

A photograph of a lush green marsh landscape. A winding waterway, possibly a stream or canal, flows through the center of the marsh, bordered by tall grasses. The sky is blue with scattered white clouds. The text is overlaid on the upper portion of the image.

Marsh Restoration Plans at Parker River NWR

Salt Marsh Working Group

Lightning Talks

May 16, 2019

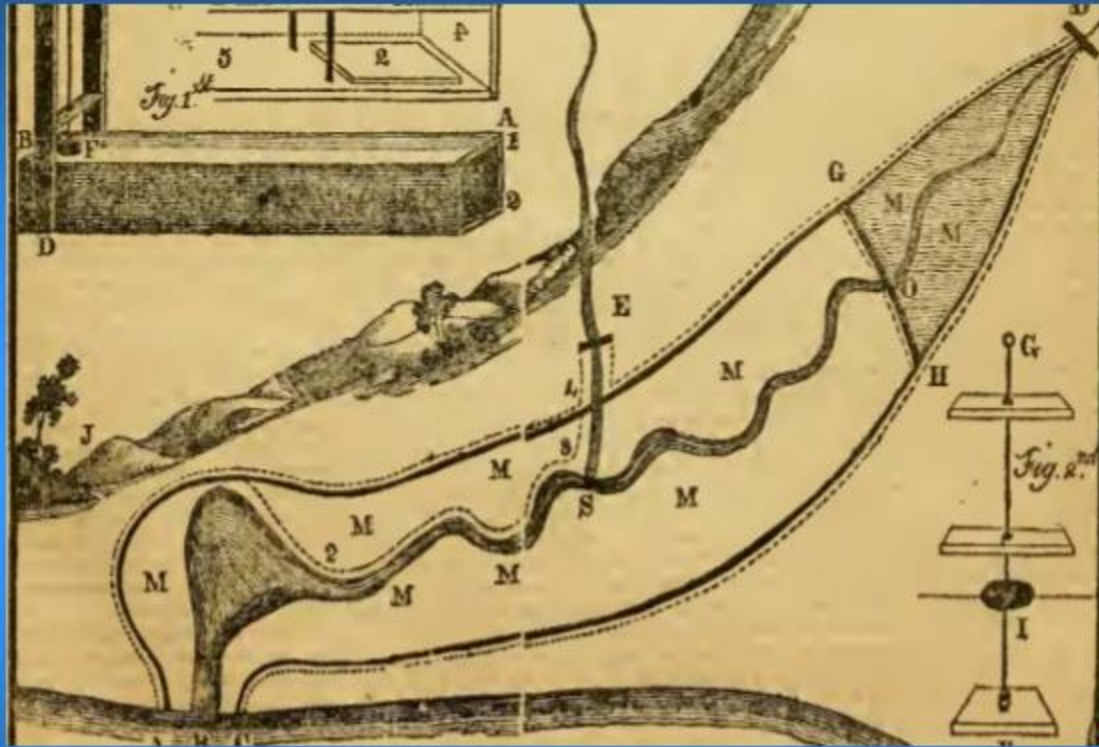
A PAIR OF PARADOXES

- 1 Salt marshes need salinity and sediments from tidal flooding – BUT increased flooding from SLR may be drowning them!
- 2 Salt marshes need to drain so their roots maintain energy balance - BUT draining of the underlying peat results in oxidation & subsidence, increasing susceptibility to drowning as sea level rises.



Slide by David Burdick, UNH

FARMERS IN THE MARSH



American Farmer, Friday October 27, 1820

Legacy Embankments and Ditches

Slide by Susan Adamociza, Geoff Wilson

Marsh Restoration Techniques at Parker River NWR (With Many Collaborators)

Pilot Techniques

- Runnels (2014-2016)
- Ditch Plug Removal (2015-2017)
- Ditch Remediation (2012, 2014-2016)
- Modified OMWM (2019-2020)
- Nesting islands for sparrows (May 2019)

Larger Scale Restoration

- Runnel (2019-2020, ~900 ac)
- Ditch Plug Removal (May 2019)
- Integrated tideshed restoration

Monitoring

- Large Sediment Deposition
(~60 ac & 3 ac)
- Natural pool breaching

Light footprint; Leverages salt marsh processes

Ditch Plug Removal

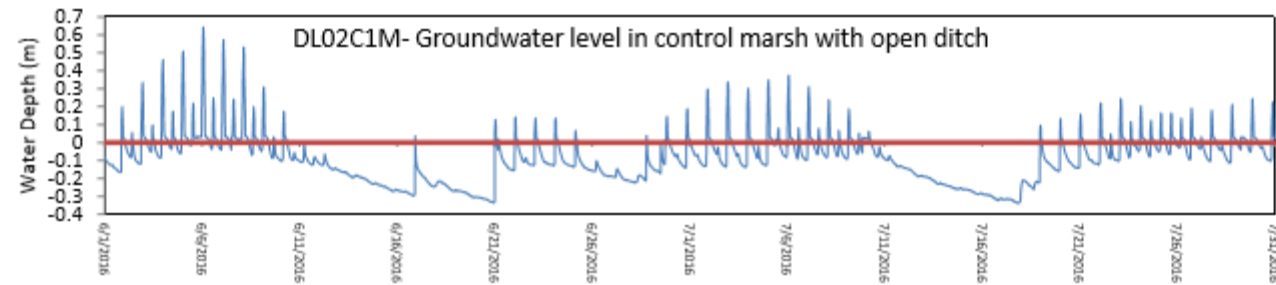
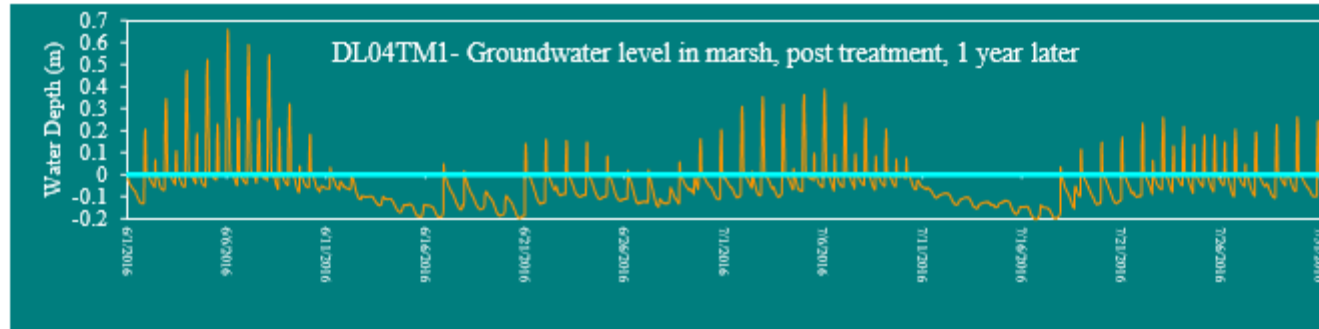
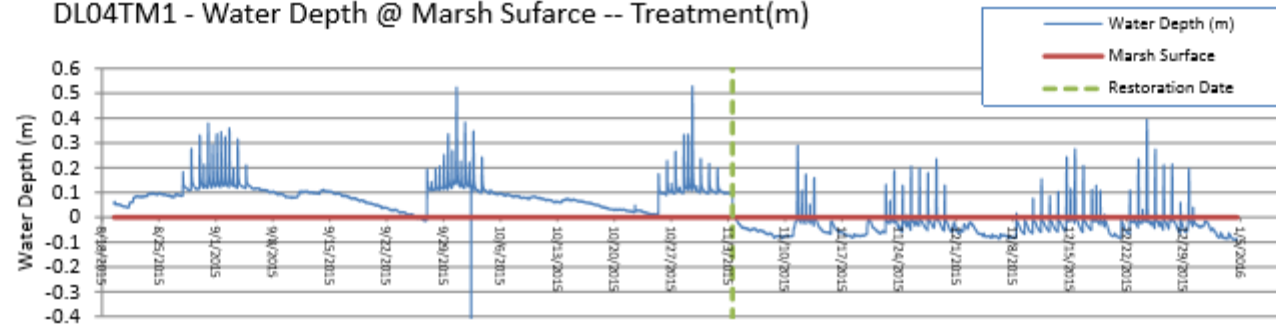


Undoing Past “Restoration” – Ditch Plug Removal





DL04TM1 - Water Depth @ Marsh Surface -- Treatment(m)



T3PS2_S



before 11/3/2015



11/3/2015 (30 min after)



11/27/2017



10/20/2016

T4PS2_E



11/3/2015, before



11/21/2017



10/20/2016

Ditch Plug Removal

- 20 ditch plugs
- May 23, 2019
- Synergic effects



Ditch Plug Removal— reading the marsh





- Questions?
- Thoughts?
- Concerns?