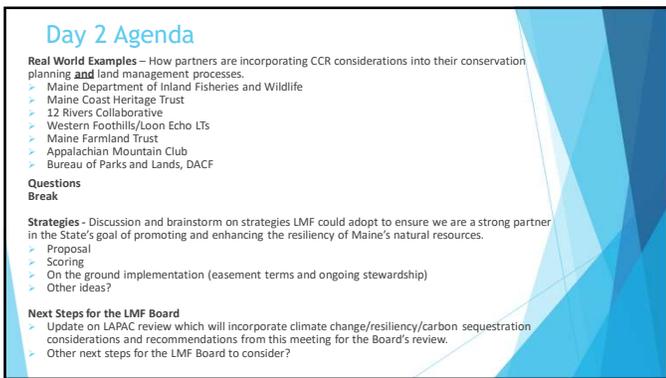


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2



3

Maine Department of Inland Fisheries and Wildlife Mission





Species



People

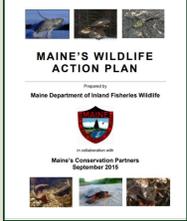


Habitats

4

Planning for Vulnerable Species and Habitats







5

Maine's 2015-2025 Wildlife Action Plan





1. Which species are at-risk?
2. Where are they found?
3. Why are they at-risk?
4. What can we do about it?



6

**Maine's Wildlife Action Plan:
378 At-Risk Species**






**One-third affected by
climate change**




Images by USFWS, Audubon, NH Fish and Game

7

Actions to Address Climate Change



<p>Survey and Monitoring (8)</p>  <p>Track resiliency and changes</p> <p>Focus on northern forests, marshes, and high elevation</p>	<p>Public Outreach (7)</p>  <p>Mitigation and adaptation</p> <p>Landowner engagement</p> <p>Roads and connectivity</p>	<p>Management (18)</p>  <p>Conservation and restoration of vulnerable habitats</p> <p>Marsh migration</p> <p>Riparian buffer zones</p>	<p>Research (25)</p>  <p>Identify connectivity hotspots</p> <p>Improve modeling of climate change impacts</p>
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8

Beginning with Habitat (BwH): Maine's Premier Biodiversity Planning Tool



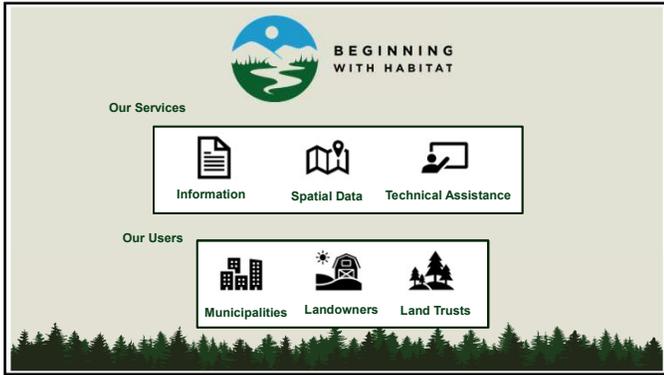

20 Years of Collaborative Conservation



Mission: To compile, integrate and deliver the best available information, tools and incentives to facilitate effective land use planning and natural habitat conservation at local, regional and state-wide scales.



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BwH Climate Change Tools: Vulnerable Species and Habitats




Salt Marsh Sparrow



Piper Plover



Harlequin Ducks



Salt Marsh Beetle

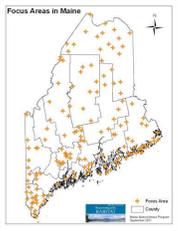


13

BwH Climate Change Tools: Statewide Focus Area




Tunk Lake Focus Area



Focus Areas in Maine

14

New BwH Tools

- Marsh migration
- Cold water fisheries
- New connectivity and resiliency datasets
- Additional web resources




Flooded marsh in Harpswell

15

Conservation and Management
MDIFW Wildlife Management Areas



- 106,000 acres, all counties
- Primary objective is wildlife habitat
- Secondary objective is public recreational use
- Examples of climate change management practices




R. Robichaux, MDIFW

16

Conservation and Management
MDIFW Wildlife Management Areas



- Conservation through the lens of climate change
- MDIFW uses SWAP and BwH information in its decision process for land acquisition
 - Focus Areas
 - Vulnerable species and habitats
 - Connectivity



Sherman Parcel
Wildlife Habitat Attributes
Brunswick, Maine

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Conservation and Management
Living Shorelines



Wharton Point, Brunswick

- Increase resilience, reduce risk
- Use of nature based coastal infrastructure projects
- 3 sites located by MGS
- NOAA funded, multiple partners



18

Conservation and Management
RSET – Rod Surface Elevation Tables



Saltmarsh monitoring of erosion/accretion to determine the extent to which salt marshes keep pace with sea level rise



2016 MCP, MDIFW and others partnered to install 11 monitoring sites (6 of which are on WMAs).



Future efforts on vegetation assessment

19

Conservation and Management
Saltmarsh restoration



- Project Partners: KELT, MDOT, MDIFW, BWD, Town of Woolwich, Bates College, USFWS, NOAA,
- Restore a natural hydrological regime to enhance fish passage, function saltmarsh and improve critical infrastructure's resistance to flooding from storm surge and projected sea level rise scenarios.
- Modeling and design




20

Conservation and Management
Invasive plants



- Threat to long-term habitat suitability and ecosystem function
- Assessment of invasive plant species – MNAP/staff/volunteers
- Management approach/control efforts
- RISCC – risccnetwork.org
 - Model invasive threats with projected climate change models

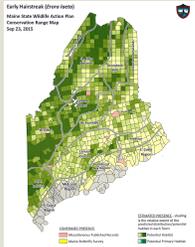


21

Conservation and Management Adapting for SGCN Species



- Frye Mountain WMA
 - Considerations for Beech Management
 - Identified in prescription review
 - Species of Greatest Conservation Need
 - 2015 SWAP
 - Early Hairstreak
 - Priority 2 species
 - Threats
 - Lack of knowledge
 - Logging and wood harvesting
 - BBD, habitat loss

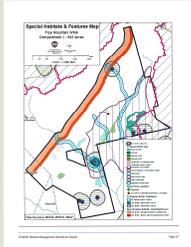


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Conservation and Management Biological Diversity



- Enhance biological diversity for suite of ecological services
 - Forest structure/composition
 - Riparian zone
 - Ecological Reserves




23



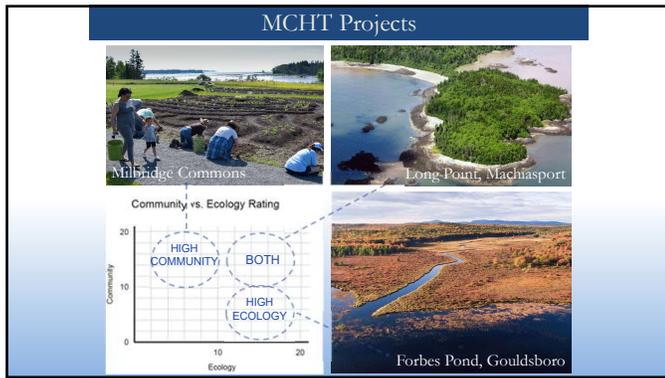
Marshes for Tomorrow

Jeremy Gabrielson
Conservation and Community Planner
jgabrielson@mcht.org

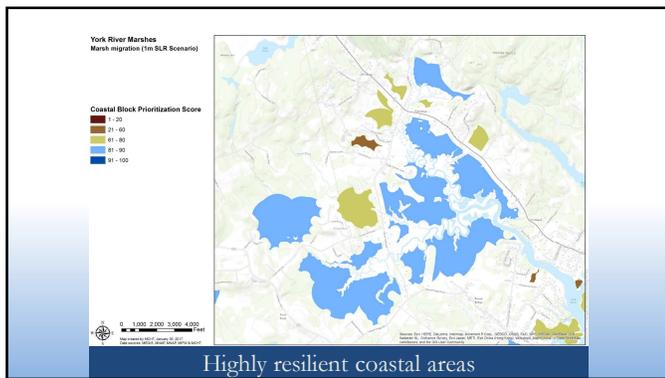
November 18, 2020



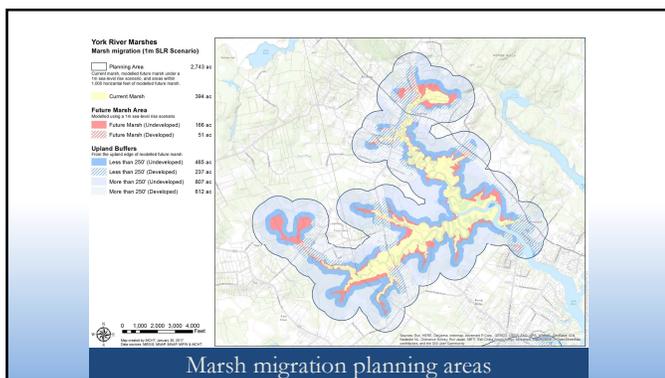
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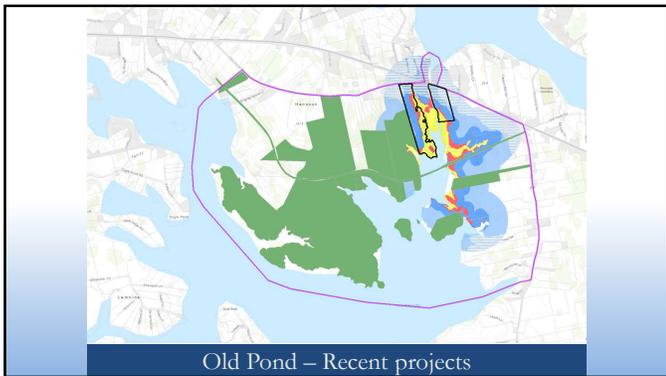
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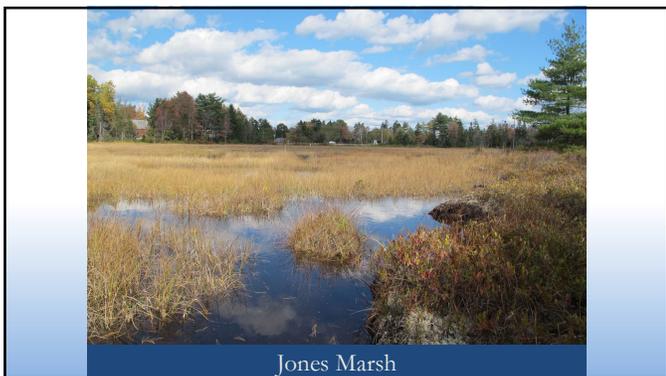
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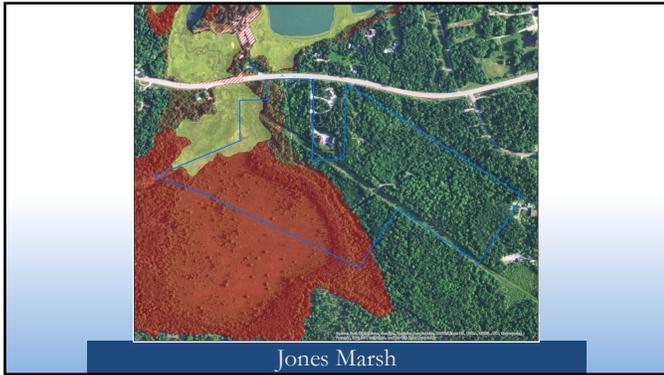
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Lessons

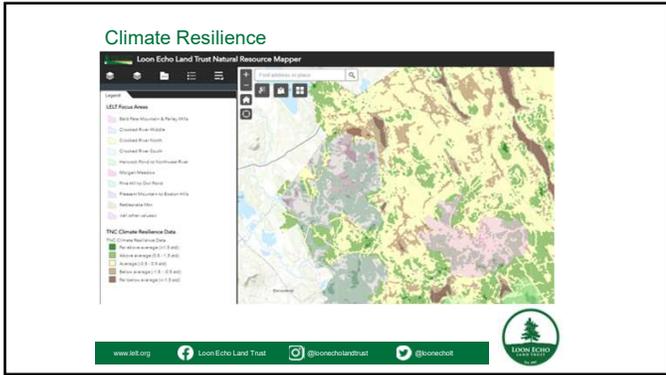
- Multiple overlapping conservation values
- SLR is just one piece of the puzzle
- Partner, partners, partners
- Need for resilience-oriented funding

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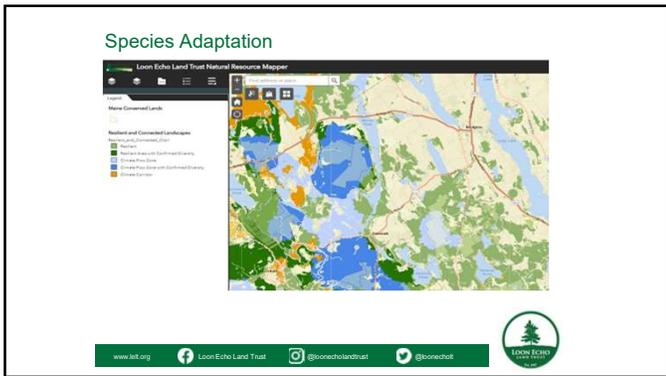
Land Protection for Climate and Carbon
Western Foothills and Loon Echo Land Trusts

www.ltl.org Loon Echo Land Trust @loonecho @loonecho

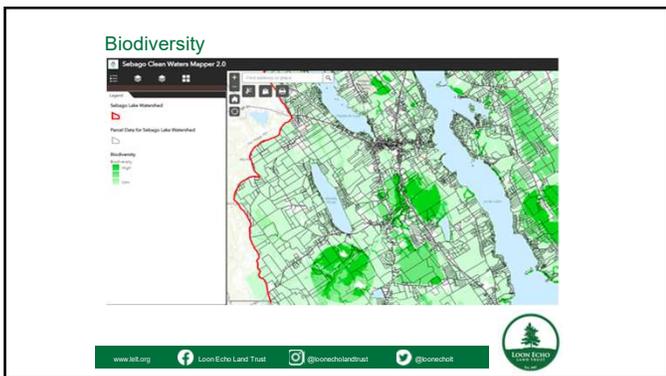
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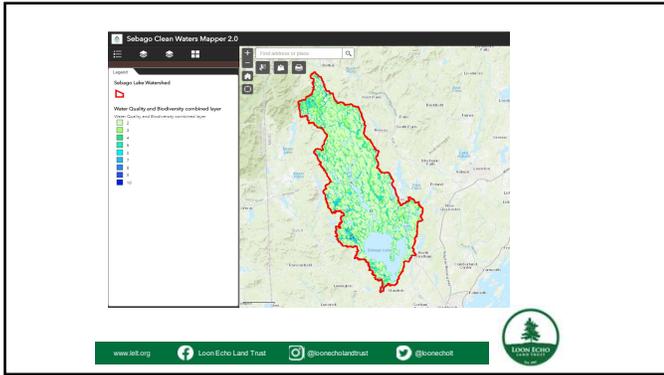
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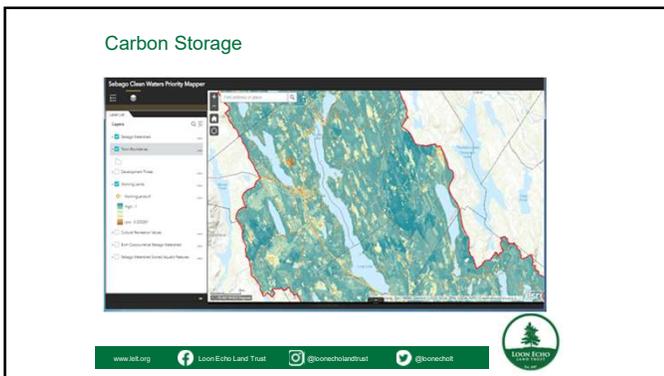
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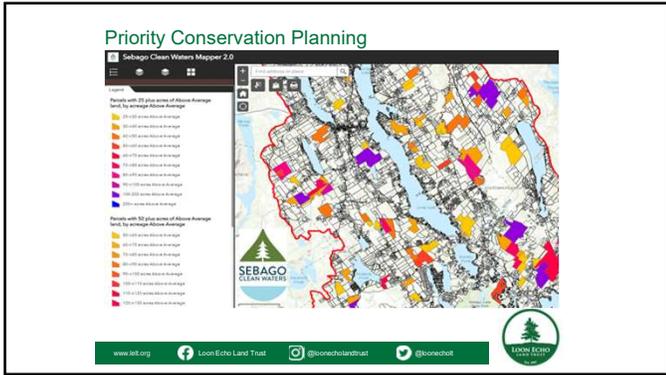
Carbon Storage

In practice:

- Carbon offset sales
- Small landowner aggregation
- New revenue streams for contracting foresters
- Silvicultural techniques and species composition for maximizing carbon and traditional timber incomes



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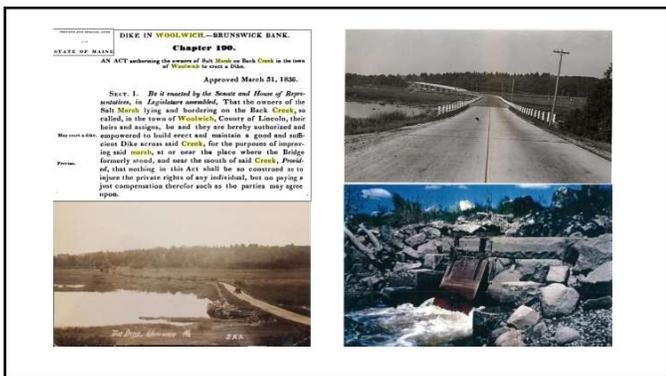
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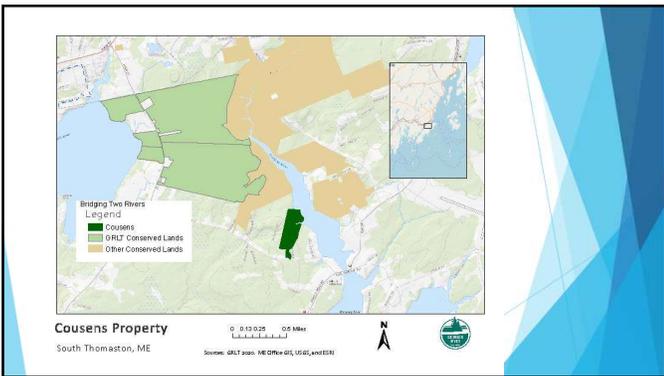
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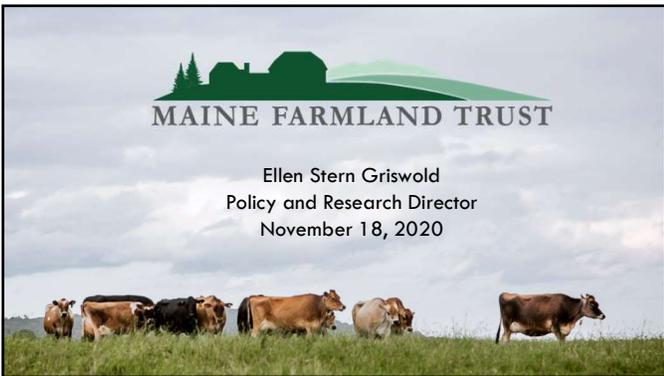
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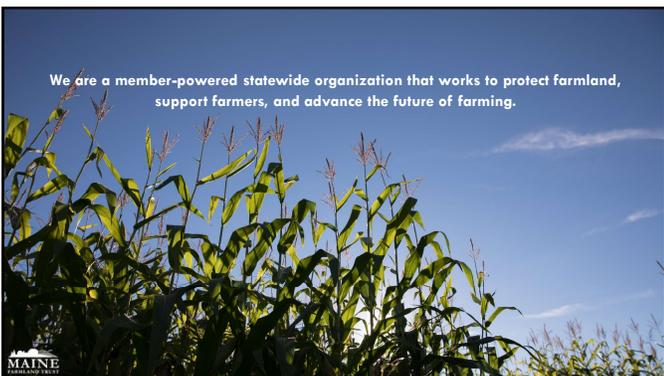
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**MFT New Strategic Plan
Stewardship and Climate Impact Area**

Objectives:

- Increase extent climate smart and other conservation practices are integrated into MFT work
- Significant increase in the amount of support for farmers adopting/employing climate smart practices

Strategies:

- Advancing related federal/state/municipal policy work
- Partnering on farmer outreach/education activities
- Integrating support for climate smart practices into MFT farmland protection and farm viability programs



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Farmland Protection as a Climate Strategy

- Critical for achieving Maine's climate change mitigation and adaptation goals:
 - Avoiding future emissions associated with development
 - Preserving climate mitigation and adaptation benefits from climate smart farming practices
 - Ensuring the land base to grow the local agricultural economy and create greater food security



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Current Climate-Related Land Conservation Work

- Natural Climate Solutions Initiative
- RCPP project to conserve farmland and marsh habitat
- Process of reviewing easement terms
- Distributing to farmers information about climate smart practices and support



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Potential Climate-Related Land Conservation Work

- Incorporate climate strategies and resiliency indicators into land protection evaluation process
- Concerns about including practice requirements in easement terms
- Separate but connected contract for climate smart agricultural practices



55

Current and Future Climate-Related Farm Viability Work

- Farmer Outreach and Education Events
 - Example: Healthy Soils, Healthy Farms event in Aroostook County
- Support for climate smart practices through business planning and technical assistance
- On-Farm Research and Demonstration Projects



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Questions?

mainefarmlandtrust.org

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AMC's Maine Woods Initiative
 Landscape-scale conservation in Maine's Northwoods
 Steve Tatko, Director of Maine Conservation and Land Management
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AMC's Big Idea



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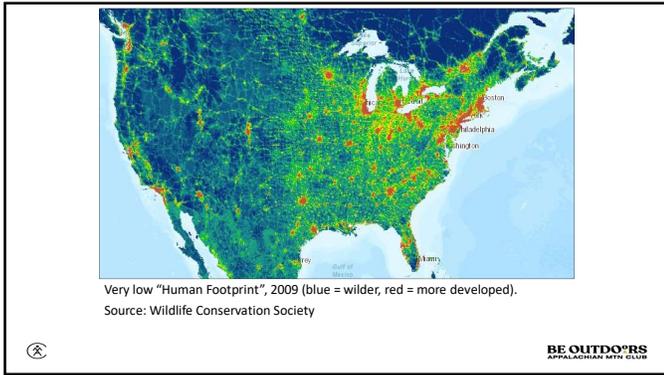
Maine Woods Initiative

Objectives/Attributes:

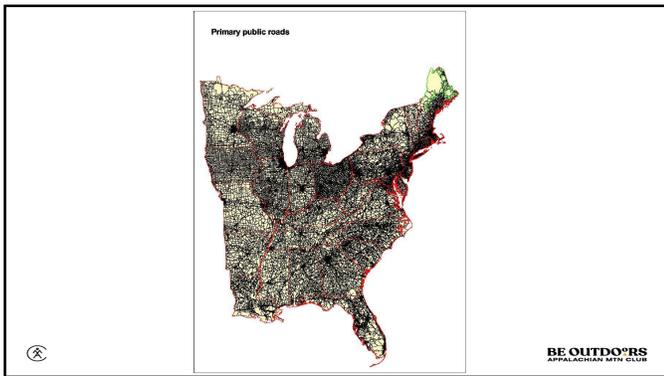
1. Ensure Public Access
2. Responsible Forest Management
3. Economic development, community partnerships and local environmental education
4. Landscape Scale Habitat Restoration
5. Develop a new integrated model for conservation finance

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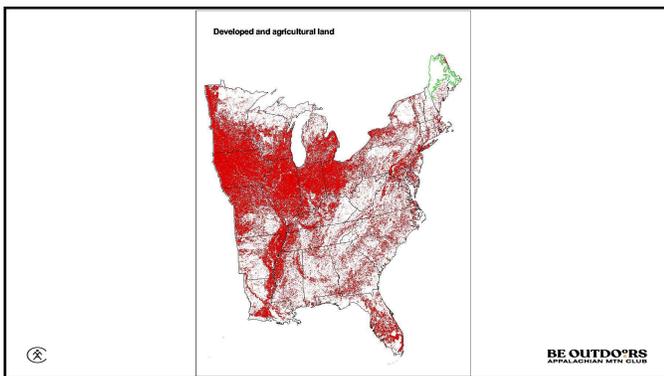
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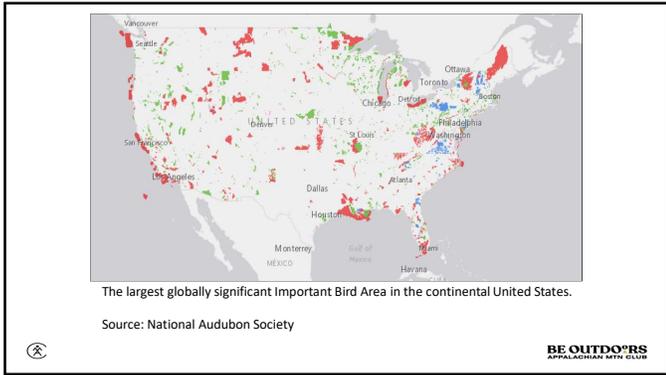
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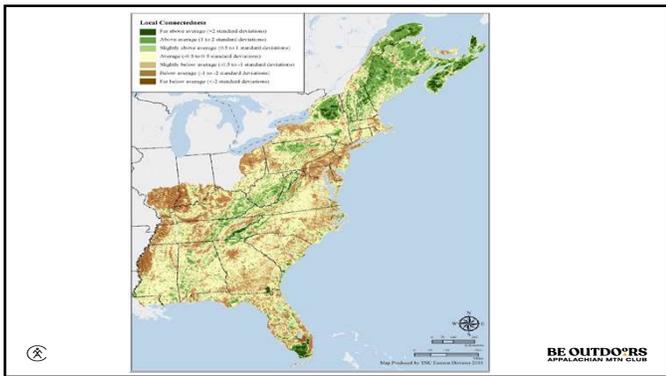
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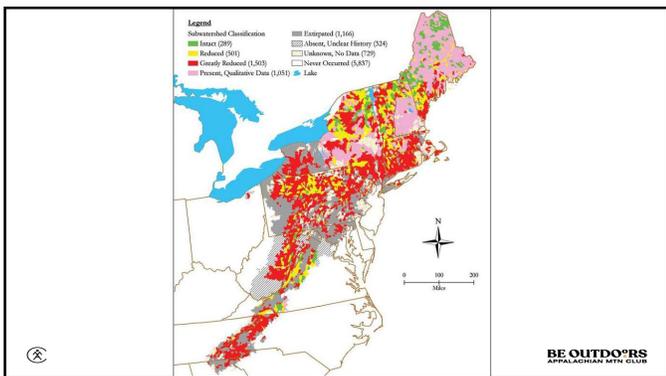
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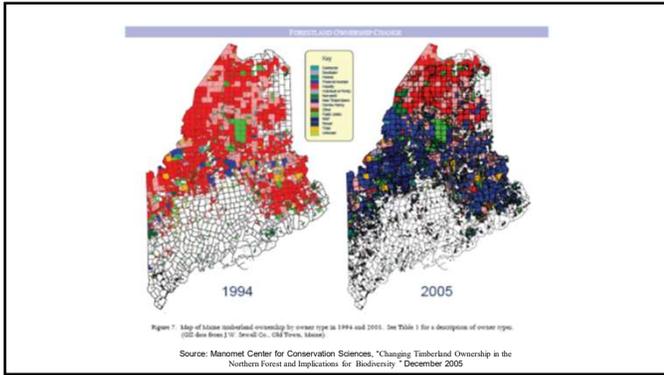
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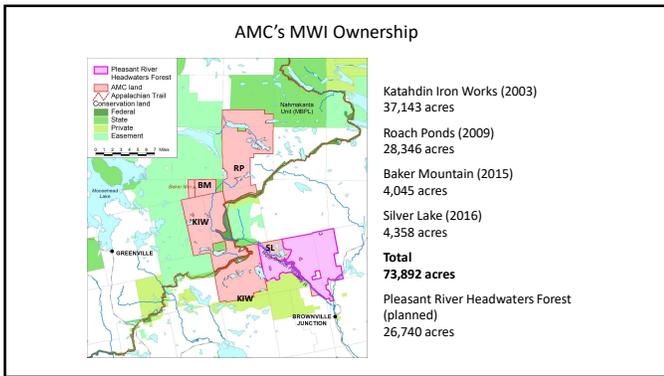
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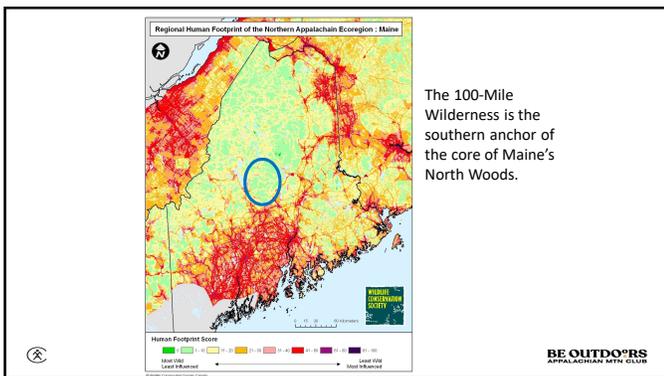
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AMC Late Successional Uneven Aged Management



- Late-successional structures - Restorative forestry
- 6,000-7,000 cords annually cut by local crews sent to local mills. Increase to 12,000 cords with new land acquisition
- FSC certified sustainable

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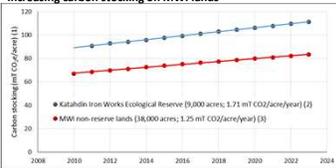
AMC Late Successional, Uneven Aged Management



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Increasing carbon stocking on MWI lands



Carbon stocking on both KIWER and MWI non-reserve lands has increased about 17% over the last decade.



(1) Includes live trees >1" diameter (above- and belowground) and standing dead trees.
 (2) Growth model developed for KIWER carbon offset project based on 2011 inventory
 (3) Growth and harvest model developed by K. Bothwell, based on 2010 inventory and MWI harvest data.

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MWI Carbon sales in Ecological Reserves

- AMC has developed two forest carbon offset projects on Maine Woods Initiative (MWI) ecological reserves.
- Initial credits based on carbon stocking above a "business as usual" baseline.
- Continue to earn credits as project area sequesters additional carbon.
- 100-year commitment to retain credited carbon; on-going obligations for inventory and verification.
- To date we have sold almost 250,000 credits for net revenue of over \$1.2 million (plus \$900,000 towards purchase of Silver Lake property).




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MWI Carbon Sale on Managed Lands



First Kenneth Kimball Research Fellow

- Karin Bothwell – December 2017 to September 2019.
- Broad goal – to investigate how carbon being sequestered in AMC's forest can best be utilized in service to AMC's mission.
- Evaluated potential for additional carbon offset projects on AMC land.
- MWI non-reserve lands (grey) determined to be potentially viable.
- >38,000 acres (timber management plus protection zones).

New carbon project

- Proposals requested from two commercial project development companies.
- Working with FinleCarbon on a short-term voluntary market sale with a 40 year lifespan.
- Carbon inventory complete fall of 2020 with revenue expected in 2021.

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Thank You!

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Maine Bureau of Parks and Lands

- 48 State Parks and Historic Sites
- 620,000+ acres of Public Lands

Managed for:

- Recreation
- Wildlife & Biodiversity
- Cultural and Historic Resources
- Forest Management

www.ParksAndLands.com




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2020 – A Memorable Year of Public Use!!



Packing kayaks up Tumbledown Mountain

Public Lands

- Some sites (Tumbledown Mountain, Cutler Coast) exceeding 'carrying capacity'

State Parks

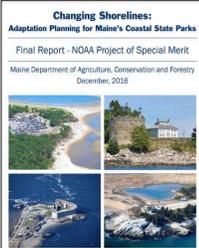
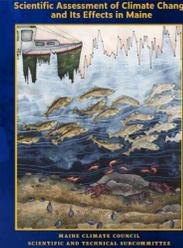
- Camping: 280,000+ -- All-time record!!!
- Cobscook, Lily Bay, Aroostook all saw huge increases



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Climate Change Considerations

1. Sea Level Rise & State Parks
2. Acquisition Planning
3. Carbon Storage and Sequestration
 - Ecological Reserves
 - Managed Forest

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Acquisition Planning: Climate Resilience & Landscape Connectivity

ME Natural Areas Program Review



Key Statistics:

- Total land area: 1,000,000 acres
- Statewide and Conservation Network: 1,000,000 acres
- Statewide Land Conservation: 414,400 acres
- Conservation Network: 100,000 acres
- Conservation Network (Conservation): 500,000 acres
- Conservation Network: 40,000 acres

Thematic Results:

- Acquisition:** 100% (100%)
- Landscape Connectivity:** 100% (100%)
- Land Conservation:** 100% (100%)

Geographic Setting Results:

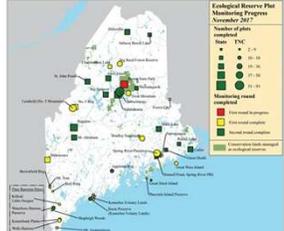
The most desirable in the subject is 35 (35%) and in three most common geographic settings:

- Very Low (0-1000 ft): 100%
- Very Low (1000-2000 ft): 100%
- Very Low (2000-3000 ft): 100%

85

Carbon Sequestration and Storage

Ecological Reserves: U Maine Study



Ecological Reserve Plot Monitoring Progress November 2017

Number of plots: 1-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, 91-100

Monitoring status: Completed, In Progress, Not Started

Managed Forest: Growth/Harvest; Utilization



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Climate, Carbon and Resilience

Presented by the Land for Maine's Future Board



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Strategies - What are we already doing?

LMF Conservation Priorities

- ▶ Recreation lands
- ▶ Water Access Lands
- ▶ Lands Supporting Vital Ecological Functions and Values
- ▶ Rare, Threatened, or Endangered Plants, Natural Communities
- ▶ Wildlife and habitat
- ▶ Areas of Scenic Interest and Prime Physical Features
- ▶ Farmland and Open Space
- ▶ Ecological Preserve
- ▶ River or Trail System
- ▶ Island or Undeveloped Coastline
- ▶ Significant Mountain Areas
- ▶ Public Water Supply

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Strategies - What are we already doing?

Scoring Prioritizes Projects that...

- ▶ Are part of a regional conservation plan or effort
- ▶ Connect or are adjacent to existing conservation lands
- ▶ Are part of a locally adopted comp plan
- ▶ Implement protection of open space, recreation, wildlife habitat and/or rural areas that are consistent with the State's Growth Management Act
- ▶ Are in a primarily natural state and do not require restoration

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Strategies - What are we already doing?

LMF Project review includes

- ▶ MNAP map & checklist for each parcel
 - R,T,E plant species
 - R,T,E animal species
 - Rare and/or Exemplary Natural Communities
 - MDIFW Significant or Essential Habitats
 - Connectivity to conserved lands
 - Intersects large undeveloped block
 - Intersects a BwH focus area
 - USFWS priority trust species - top 25%

90

Strategies - What else could we be doing?

Discussion

- ▶ Small team of MNAP & MDIFW staff work with LMF to develop scoring protocols that could be incorporated by LMF Board
- ▶ TNC resilience, connectivity and biodiversity tool being used by BPL - useful at a larger scale with landscape context rather than at smaller parcel level. BwH may be more appropriate at parcel scale
- ▶ Standard review tool extremely helpful to MNRCP review process
- ▶ Participants should be in touch with MNAP if there are other tools/data that are helpful
- ▶ Re. coastal resilience projects - federal funds are sometimes prohibited from providing matching funds - LMF could be a big help
- ▶ Regular funding cycle
- ▶ Retain management flexibility with working lands easement terms
- ▶ Stewardship and management considerations will have to be acknowledged

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Strategies - What else could we be doing?

Discussion

- ▶ w/r/t farmland (and potentially other working lands) easements, scoring climate considerations may need to be different than fee acquisitions
- ▶ Standardizing data to the parcel level to understand relative importance/contribution. Look at aggregate acres when considering multiple parcel opportunities
- ▶ A tool available to all LT and recommended by LMF would help level the playing field for all size/capacity LT
- ▶ OSI tool useful for forestland projects, and carbon data newly available
- ▶ BwH data shows current presence of RTE species, needs to include potential for RTE species in light of climate change
- ▶ How does LMF Board integrate this information into scoring, and then use that in a way that doesn't disadvantage smaller projects or projects that are intended to accomplish other LMF conservation objectives.

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Strategies - What else could we be doing?

Discussion

- ▶ Data availability/quality in organized towns vs. unorganized towns may need to be a consideration (in addition to parcel size)
- ▶ Long term stewardship is critical as we face changing climate
- ▶ Scoring weight - balancing all of the public benefits in a meaningful way that reflects Board priorities as well as statutory and bond requirements

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Next Steps

Update Conservation Priorities

- ▶ What have we accomplished?
- ▶ Where are the gaps?
- ▶ Incorporate climate change, carbon and resiliency considerations in conservation priorities

▶ Other suggestions for the LMF Board?

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Land for Maine's Future
LMF



Thank You!

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