Foresters for the Birds





Hanaging Forests for Trees and Rinds in Massachusetts

A Goldo co Habitat Associations and Silvicultural Practices



Birds with Silviculture in Mind



Focal Burlt Pocker: Guide for Messachusetts Forement Identification (196, coological informativit, and management options for 17 primity forest bird speace.

Outline

- Bird monitoring
- Forest bird conservation needs
- Climate change
- Actions to take





North American Breeding Bird Survey (USGS)



BBS results – Canada Warbler





2010

Mass Audubon Breeding Bird Atlas



Mass Audubon Breeding Bird Atlas

Change Map







Carolina Wren Wild Turkey Eastern Bluebird Willow Flycatcher Yellow-throated Vireo Warbling Vireo Ruby-throated Hummingbird Alder Flycatcher Brown-headed Cowbird Yellow Warbler Great Crested Flycatcher Cedar Waxwing Northern Cardinal Yellow-billed Cuckoo Eastern Phoebe Indigo Bunting American Goldfinch Mourning Dove

Increase

Decrease

Northern Harrier Prairie Warbler Song Sparrow Eastern Kingbird House Wren Common Yellowthroat American Robin Blue Jay Chestnut-sided Warbler

Warbler Least Flycatcher Field Sparrow Ruffed Grouse Black-billed

Cuckoo



Young Forests

•41 species in Northeast•About 75% in decline•Habitat quantity

Early Successional Habitat



Disturbance

- Natural and historical sources
 - Beaver activity, fire, storms, disease, Native Americans
- Current sources
 - Silviculture
 - Powerline rights-of-way
 - Managed openings and old fields

Chestnut-sided Warbler





- 5 15 year old hardwood forest
- <30% canopy cover
- Dense shrubs and saplings



Sharp-shinned Hawk **Red-bellied** Woodpecker **Black Vulture** Wild Turkey Common Raven Blue-gray Gnatcatcher Acadian Flycatcher **Cooper's Hawk Evening Grosbeak** Barred Owl **Fish Crow** Worm-eating Warbler Pine Warbler **Turkey Vulture Orchard Oriole** Pileated Woodpecker

Yellow-throated Vireo Warbling Vireo **Ruby-throated** Hummingbird Northern Saw-whet Owl Yellow-bellied Sapsucker Winter Wren Pine Siskin Brown-headed Cowbird **Cerulean Warbler Blue-headed Vireo** Kinglet

Great Crested Flycatcher **Red-tailed Hawk** Golden-crowned Hermit Thrush **Tufted Titmouse** Increase

Red-breasted Nuthatch Great Horned Owl Black-throated **Blue Warbler** Magnolia Warbler Yellow-rumped Warbler **Brown Creeper** Hairy

Woodpecker White-breasted Nuthatch

> Downy Woodpecker

Veery Black-throated Green Warbler Ovenbird

Chipping Sparrow American Crow Blackburnian Warbler

Decrease

Green Heron American Robin Eastern Wood-Pewee Blue Jay Scarlet Tanager **Baltimore** Oriole Rose-breasted Grosheak Northern Flicker Least Flycatcher **Ruffed Grouse** Wood Thrush **Broad-winged Hawk** Black-and-white Warbler Northern Goshawk **Canada Warbler Olive-sided** Flycatcher Eastern Whip-poor-will Long-eared Owl Purple Finch



Mature Forests

 Common species actually in decline

- Massachusetts 60% forested, 3 million acres
- Habitat Quality

Complex vertical structure











Mature Forest



A diversity of tree ages and sizes, including very large trees (25 to 30 inches in diameter)

Snags—large standing dead trees



Large downed logs



Gaps in the forest canopy

Harvard Forest

Wood Thrush





- Moderate mid-story and understory closure
- Diversity of hardwood tree species
- 80% closed canopy

Foresters for the Birds



 Trains foresters to evaluate forest bird habitat

- Empowers landowners to manage for birds
- Massachusetts forests 75% privately owned



C Davey Walters







State of the Birds 2017

Massachusetts Birds and Our Changing Climate



Projected changes in Massachusetts



- Average temperature
- Extreme temperature events
- Annual precipitation (dry Summer/Fall)
- Growing season

- Snow fall
- Snow cover



Climate and species distributions









Direct effects on birds

- Thermoregulation and maintenance
 - Feeding
 - Courtship and breeding
- Reduced survival and reproductive success





Range shifts



Upward and northward

Range shifts







Among eastern species

- Northern expansion of breeding and wintering ranges
- Averaging 1-2 km per year, over 30 years

Mapping future distributions

- Map current species distributions, characterize current climate conditions
- Advance the climate conditions to 2050, assuming business as usual emissions
- Estimate suitability across the state for species in new projected climate



Black-capped Chickadee

- Maps show where suitable climate conditions will be in 2050
- Can be assumed to reflect likelihood of presence



Considerations and limitations

- Maps do not show abundance, or entire range
- Maps only include one emissions scenario

Not included:

- Possible adaptation to new climate conditions
- Future footprint of development
- Current and future habitat conditions



Northern Bobwhite



Current

2050



Yellow-bellied Sapsucker



Upward shift in range





Moving down?









- 9 of 11 high elevation species shifted down
- Decline of Red Spruce and Paper Birch
- Balsam Fir moved down
- Reproductive success?

Phenology



Long distance migrants



Actions – good conservation

- Bolster bird populations by reducing other stressors
 - Habitat management
 - Conserve forest blocks and maintain resiliency
 - Make your yard a bird sanctuary
- Reduce carbon foot print
- Support land trusts
- Bird conservation and climate legislation

Keep cats indoors



- 1-4 billion birds
- >6 billion small mammals
- 43% of owned cats hunted
- 23% of prey items were brought home









Will Emissions Matter?

