MASSWILDLIFE

MassWildlife Habitat Management Review: 2015-2020

John Scanlon, Habitat Program Supervisor

Agenda

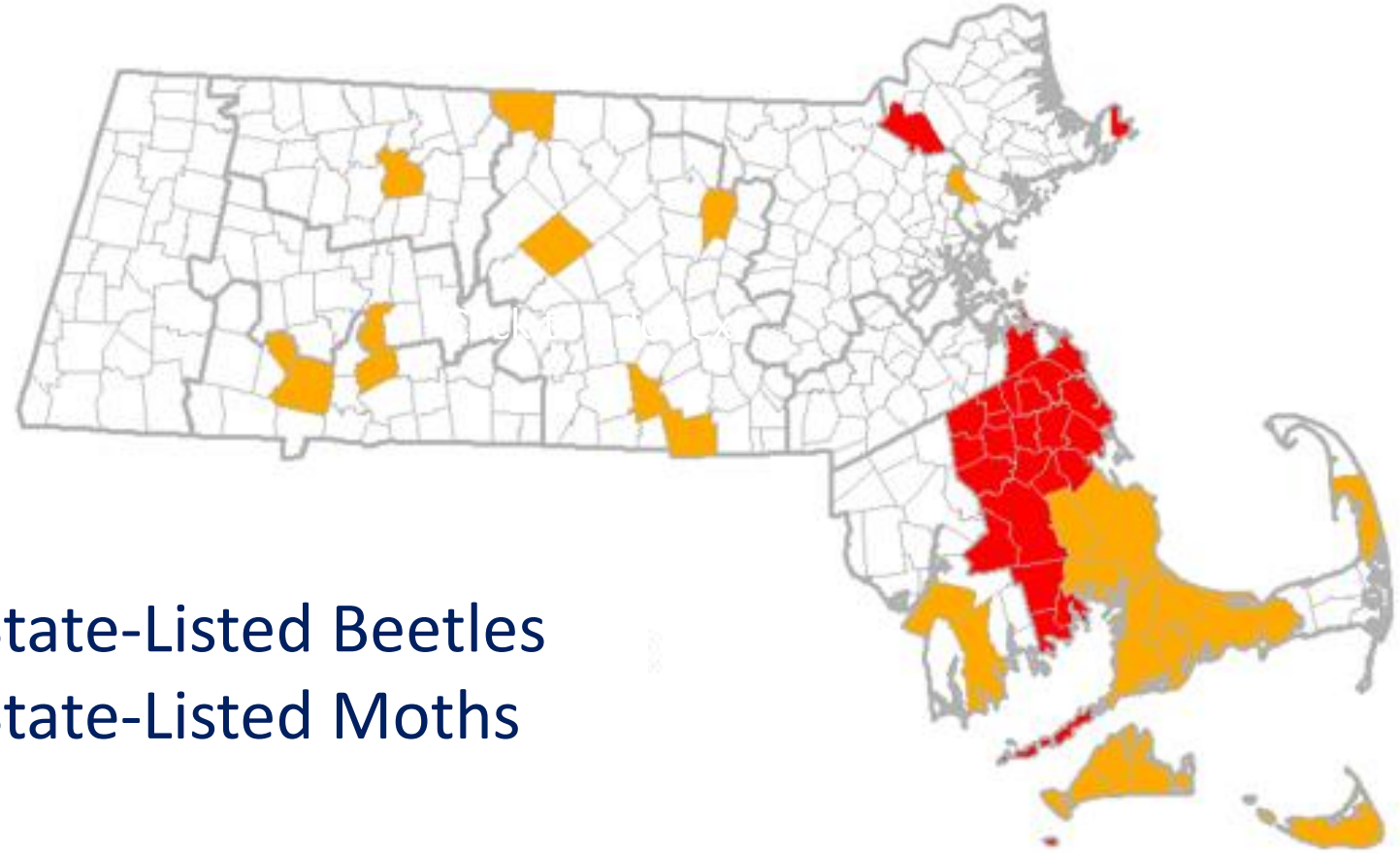
- Review MassWildlife Landscape Habitat Goals
- Review Habitat Restoration & Management Activities from FY2015-2020
  - Habitat Type
  - Habitat Treatment
- Review MassWildlife Carbon Budget
- Review Cooperative Habitat Management Efforts

Why do we Manage?

- Human infrastructure has greatly restricted natural disturbance processes that historically provided diverse open habitats for wildlife on portions of the landscape that are now developed.
- In particular, flooding and fire are greatly constrained today on those portions of the landscape where they formerly occurred.
- While control of flooding and fire is essential to protect human life and property, it also creates an obligation on our part to provide the dynamic habitats for wildlife that these natural processes formerly did.

Major Rivers of Massachusetts

Potential Xeric Shrubland Focus Areas for State-Listed Species



State-Listed Beetles

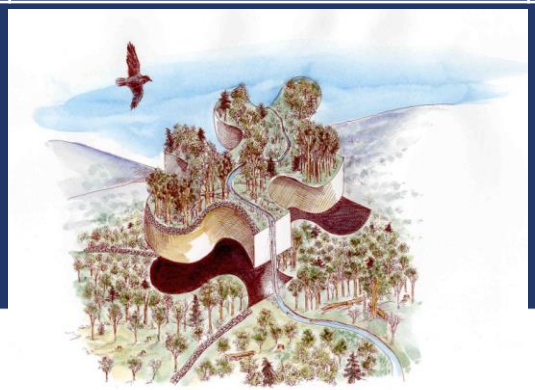
State-Listed Moths

Landscape Habitat Goals

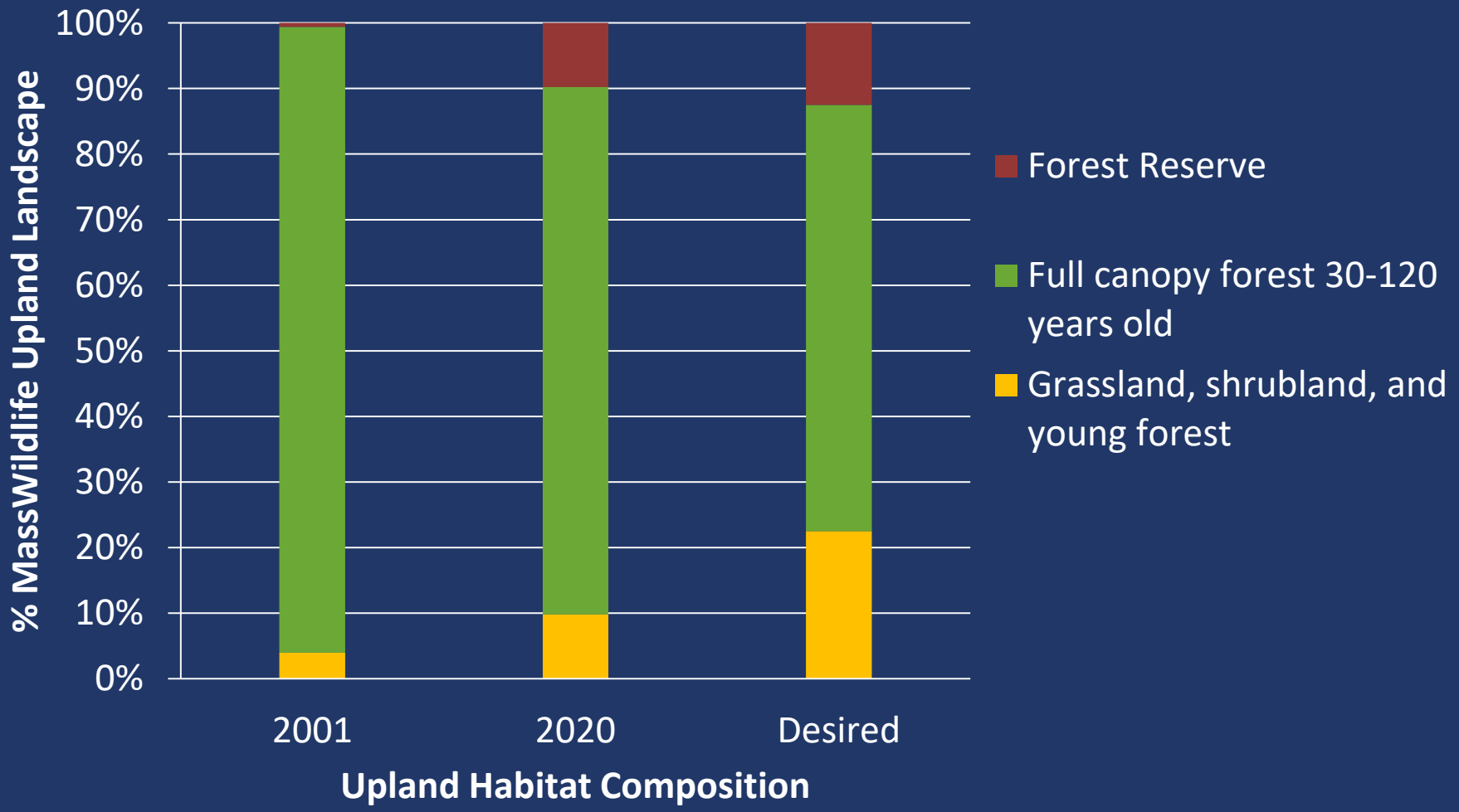
- Extensive literature review in 1990's and ongoing
- 1996: Fisheries & Wildlife Board approved statewide goals including 20-25% grassland, shrubland, and young forest ("early-successional") habitat
- 2006: Board approved statewide goal of 10-15% Forest Reserves
- 2010: Board approved details for 20-25% open habitats: 1-2% Grassland, 7-9% Shrubland, and 10-15% Young Forest

MassWildlife Landscape Habitat Goals for Upland Areas

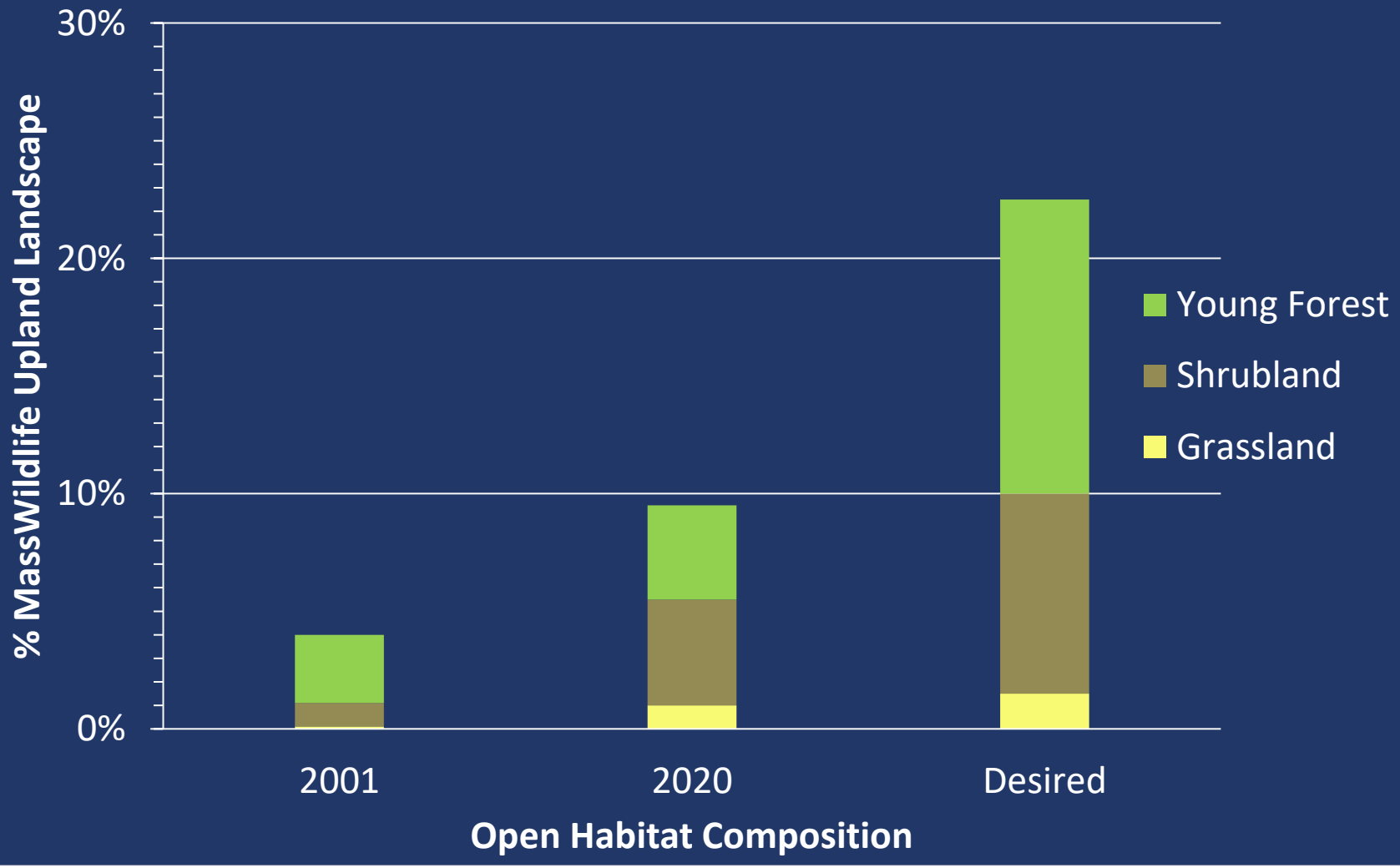
Habitat Type	Current	Desired
Grassland	1%	1-2%
Shrubland	4%	7-9%
Young Forest	4%	10-15%
Full Canopy Forest	81%	60-70%
Forest Reserve	10%	10-15%

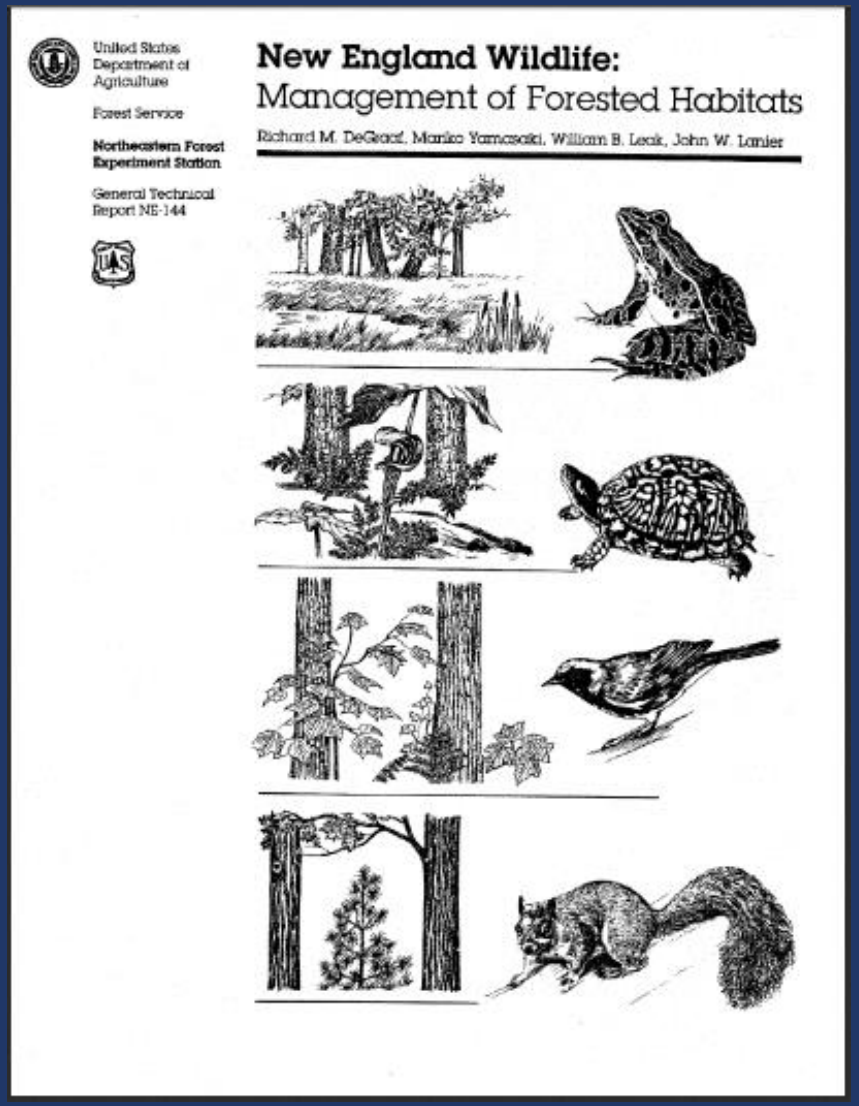


MassWildlife Upland Habitat Goals

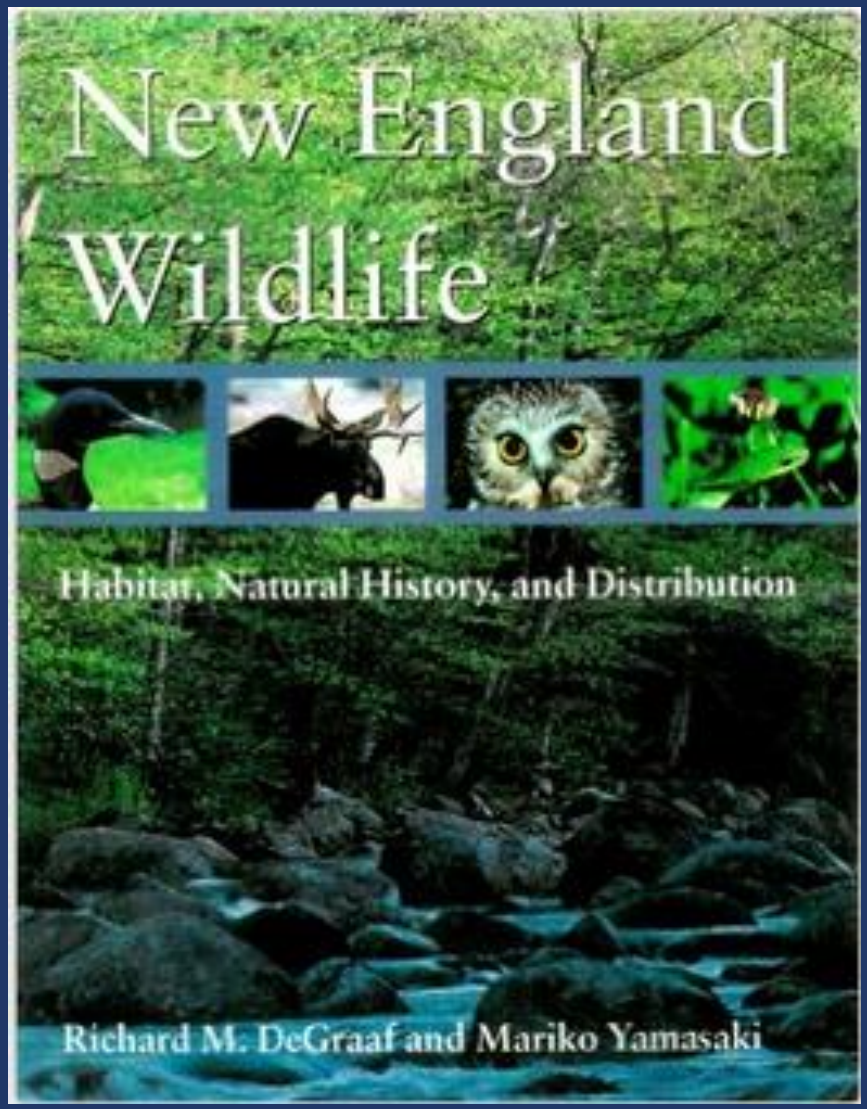


MassWildlife Open Habitat Goals




United States Department of Agriculture
Forest Service
Northeastern Forest Experiment Station
General Technical Report NE-144
New England Wildlife:
Management of Forested Habitats
Richard M. DeGraaf, Mariko Yamasaki, William B. Leak, John W. Lanier

1992


New England Wildlife
Habitat, Natural History, and Distribution
Richard M. DeGraaf and Mariko Yamasaki

2000

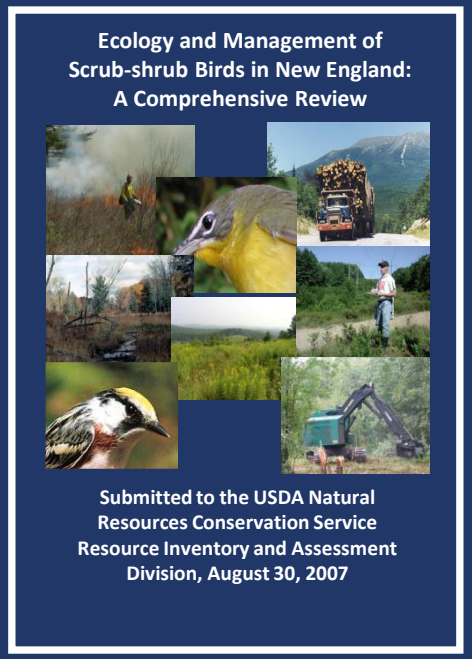
Both Shrubland and Young Forest Habitat Needed

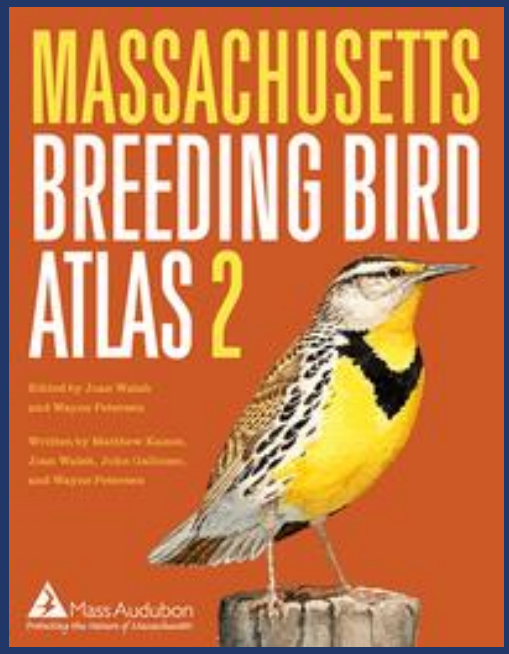
- Wildlife species associated with these areas are often habitat specialists.
- Natural disturbance (flooding & fire) formerly provided diverse open habitats, but have been limited by humans and must be replaced through management.
- Minimum patch size is 1 ha (2.5 ac) to provide adequate habitat for early-successional species.
- Benefits accrue with larger patch sizes up to about 10 ha

e.g., Options for managing early-successional forest and shrubland bird habitats in the northeastern United States. DeGraaf, R.M. and Yamasaki, M., Forest Ecology and Management, 185(1), p.179-191. Nov 2003.

Continued support for landscape goals

- Research continues to support MassWildlife's established landscape composition goals.
- Public support for these goals was significant during the 2010 public review process.
- Still, our work is under attack by those who want all state lands to be reserves.





Landscape Habitat Goals

- Goals set by Board in 1996 and affirmed in 2006 and 2010 remain relevant and appropriate.
- MassWildlife staff have made good progress on creating Grassland and Scrub Oak Shrubland habitat (Key Sites).
- Staff currently focusing on creation of Young Forest Habitat.
- Staff will be proposing limited additions to Forest Reserves later this year.

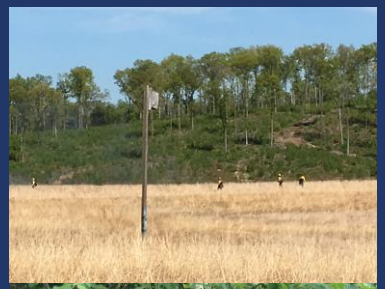
Habitat Restoration & Management Process

- Assess Natural Community Type
- Determine Desired Future Condition (DFC)
- Determine Priority for Restoration & Management
- Conduct Initial Biological Monitoring
- Prepare Habitat Site Plan
  - Identify Grassland, Shrubland, and Forest Units
  - Fine Tune DFC for Each Unit
  - Prepare Rx Fire Management Plan as Needed
- Submit Environmental Permitting
- Prepare Mgt. Contracts for Public Competitive Bid

Adaptive Management

Graphic from the global *Open Standards for the Practice of Conservation*

Habitat Types



Grassland

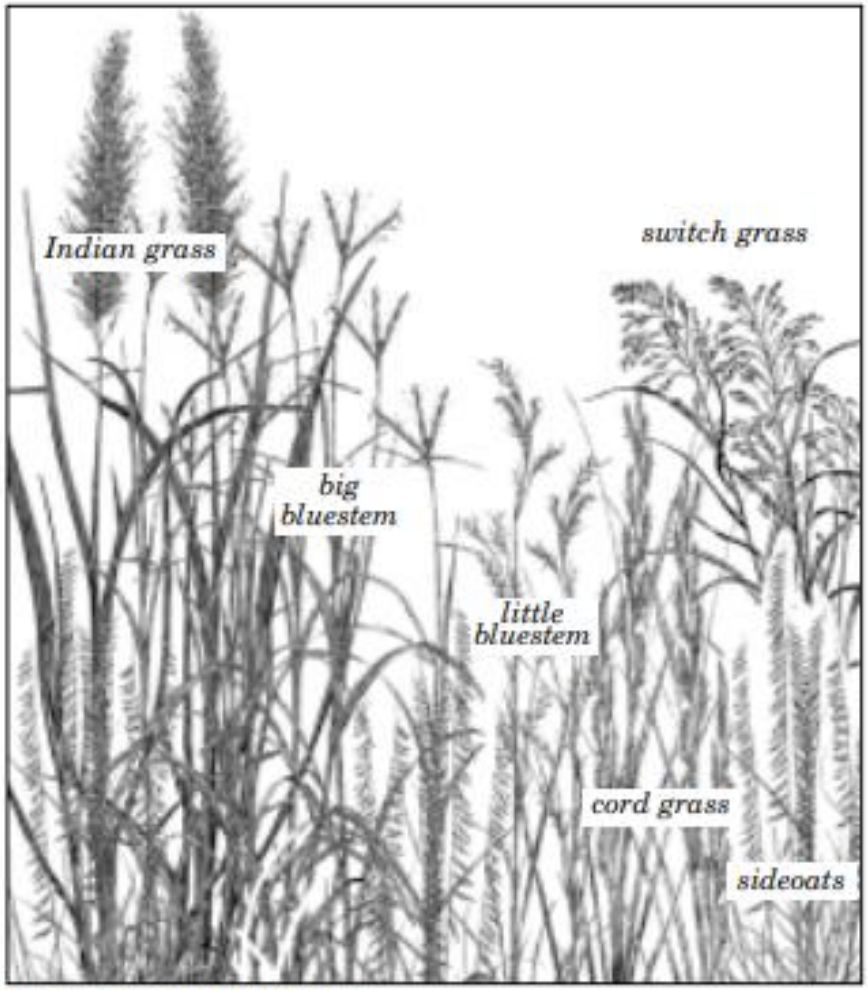
Shrubland

Forest

Wetland

Cool- and Warm-Season Grasses

Cool-season grasses



Warm-season grasses

Habitat Treatments

Mow/Mulch

Tree Clearing

Invasive Control

Prescribed Fire

Tools in the Habitat Toolbox

- Monitor
- No Action
- Tree Clearing
- Harrow/Seed
- Mow/Mulch
- Invasive Control
- Water Level Mgt.
- Prescribed Fire

Management by Habitat Type 2015-2020

Fiscal Year	Grass land Ac*	Shrub land Ac*	Young Forest Ac*	Forest Resrve Ac*	Wet land Ac*	Total Ac*
2015	417	1,234	0	0	235	1,886
2016	596	2,072	80	0	101	2,849
2017	487	972	30	0	383	1,872
2018	839	530	30	0	273	1,672
2019	560	2,163	130	7	212	3,072
2020	596	2,054	355	0	170	3,175
Total	3,495	9,025	625	7	1,374	14,526

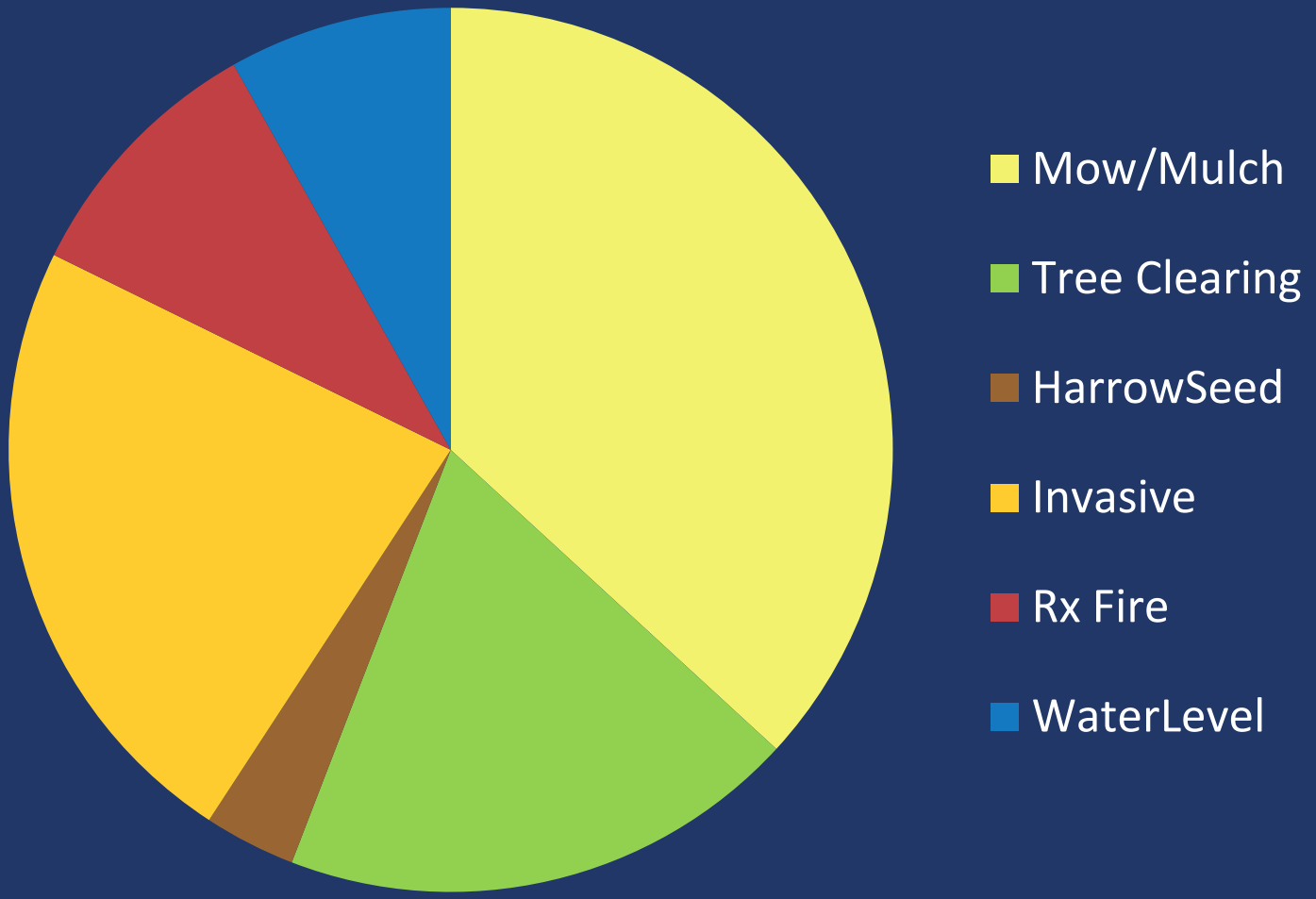
*Footprint Acres

Management by Habitat Type vs. Treatment 2015-2020

Fiscal Year	Grass land Ac	Shrub land Ac	Young Forest Ac	Forest Resrve Ac	Wet land Ac	Total Footprint Ac	Total Treatment Ac
2015	417	1,234	0	0	235	1,886	3,300
2016	596	2,072	80	0	101	2,849	3,100
2017	487	972	30	0	383	1,872	2,500
2018	839	530	30	0	273	1,672	1,800
2019	560	2,163	130	7	212	3,072	3,100
2020	596	2,054	355	0	170	3,175	3,400
Total	3,495	9,025	625	7	1,374	14,526	**17,300**

Management by Habitat Treatment 2015-2020

17,300 Acres Total



MassWildlife's Prescribed Fire Policy

Mission: Conserve and restore the Commonwealth's suite of fire-influenced natural communities & associated species

Comprehensive approach:

- Public & Personal Safety
- Sound planning
- Science-based management
- Public & private partnerships

Why we burn

Restore and Promote Resilient Natural Communities & Landscapes:

- Oak Forests
- Oak Woodlands
- Pitch Pine and Oak Barrens
- Atlantic White Cedar Swamps
- Heathlands
- Grasslands
- Fens

Why we burn

Prescribed burning enhances habitat for numerous

- Game Species

American Woodcock

Bobwhite Quail

Ruffed Grouse

Wild Turkey

Black Bear

Moose

White-tailed Deer

Barrens Habitat

Barrens were maintained for thousands of years by lightning-induced and native-set fires that promoted berries and improved hunting grounds. Fire suppression was initiated in the early 1900s to control wildfires. Though necessary, suppression ended fire's long-standing influence on barrens and other important habitats. In the absence of fire, trees that were minor components in healthy barrens expanded and changed habitat structure from dry, open, early successional conditions to mesic, closed canopy forest. Without fire, understory diversity is lost…

https://www.pgc.pa.gov/Wildlife/HabitatManagement/Documents/Barrens_Chapter.pdf

Why we burn

Prescribed fire enhances habitat for numerous species

Including benefits for more than 40% of state-listed species

Birds	12
Reptiles	3
Invertebrates	37
Plants	110
Total	**162**

Recent Grassland Treatments

- Frances Crane & Southwick WMA's

Frances Crane WMA North

Recent Shrubland Treatments

- **Myles Standish, Birch Hill, Muddy Brook, Montague Plains, Frances Crane**

May 2020

June 2020

Native Species

Table 1. State-listed species recorded at the Frances Crane WMA in 2019.

Common name	Scientific name	MA status	Last obs.
Frosted Elfin Butterfly	*Callophrys irus*	SC	2005
Gerhard's Underwing Moth	*Catocala herodias gerhardi*	SC	1998
Purple Tiger Beetle	*Cicindela purpurea*	SC	2018
Melsheimer's Sack Bearer Moth	*Cicinnus melsheimeri*	T	*
Unexpected Cycnia Moth	*Cycnia inopinatus*	T	2017
The Pink Streak Moth	*Dargida rubripennis*	T	1998
Barrens Buckmoth	*Hemileuca maia*	SC	2018
Pink Sallow Moth	*Psectraglaea carnosa*	SC	2010
Pine Barrens Speranza Moth	*Speranza exonerata*	SC	1998

*Not previously documented at Crane WMA.

Photo by M.W. Nelson

Pollinating Insects

- Montague Plains WMA
  - >200 Insect Species to date
  - >50% of statewide bee fauna at this one site
    - More bee species than all of Martha's Vineyard
    - More bee species than any other surveyed MA site
    - Several very rare, highly specialized species, including one bee species that is apparently native and *may* be new to science (DNA analysis pending)

Andrena are really hairy little bees.

Recent Young Forest Treatments

- Birch Hill, Tully Mountain, Quaboag, Norcross Hill, Stafford Hill, Dunstable Brook, Unkety Brook, & Fox Den WMA's

Recent Young Forest Treatments
Birch Hill WMA

Young Forest Habitat

Young Forest Habitat

October 2007

September 2008

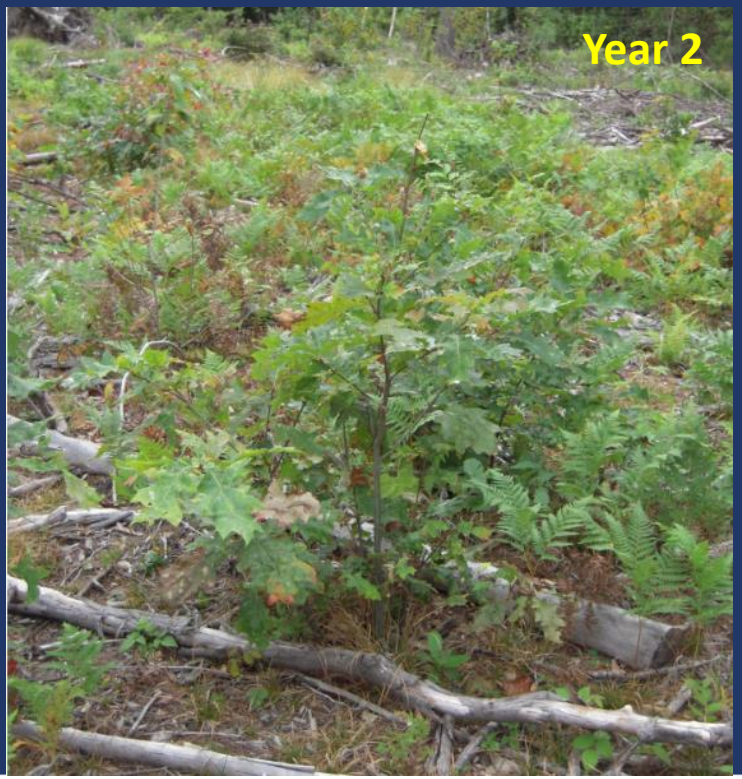
July 2010

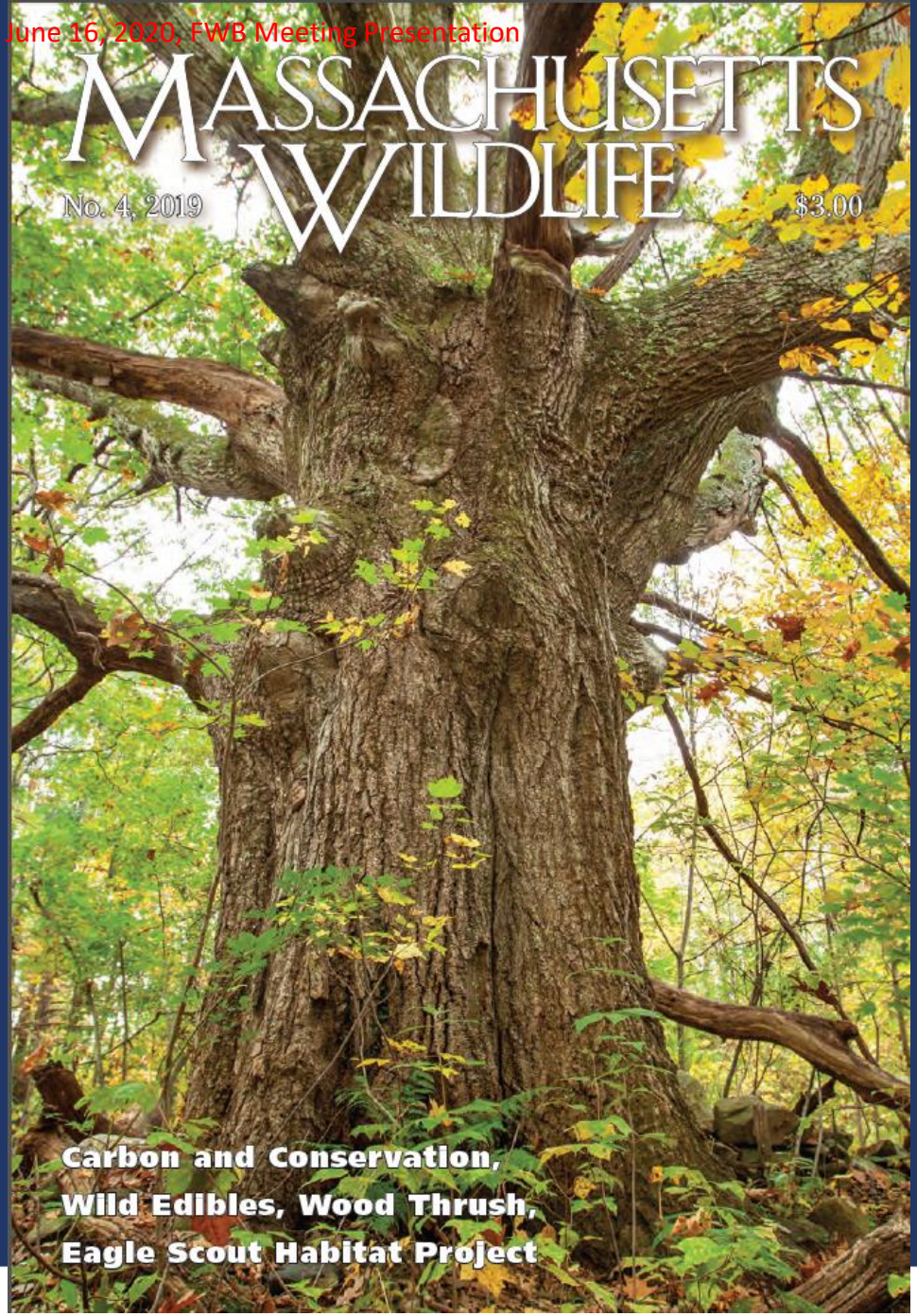
30 acre seed tree regeneration harvest on the Phillipston WMA.
Old field white pine (65-75 years old) was cut to create young forest habitat with a diversity of tree species (oak, cherry, maple, pine, and hemlock). Retained trees provide wildlife food (acorns and other seeds) and structural diversity. Abundant tree regeneration provides food and cover resources for declining wildlife species.

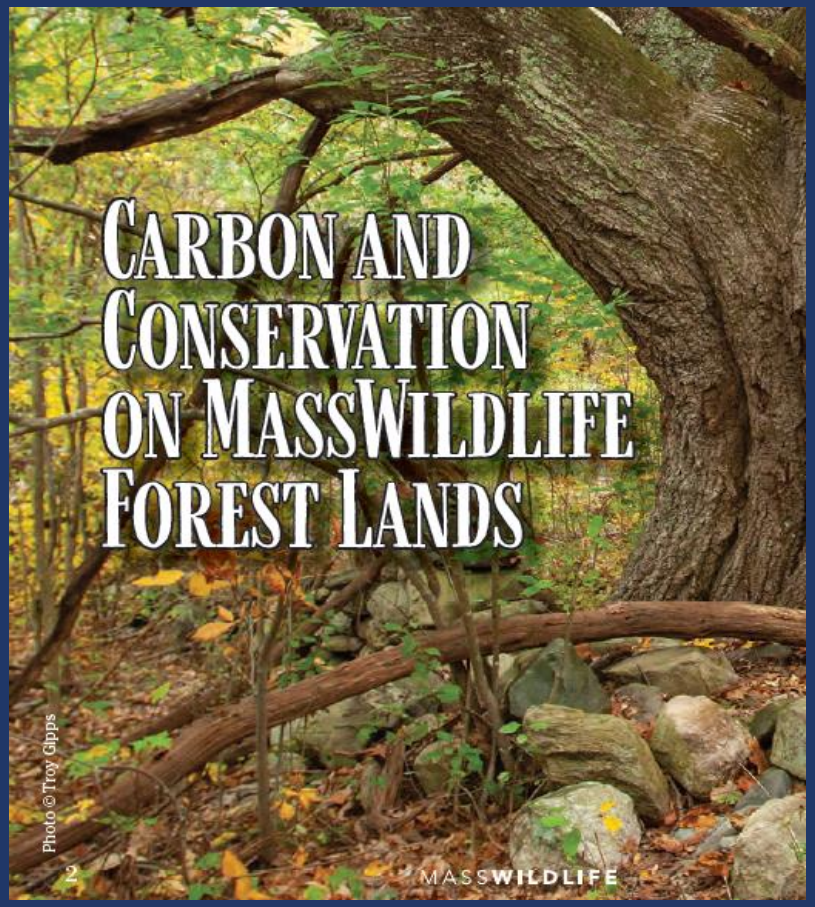
Oak Regeneration, Phillipston WMA

Year 1

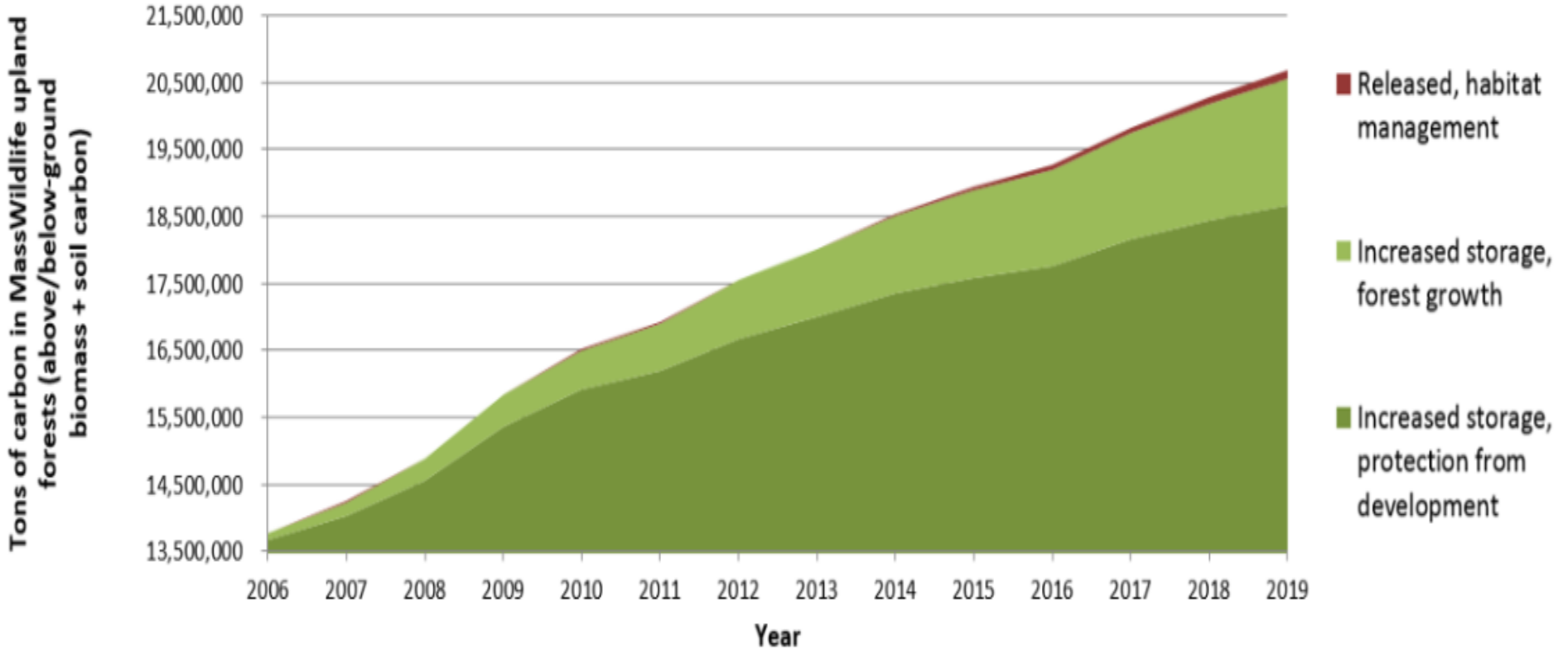


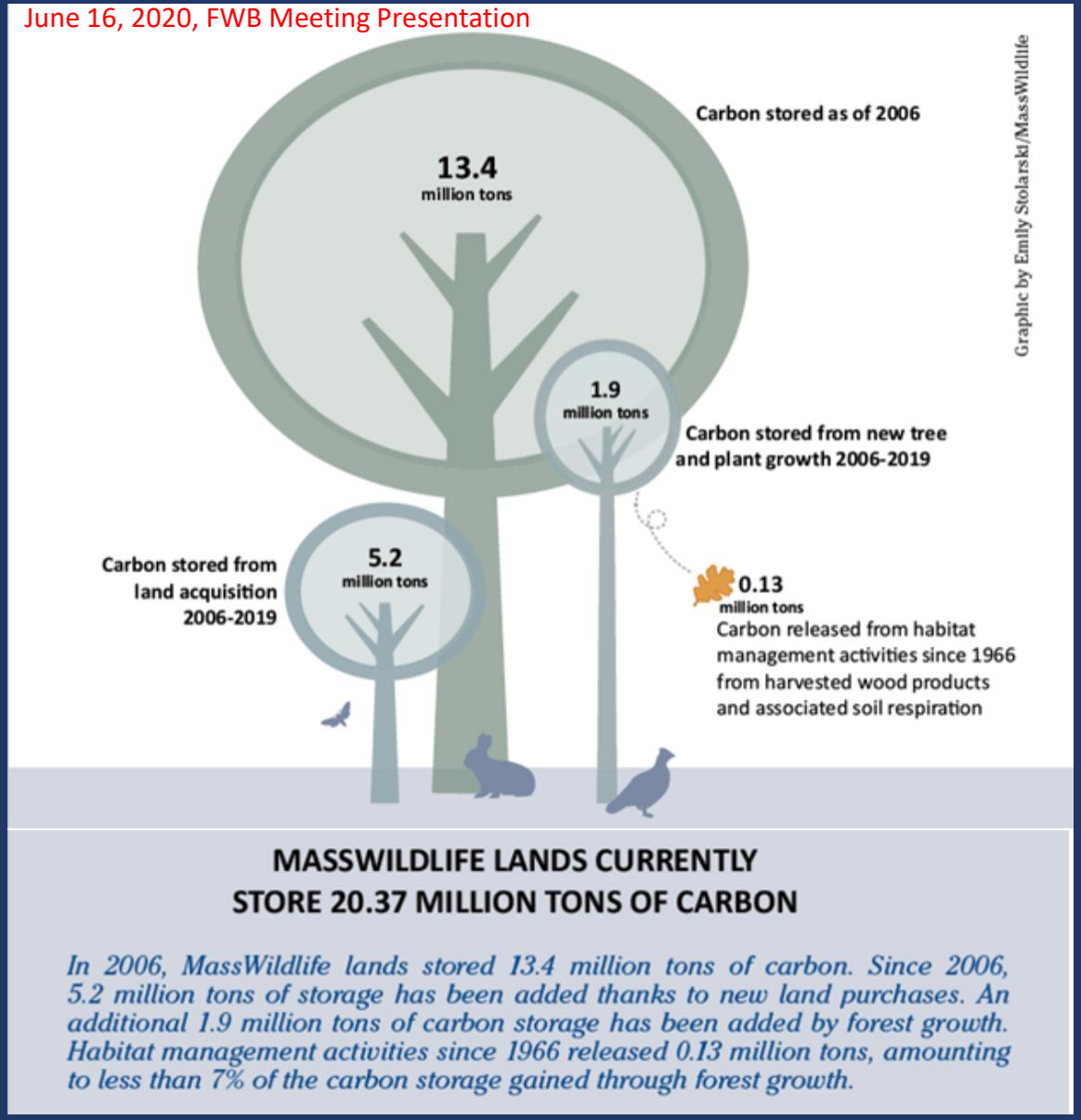




MASSACHUSETTS WILDLIFE
No. 4, 2019
$3.00
Carbon and Conservation,
Wild Edibles, Wood Thrush,
Eagle Scout Habitat Project


CARBON AND CONSERVATION ON MASSWILDLIFE FOREST LANDS
Photo © Troy Gipps
2
MASSWILDLIFE

Carbon Storage and Release on MassWildlife Forestlands (tons)





MASSWILDLIFE LANDS CURRENTLY STORE 20.37 MILLION TONS OF CARBON

In 2006, MassWildlife lands stored 13.4 million tons of carbon. Since 2006, 5.2 million tons of storage has been added thanks to new land purchases. An additional 1.9 million tons of carbon storage has been added by forest growth. Habitat management activities since 1966 released 0.13 million tons, amounting to less than 7% of the carbon storage gained through forest growth.

Current ratio of annual carbon storage to release is 17:1

Net average annual change in carbon storage is +0.8 tons/acre

https://www.mass.gov/service-details/carbon-storage-on-masswildlife-lands

Partnerships

- EEA
  - MassWildlife Biodiversity Initiative (BDI)
  - Habitat Management Grants
- NRCS
  - Working Lands for Wildlife
  - New England Cottontail
  - Northeast Turtles
  - Regional Conservation Program Partnerships

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John Scanlon, Habitat Program Leader