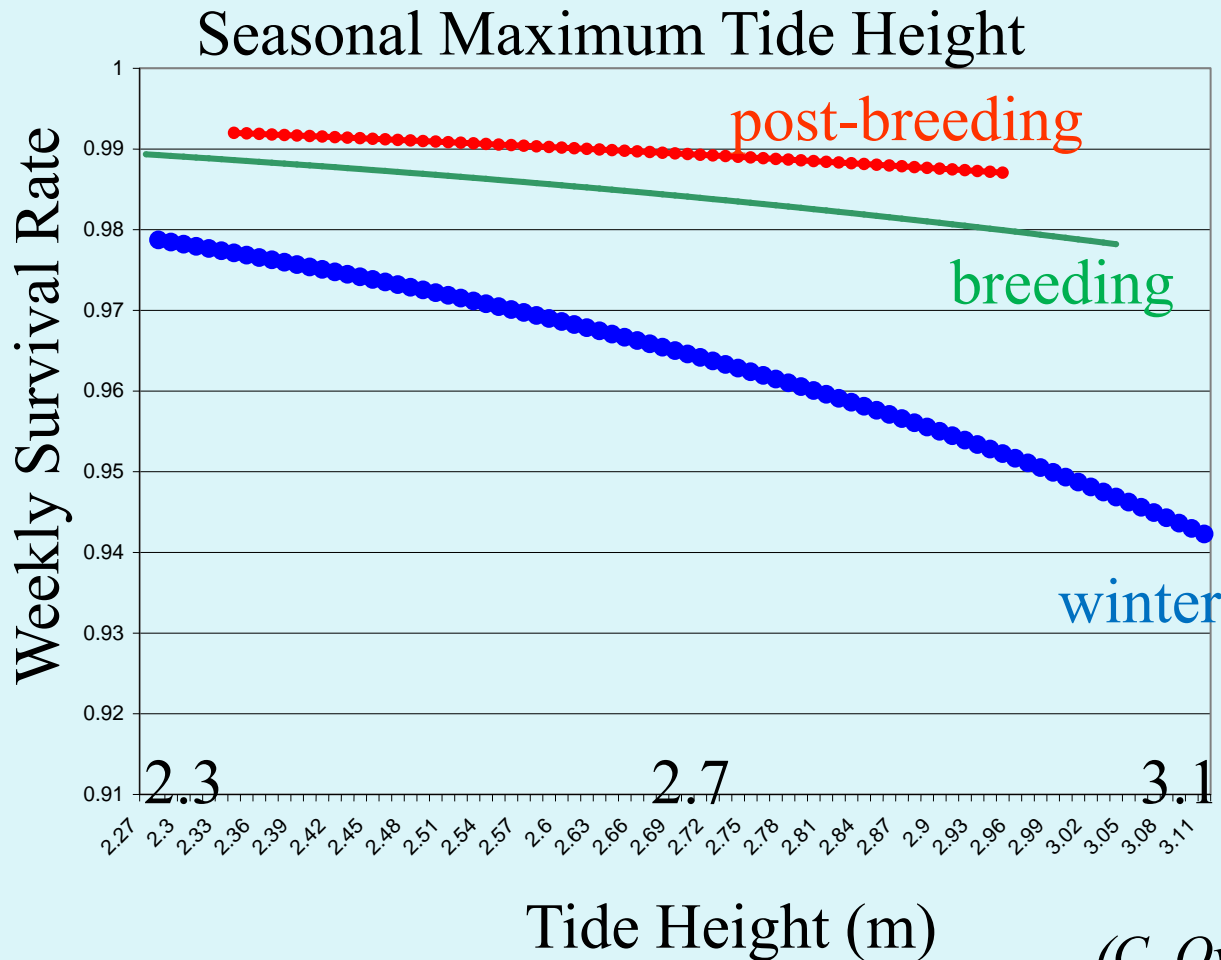


Jaffe, USGS

36 cm SLR over 40 yrs = 0.7 cm/yr

121 cm SLR over 100 yrs = 1.2 cm/yr

# Clapper Rail survival varies with seasonal tides



(C. Overton et al., in prep.)

# Modeling Needs

- **Sediment Budget Issues** – what is future sediment budget for retaining mudflats, adaption for sea level rise, and marsh restoration? Should we restore ponds sooner to capture the sediment that is available now?
- Model SLR in a pond to marsh system
- **Sustainability of restored marshes** – What is rate of natural marsh accretion processes vs rate of SLR? During different time periods?
- **High tide/storm surge impacts** – What are expected high water events with SLR? How can we provide refugia for listed species?