

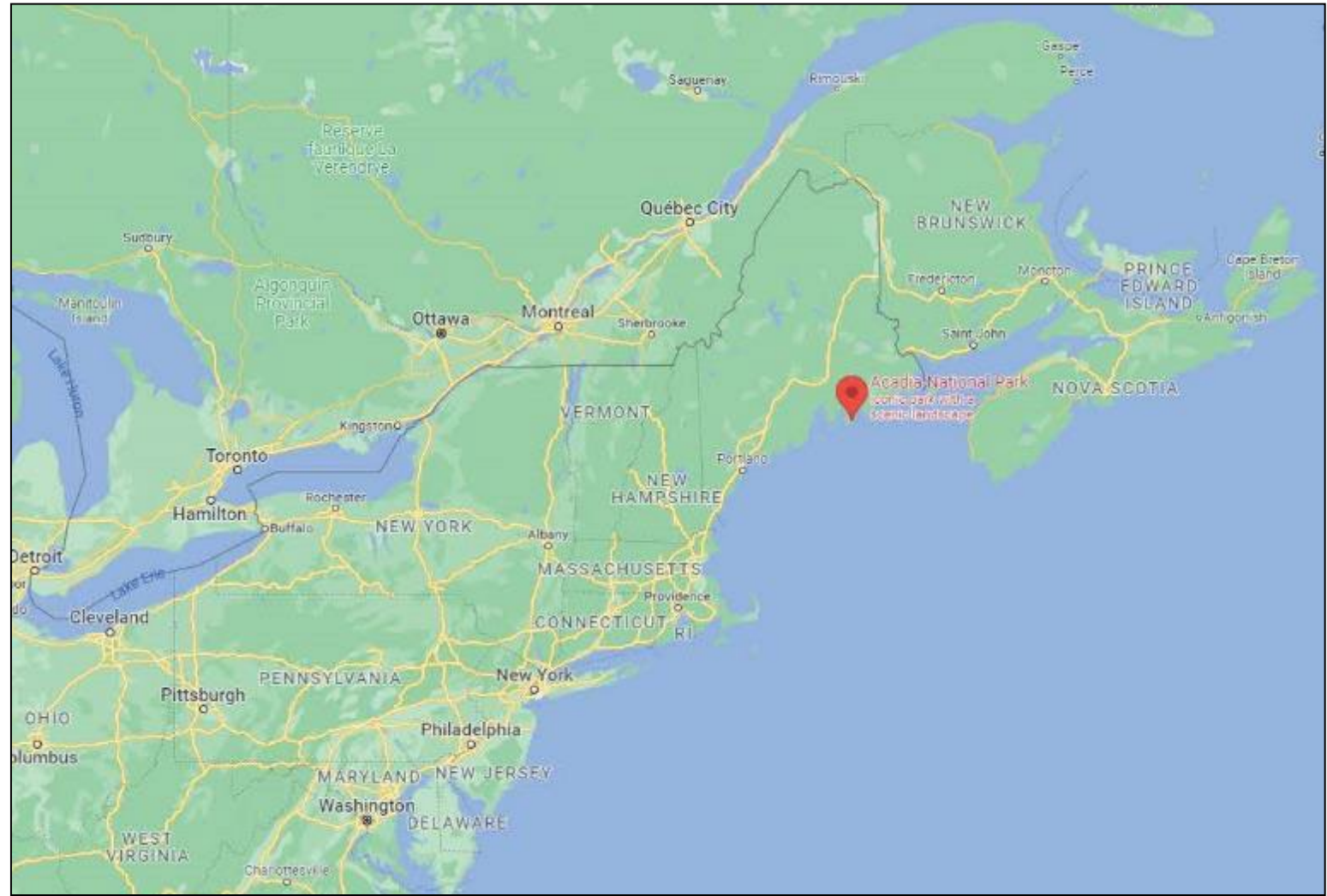
# Climate-Smart Restoration in the Great Meadow, Acadia National Park

Brian Henkel, Project Coordinator, Friends of Acadia



[www.friendsofacadia.org](http://www.friendsofacadia.org) | 207-288-3340 | 43 Cottage Street | Bar Harbor, Maine 04609

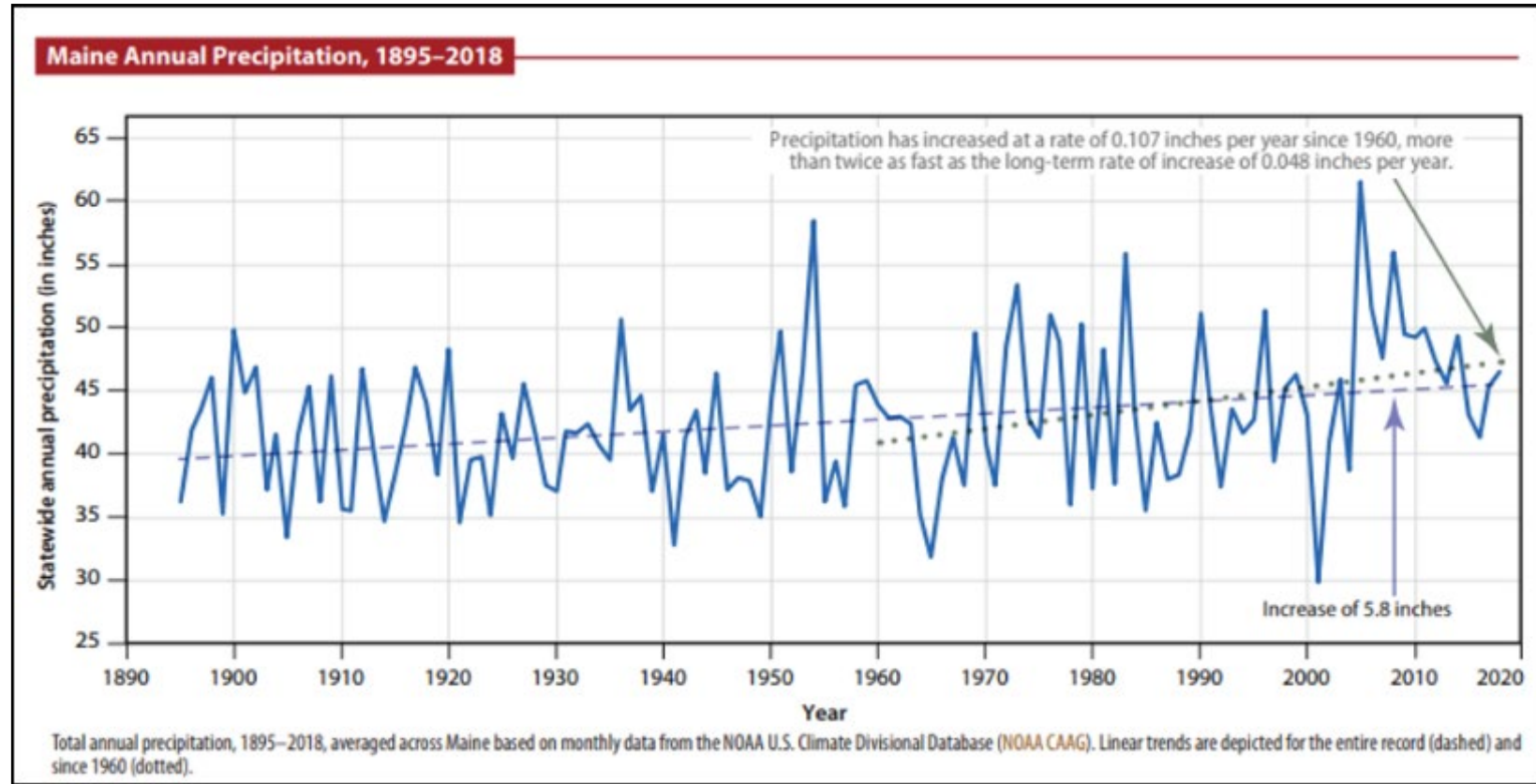
# Acadia National Park



Fernandez et al. 2020. Maine's Climate Future

[www.friendsofacadia.org](http://www.friendsofacadia.org) | 207-288-3340 | 43 Cottage Street | Bar Harbor, Maine 04609

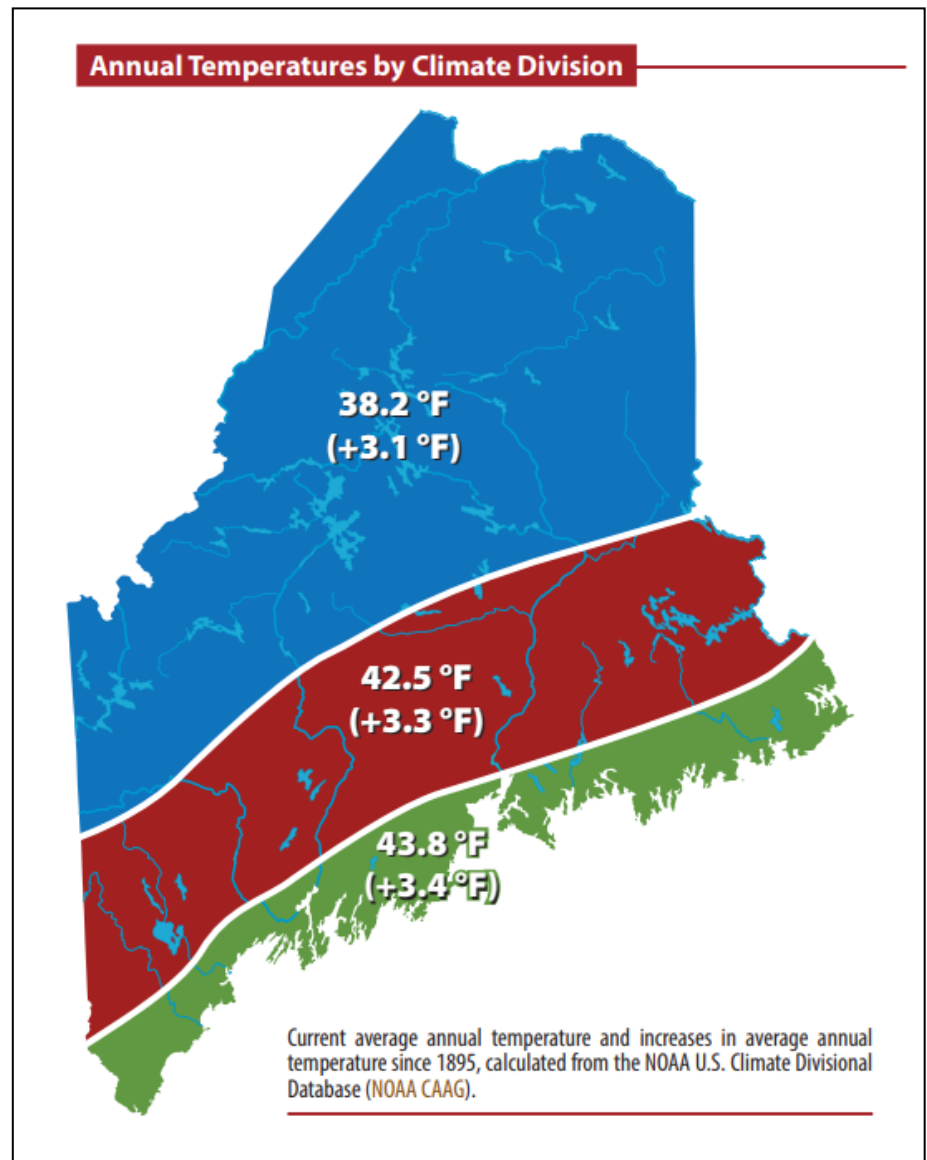
Acadia is a measurably different place



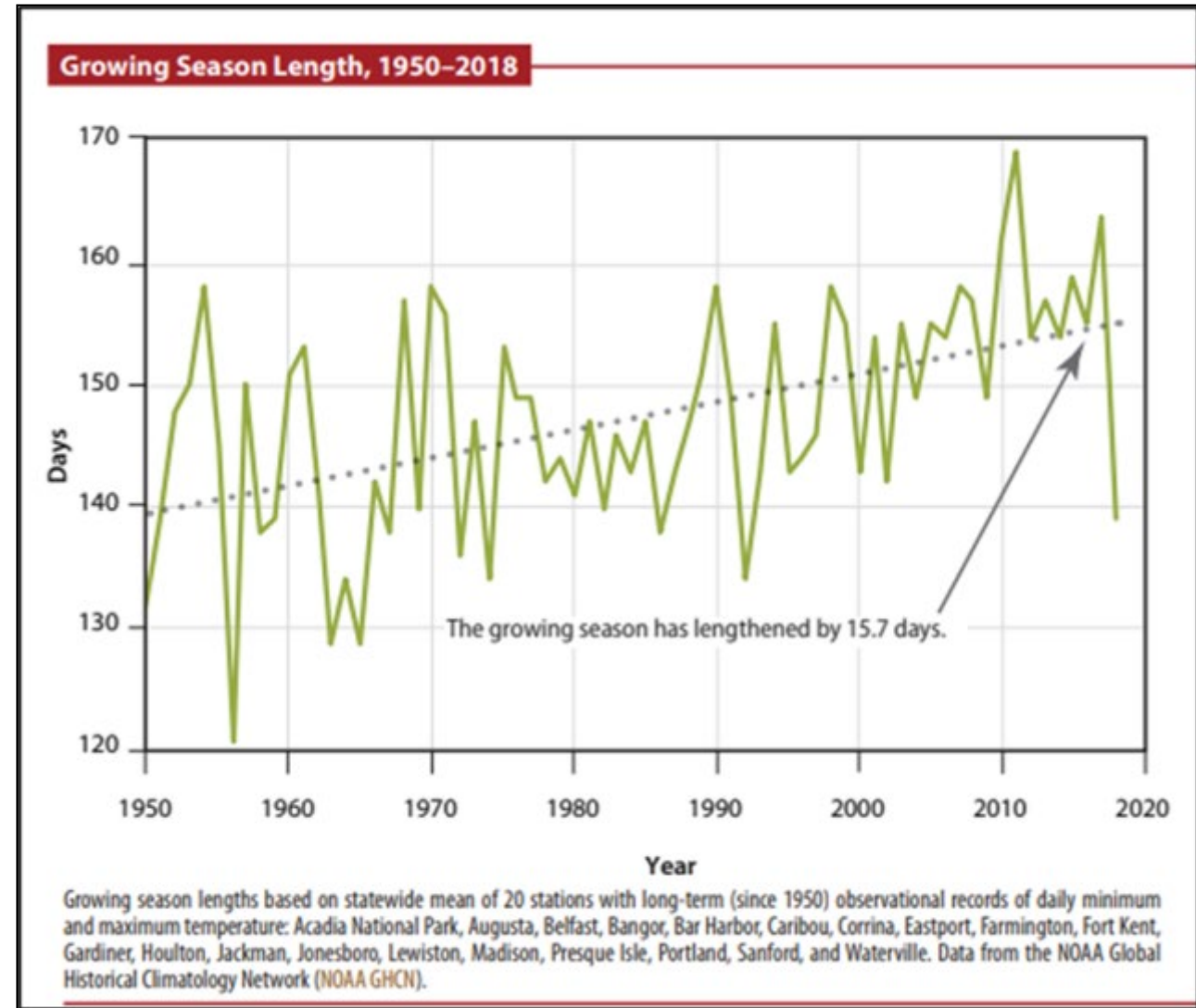
Extreme rainfall events that used to occur every 50 years now occur every 12 years.



Acadia is a  
measurably  
different place



Acadia is a  
measurably  
different place



# Changes are affecting park ecosystems

- One of every six plant species lost
- Decline in abundance remaining native species
- Bird populations shifting
- Conditions favor invasive species



# Managing in the Face of Climate Change

- Restoring past conditions not viable
- Transition won't be smooth
- Focus on restoring health
- Understand where and how to take action



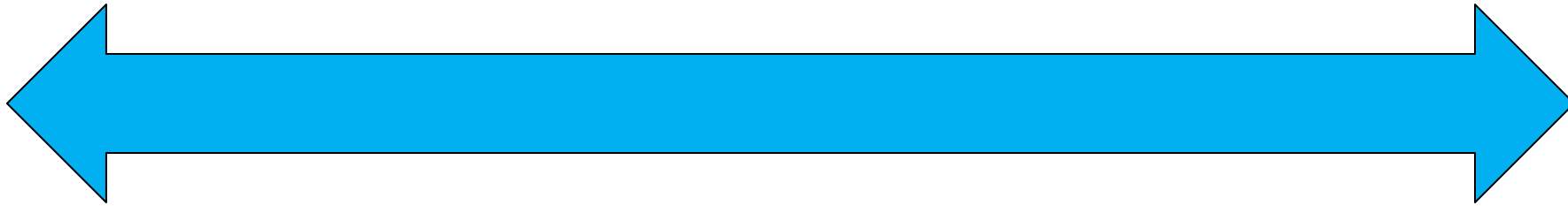


# Our approach to addressing climate change

Resist

Accept

Direct



# Current condition – boreal forest



# Our RAD decisions



Current conditions

Resist



Accept



Direct



# Accept – Transition to invasive shrubland

Current condition



Crausbay et al. 2022. BioScience

# Resist – Aggressively treat invasive species



Crausbay et al. 2022. BioScience

# Direct – Promote transition to oak-hickory forest

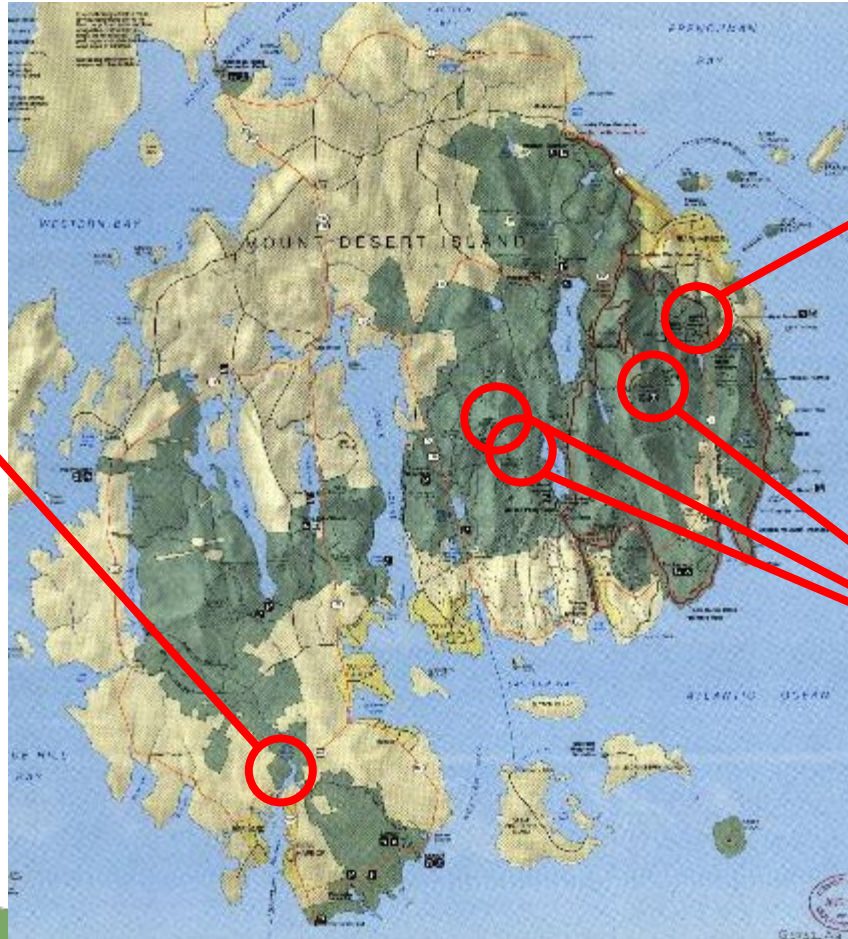


Crausbay et al. 2022. BioScience

# Three pilot restorations to test approaches



Bass Harbor Marsh



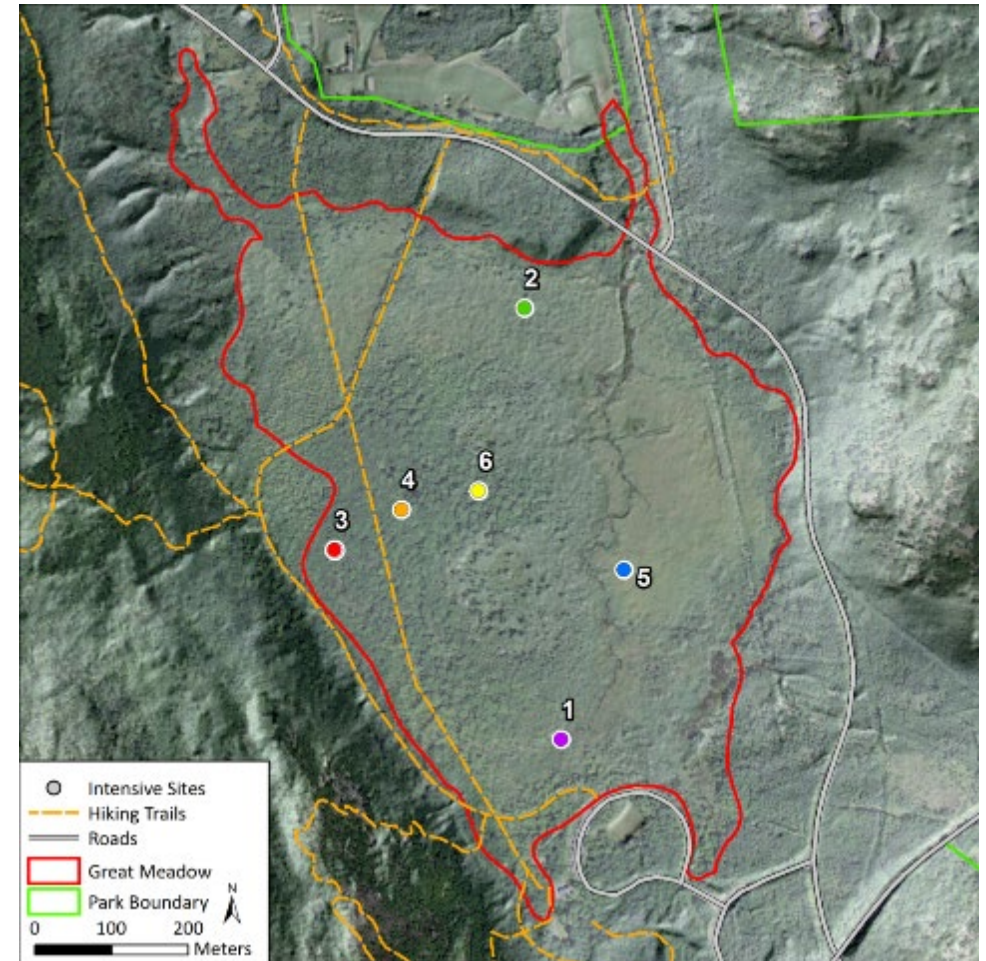
Great Meadow



Summits

# Wild Acadia Initiative – Great Meadow wetland

- Landuse manipulation
- Altered hydrology
- Sedimentation
- Increased nutrients
- Invasive species
- Climate Change





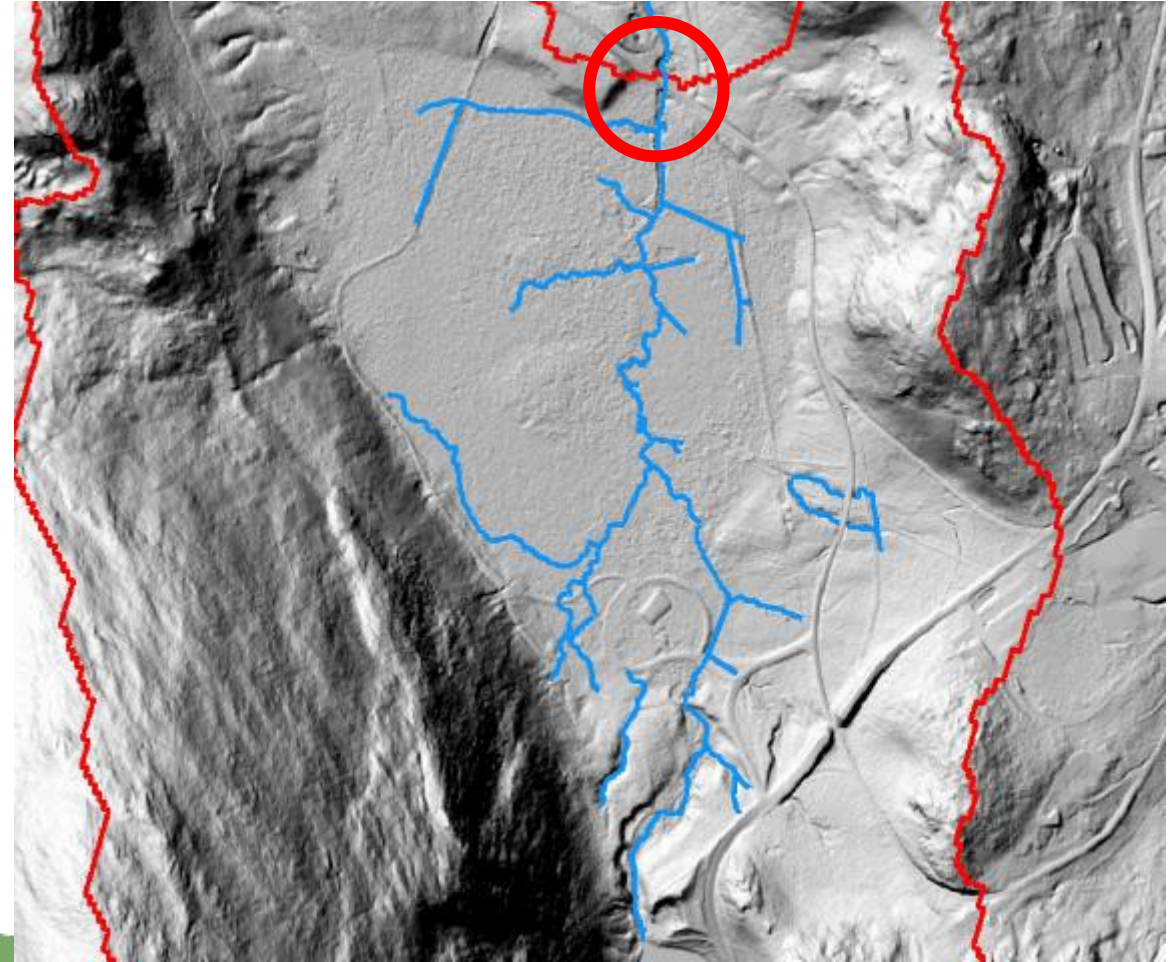
# Wild Acadia Initiative – managing for change

- Past mistakes
- Forward looking approach
- Anticipated future conditions
- Restoration of ecological health



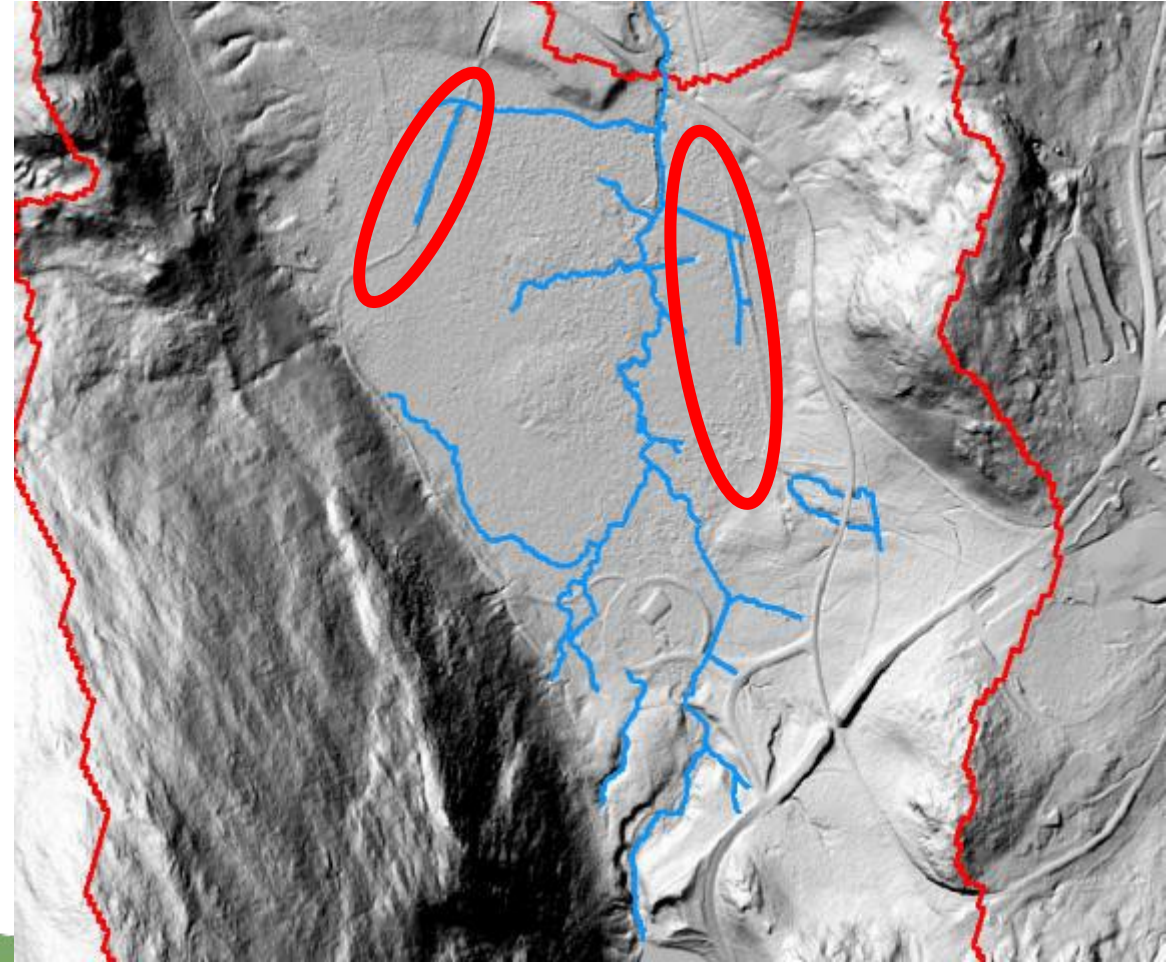
# Wild Acadia – Great Meadow manipulations

- Outlet culvert



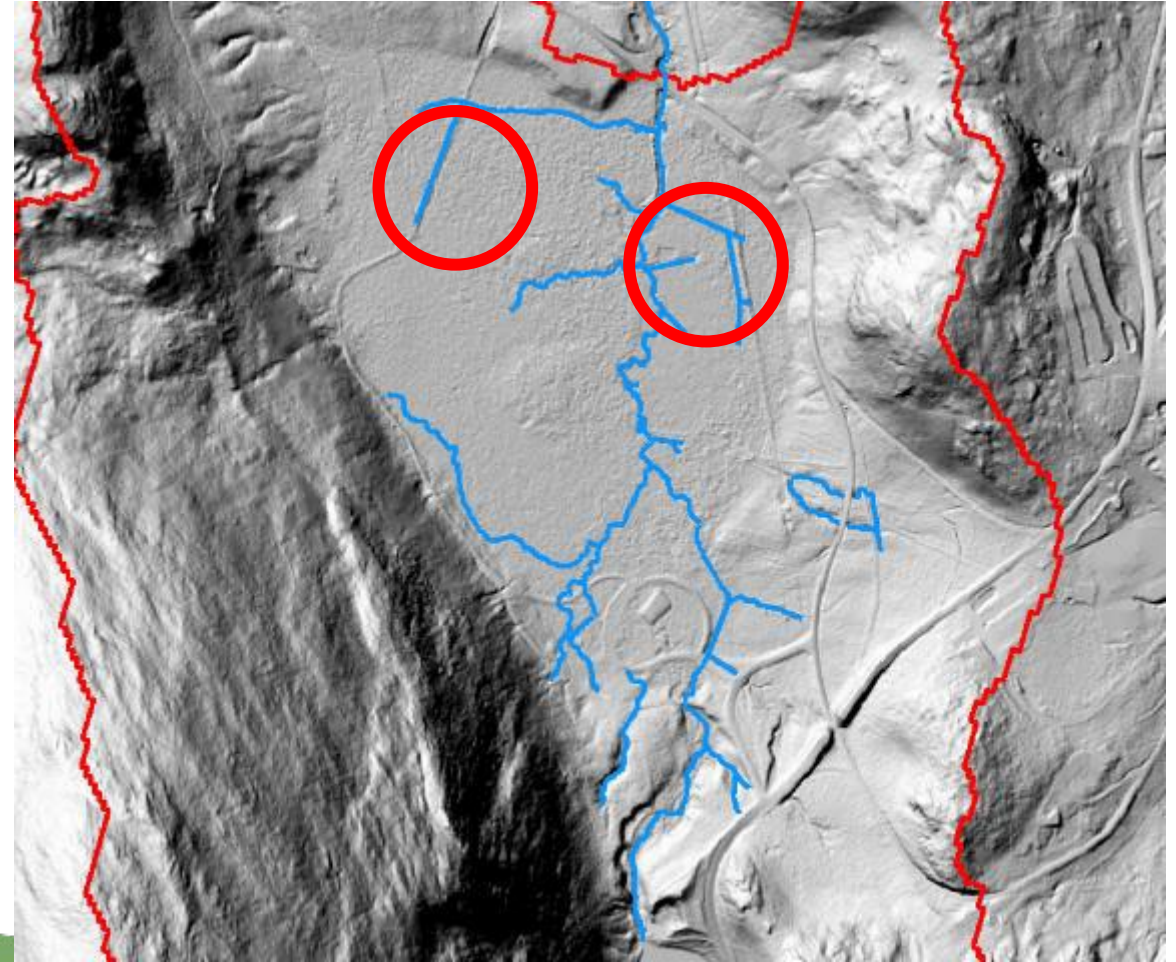
# Wild Acadia – Great Meadow manipulations

- Outlet culvert
- Abandoned roads and raised trails



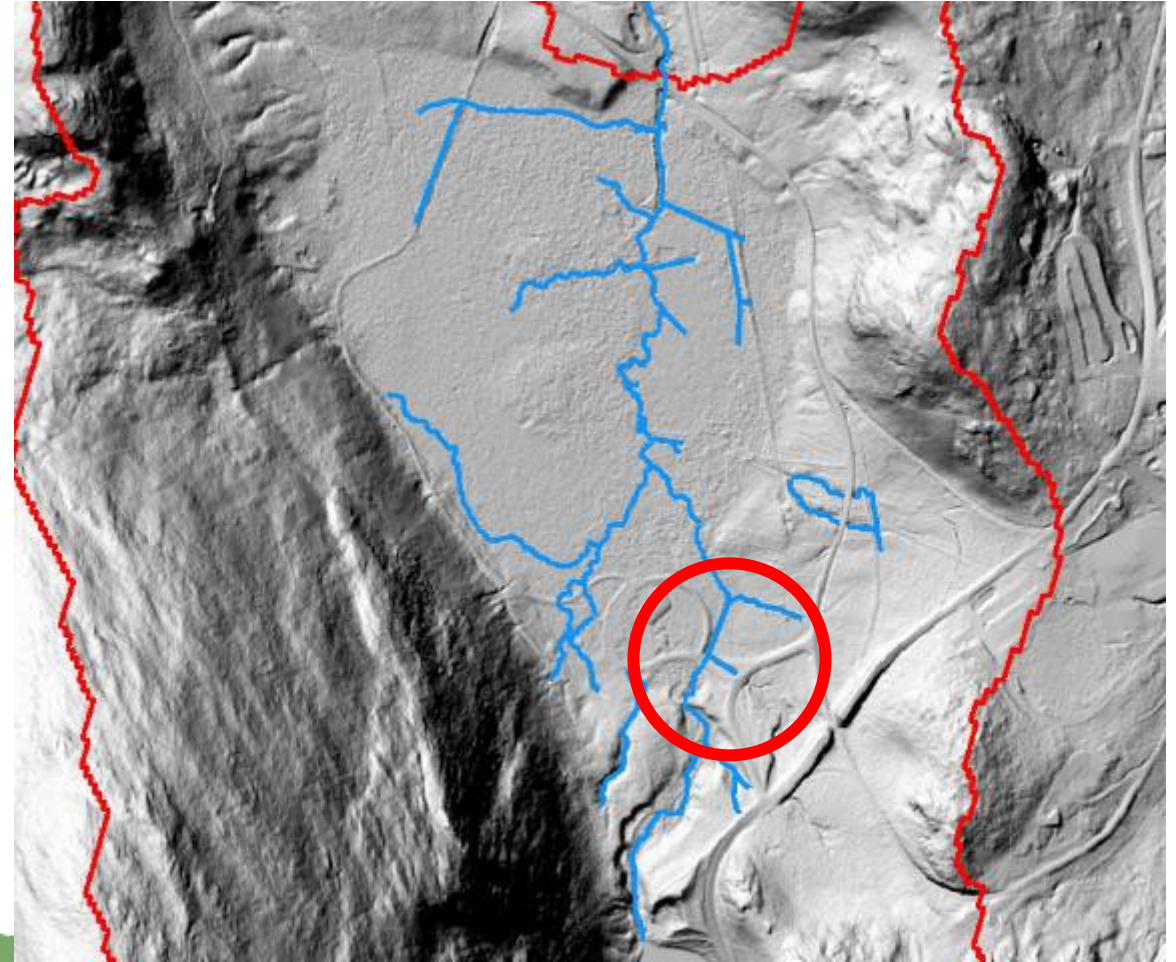
# Wild Acadia – Great Meadow manipulations

- Outlet culvert
- Abandoned roads and raised trails
- Ditches



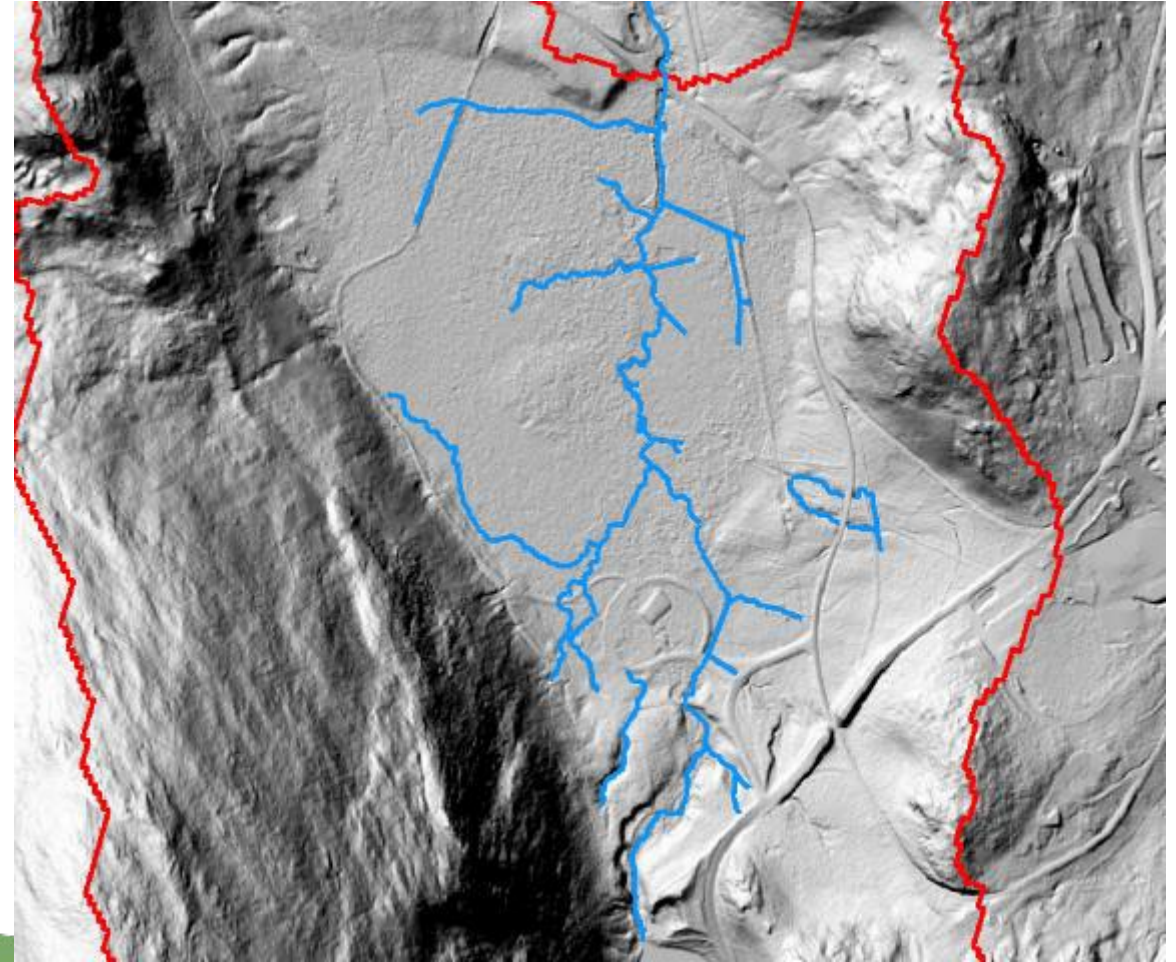
# Wild Acadia – Great Meadow manipulations

- Outlet culvert
- Abandoned roads and raised trails
- Ditches
- Channelization



# Wild Acadia – Great Meadow wetland effects

- Slowed water level response
- Decreased water level fluctuation
- Increased drainage
- Loss of species
- “Poor” quality wetland



# Wild Acadia – Great Meadow wetland restoration

- BAND Foundation grant
- Park leadership support
- Committed partners
- Interdisciplinary team (IDT)



# Wild Acadia – Great Meadow wetland improvements

Resist (invasive species)

- Aggressively manage invasive species





# Wild Acadia – Great Meadow wetland improvements

Accept (bigger rainfall events)

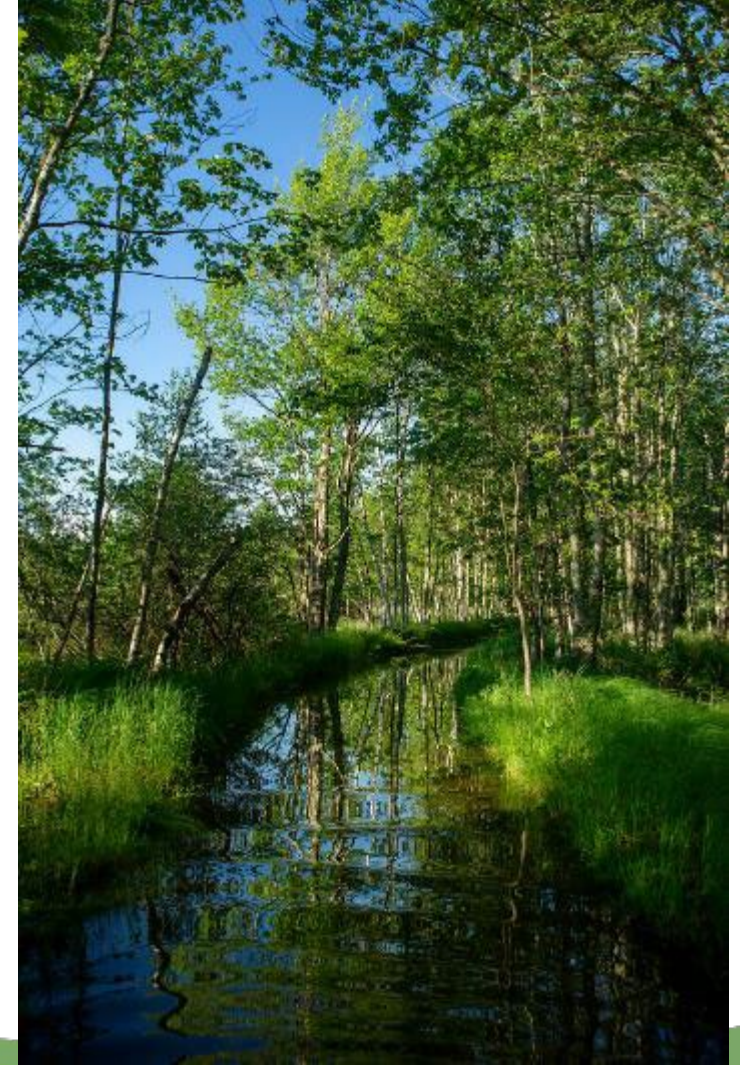
- Loop Road culvert



# Wild Acadia – Great Meadow wetland improvements

Direct (hydrology and new native species)

- Stream channel improvements and Legacy ditches
- Abandoned road bed
- Gravel trail
- Managed relocation of southern plant species



# Wild Acadia – Great Meadow wetland future conditions

- Mitigate flood flows
- Re-establish diverse flora
- Improve connectivity
- Suppress re-infestation
- Greater climate adaptation



Thank You!



[www.friendsofacadia.org](http://www.friendsofacadia.org) | 207-288-3340 | 43 Cottage Street | Bar Harbor, Maine 04609