

An aerial photograph showing a winding river flowing through a vast, green landscape. The river meanders through a mix of open meadows and dense, dark green forests. In the background, rolling hills are visible under a clear sky. The overall scene is a natural, scenic view of a wildlife refuge area.

**Sunkhaze Meadows
National Wildlife Refuge
and
Carlton Pond Waterfowl
Production Area**



Department of the Interior

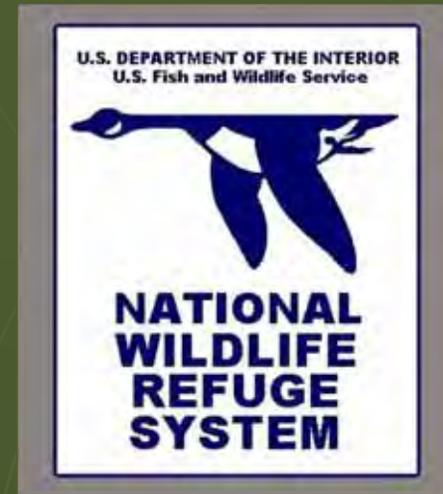


U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service is the principle federal agency responsible for conserving, protecting, and enhancing fish and wildlife and their habitats for the continuing benefit of the American people.

National Wildlife Refuges

- Migratory species
- Endangered species
- Habitat management
- Wildlife-oriented recreation
 - observation, photography, fishing, and hunting
- Public outreach
 - environmental education & interpretation



Background

- Refuge unit locations and descriptions
- Habitats and wildlife
- Public use
- Current management
- Other issues



Unit Locations and Acreage Figures



<u>Units</u>	<u>Acreage</u>	<u>Town & County</u>
Sunkhaze Meadows Unit	11,485	Milford, Penobscot
Benton Division	333.61	Benton, Kennebec
Sandy Stream Division	57.82	Unity, Waldo
Carlton Pond WPA	1,032.96	Troy, Waldo
Downing Easement 213.55	31.27	Exeter, Penobscot
	117.40	Exeter, Penobscot
	27.80	Exeter, Penobscot
	37.08	Exeter & Corinth, Penobscot
Fortin Easement	15.70	Fairfield, Somerset
Joe Miller Easement	36.80	Starks, Somerset
Quayle Easement	54.22	Mt. Chase Plantation, Penobscot
Total Acreage	13,024.07acres	

Habitats



Conservation Easements



Joe Miller Easement



Quayle Easement



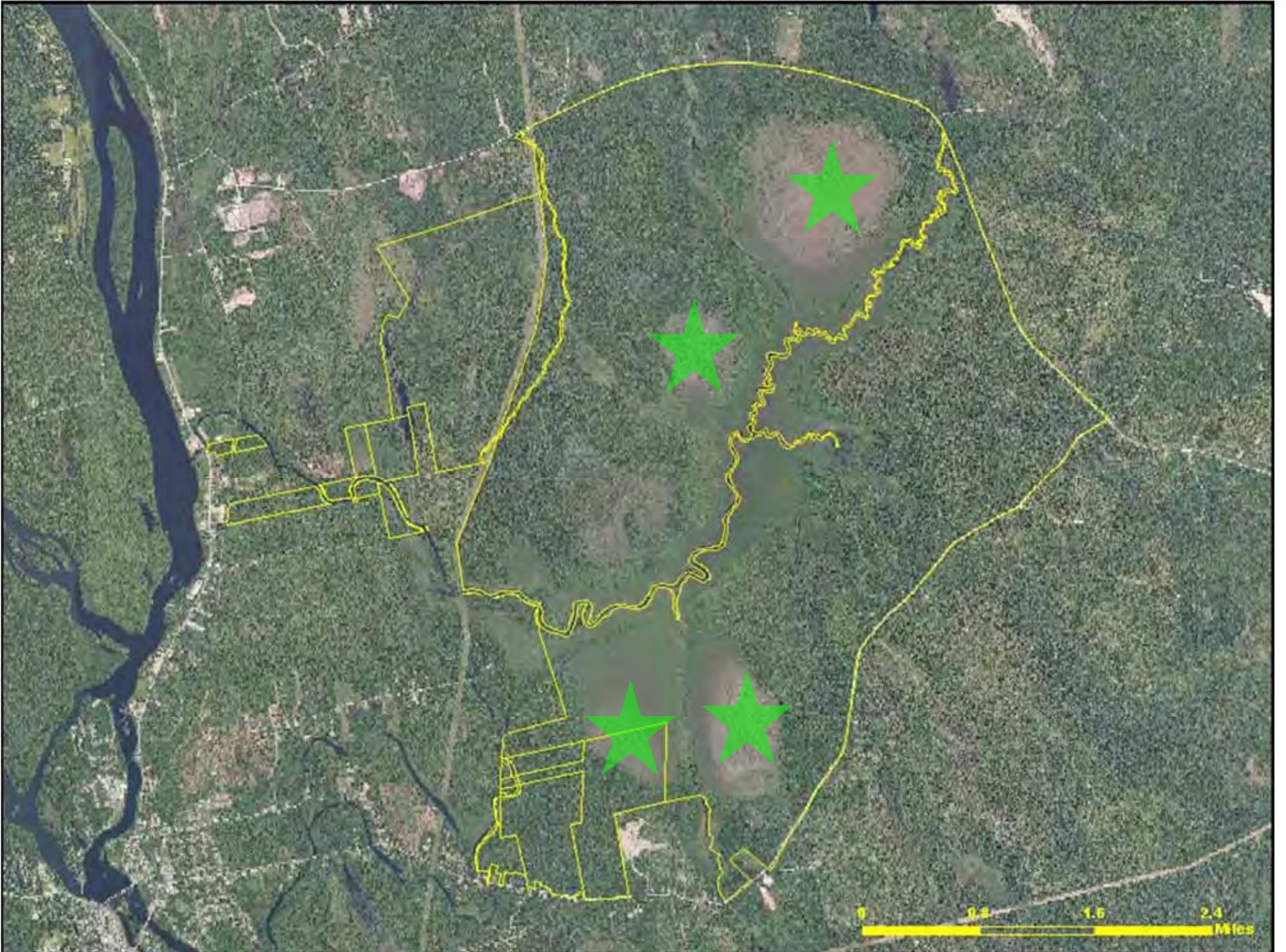
Fortin Easement

Vegetation Classification

- Aerial Photograph
- National Vegetation Classification System (NVCS)







Sunkhaze Peat

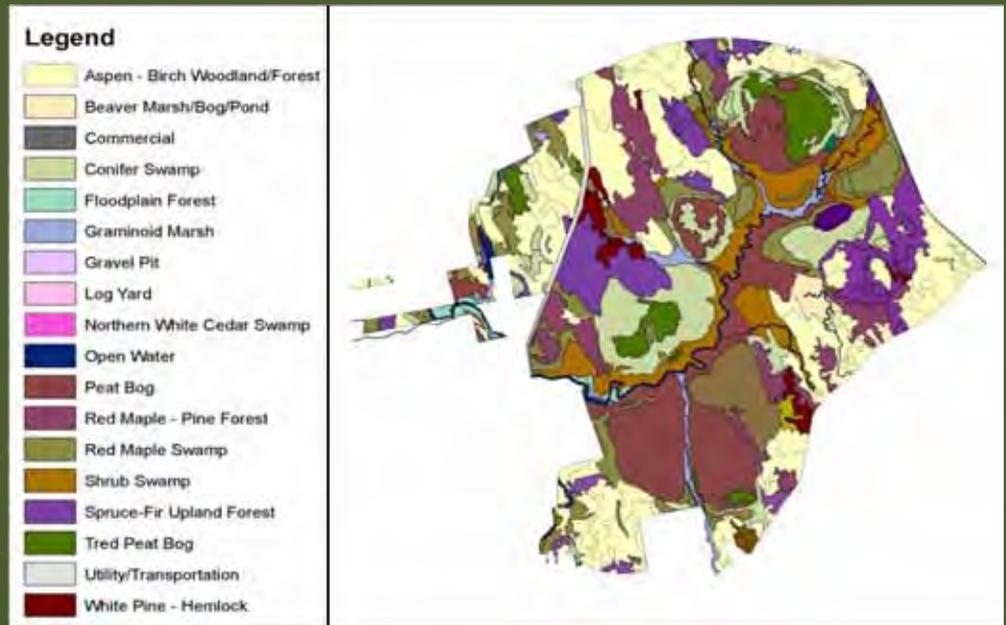
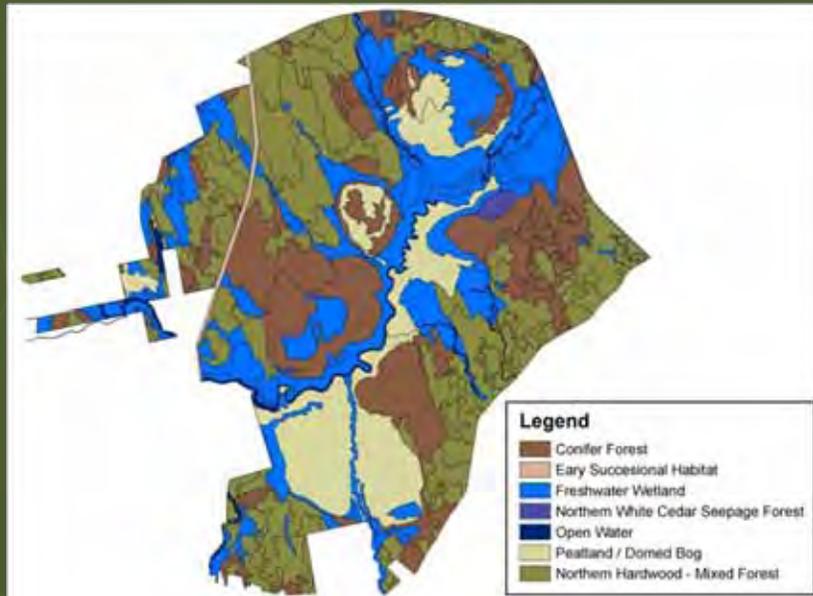
- 3,301 ac commercial quality peat
 - 661 ac = 15 ft thick
 - 785 ac = 13 ft thick
 - 1,115 ac = 10 ft thick



tao-dnd.blogspot.com



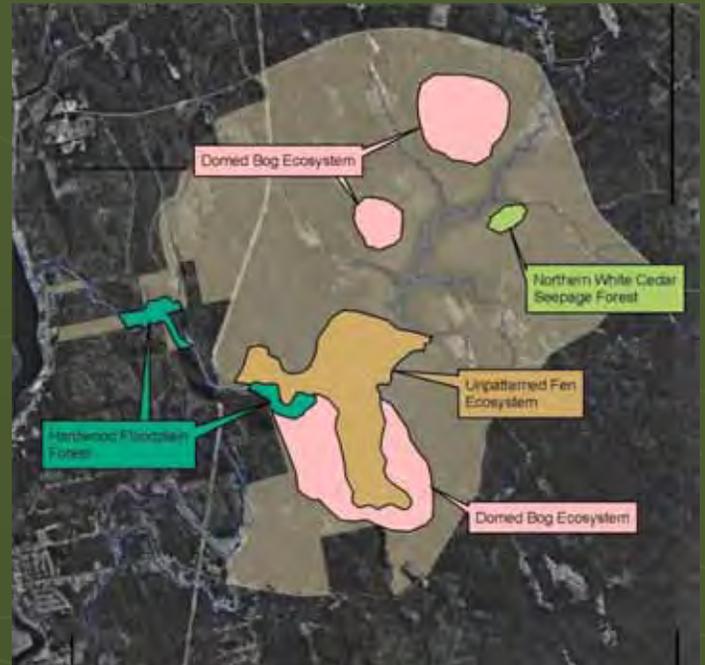
Farrell Grenier/Photo Researchers, Inc.



Sunkhaze Meadows Unit habitat cover types

Cover Type	Acres (GIS)	Percent (%)
Conifer Forest	2,696.47	23.9
Early Successional Habitat	110.56	1
Freshwater Wetlands	2,362.51	21
Northern White Cedar Seepage Forest	46.07	0.4
Open Water	150.53	1.3
Peatland / Domed Bog	2,053.73	18.2
Northern Hardwood – Mixed Forest	3,859.54	34.2
Total	11,279.41	100.00

Rare Plants and Plant Communities



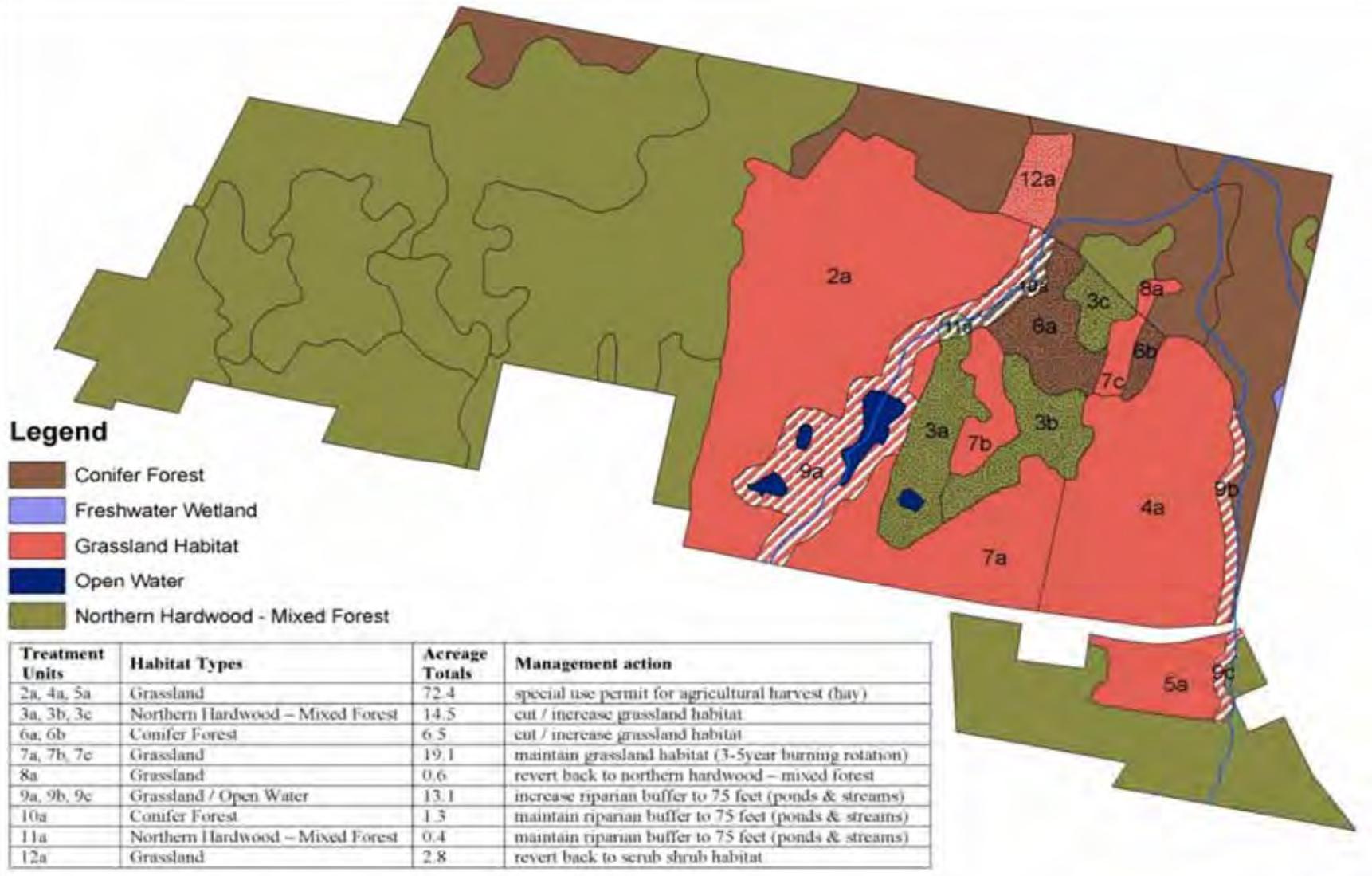
Rare Plants of Sunhaze Meadows NWR

Location	Common Name	Scientific Name	State Listing	State / Global Rarity Rank ^B
Sunhaze Unit	Bog bedstraw	<i>Galium labradoricum</i>	species of concern	S2? / G5
Sunhaze Unit	Showy lady's-slipper	<i>Cypripedium reginae</i>	threatened	S3 / G4
Sunhaze Unit	Slender blue flag	<i>Iris prismatica</i>	threatened	S2 / G4G5
Sunhaze Unit	Wild garlic	<i>Allium canadense</i>	species of concern	S2 / G5

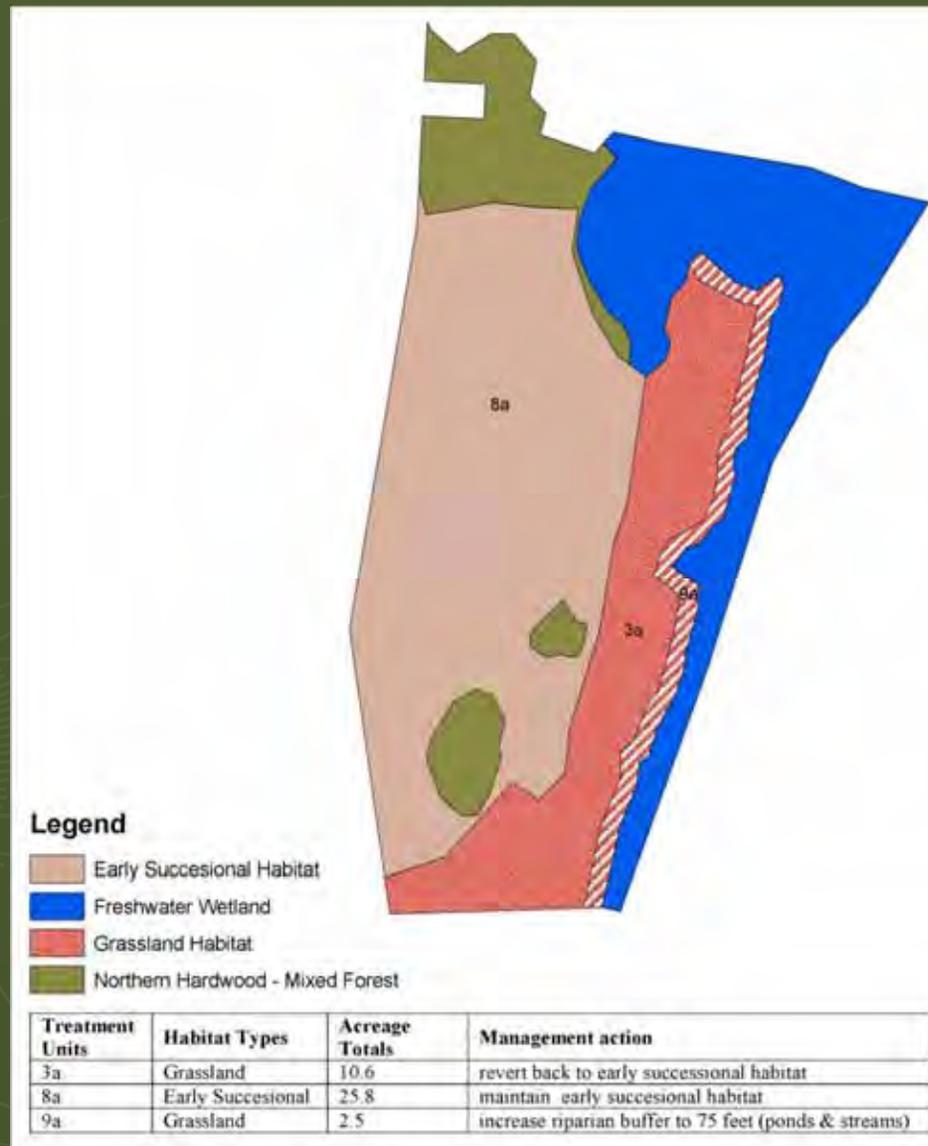
Benton Unit



Benton Unit



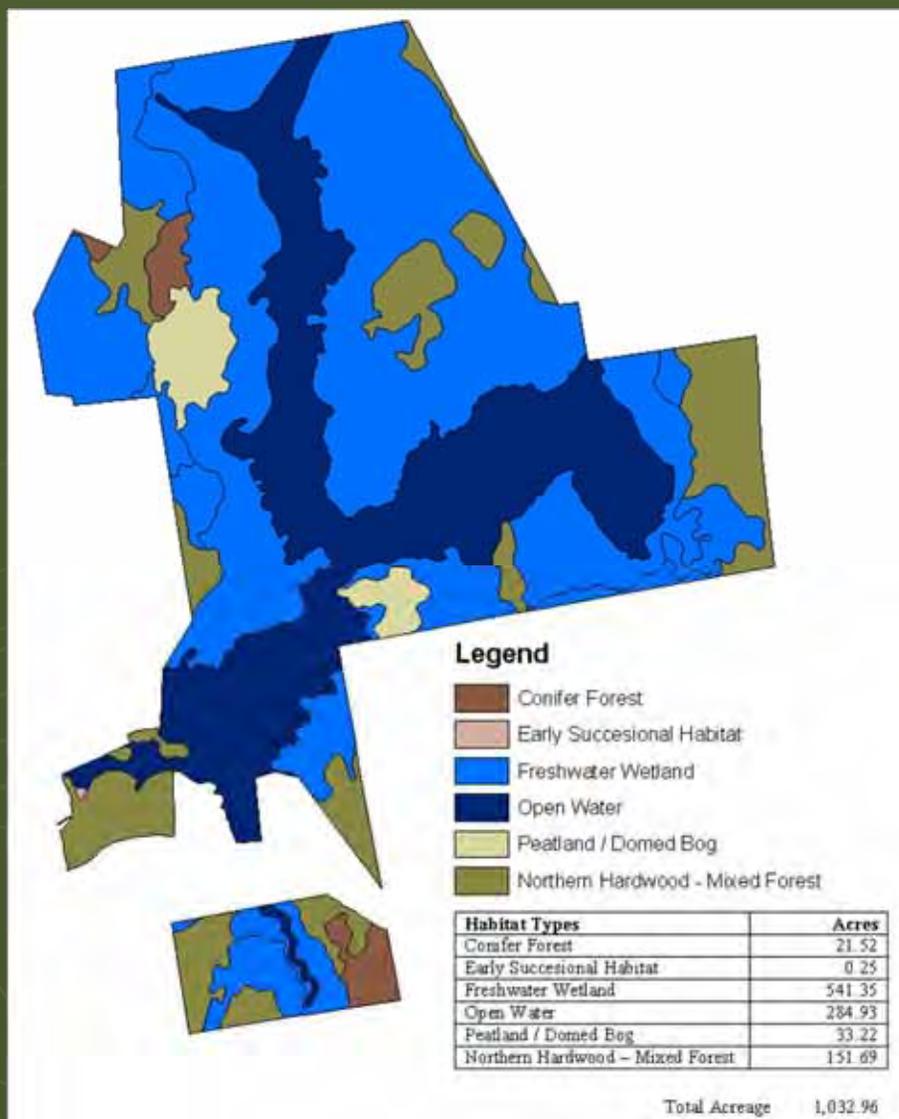
Sandy Stream Division



Carlton Pond WPA



Carlton Pond WPA



Wildlife: First!



Species Detected on Refuge Lands, 1990-2005

	SMU	SSU	BU	CPW	FE	JME	DE1	DE2	DE3	DE4	QE
Amphibians	17	12	16	11	4	7	6	5	7	5	3
Birds	199	65	97	94	29	32	35	40	31	16	14
Fish	21	19	1	28	1	1	0	0	0	0	0
Fungi	20	1	2	6	1	1	2	4	1	0	2
Invertebrates	111	10	20	48	26	26	17	30	14	11	10
Mammals	45	17	23	12	12	9	6	9	8	3	6
Mollusks	5	4	1	4	1	1	1	1	1	2	1
Plants	339	71	209	188	100	129	96	114	78	63	79
Reptiles	9	1	4	4	1	0	1	0	0	0	0

Key to the Table:

SMU- SNKNWR, Sunkhaze Unit
 SSU- SNKNWR, Sandy Stream Unit
 BU- SNKNWR, Benton Unit
 CPW- Carlton Pond WPA
 FE- Fortin Conservation Easement

DE1- Downing Conservation Easement 1
 DE2- Downing Conservation Easement 2
 DE3- Downing Conservation Easement 3
 DE4- Downing Conservation Easement 4
 QE- Quayle Conservation Easement
 JME- Joe Miller Conservation Easement

Notable Wildlife

- ▶ Sunkhaze Meadows Unit

~200 spp. of birds; lots of species of waterfowl; bitterns and rails; osprey, harriers, and owls; many warblers, woodpeckers, vireos, and flycatchers

- ▶ Benton Unit

woodcock, red-winged blackbird, bobolink

Notable Wildlife

- ▶ Sandy Stream Unit

tidewater mucket, yellow lampmussel
(both state-listed as threatened)

- ▶ Carlton Pond Unit

American black duck, hooded merganser,
common goldeneye, Canada goose,
black tern (state-listed endangered),
osprey

Resources of Concern

- Bird species of concern based on national and regional plans
- Developed a subset of species to reflect regional contribution to the NWR System
- Habitat the Refuge can contribute to regional and national conservation efforts
- Protection of freshwater wetlands and wetland - dependent species
- Identification of non-bird taxa priorities
- Mapped current Refuge vegetation and surrounding landscape conditions
- Draft objectives so that future habitat conditions will support focal species

► Priority Habitats and Associated Focal Species of Concern for Sunhaze Meadows NWR and Carlton Pond WPA

High Priority Habitat Types	Associated Focal Species
Spruce- fir forest	Bald eagles, bay-breasted , chestnut-sided, and blackburnian warblers, Northern parula and spruce grouse
Open water / emergent marsh	Black tern, American black duck, mallard, pintail, green-winged teal, and migratory shorebirds
Peatlands (bogs/fens)	American black duck, rusty blackbird, and migratory waterfowl
Early successional forest habitat	American woodcock, chestnut-sided warbler, olive-sided flycatcher, rose-breasted grosbeak
Streams, brooks, and riparian habitats	Brook trout, tidewater mucket, yellow lampmussel
Sedge meadow / freshwater wetland	Sedge wren, American bittern, yellow rail
Moderate Priority Habitat Types	Associated Focal Species
Northern Hardwood / mixed forest	Black-throated-blue warbler and Canada warbler
Grassland	American woodcock, bobolink, and northern harrier
Northern white cedar seepage forest	White-tailed deer wintering areas
Vernal pool	Spotted salamander and wood frog



Danielle D'Auria

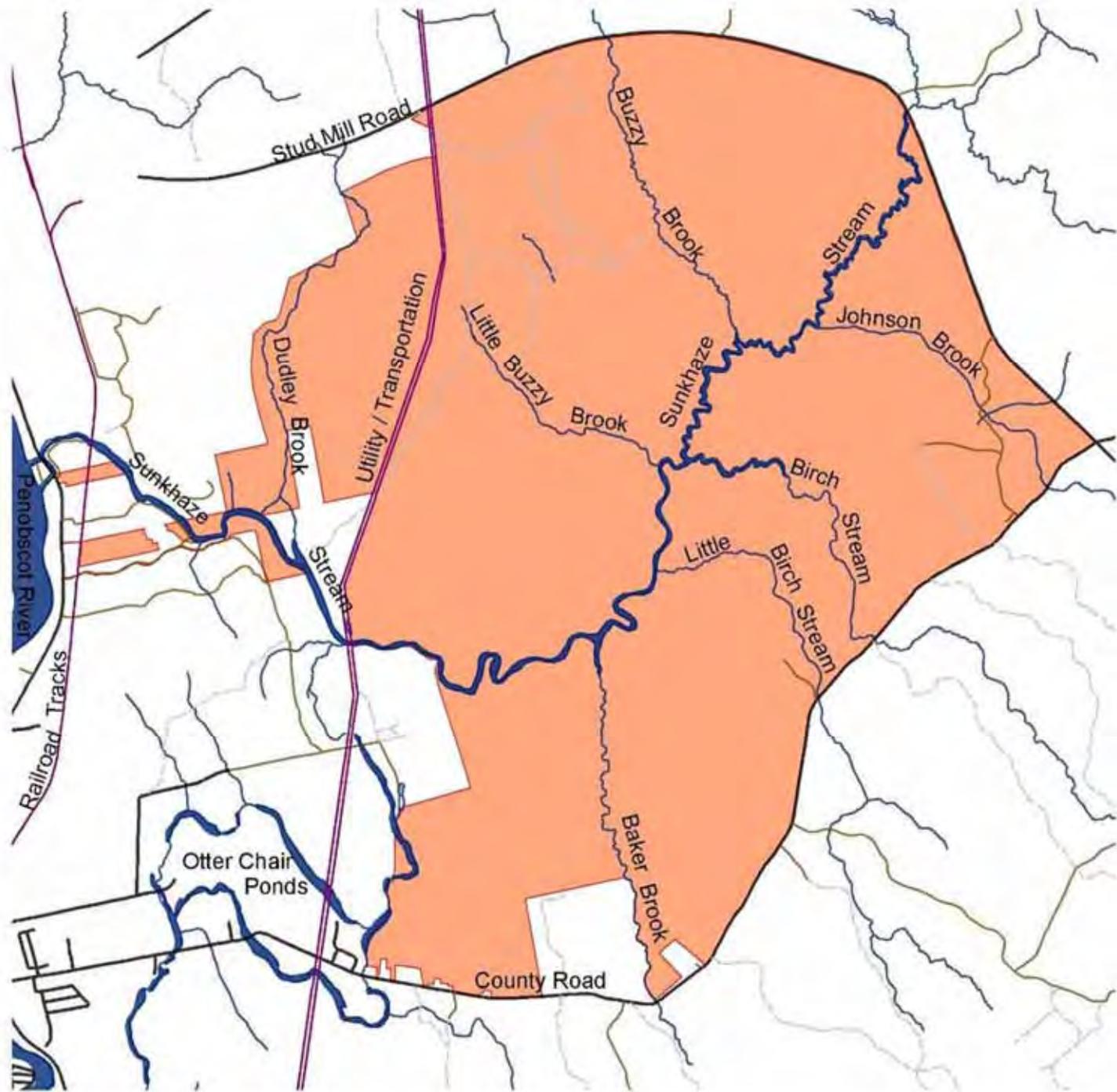




Danielle D'Auria



Jonathan Mays



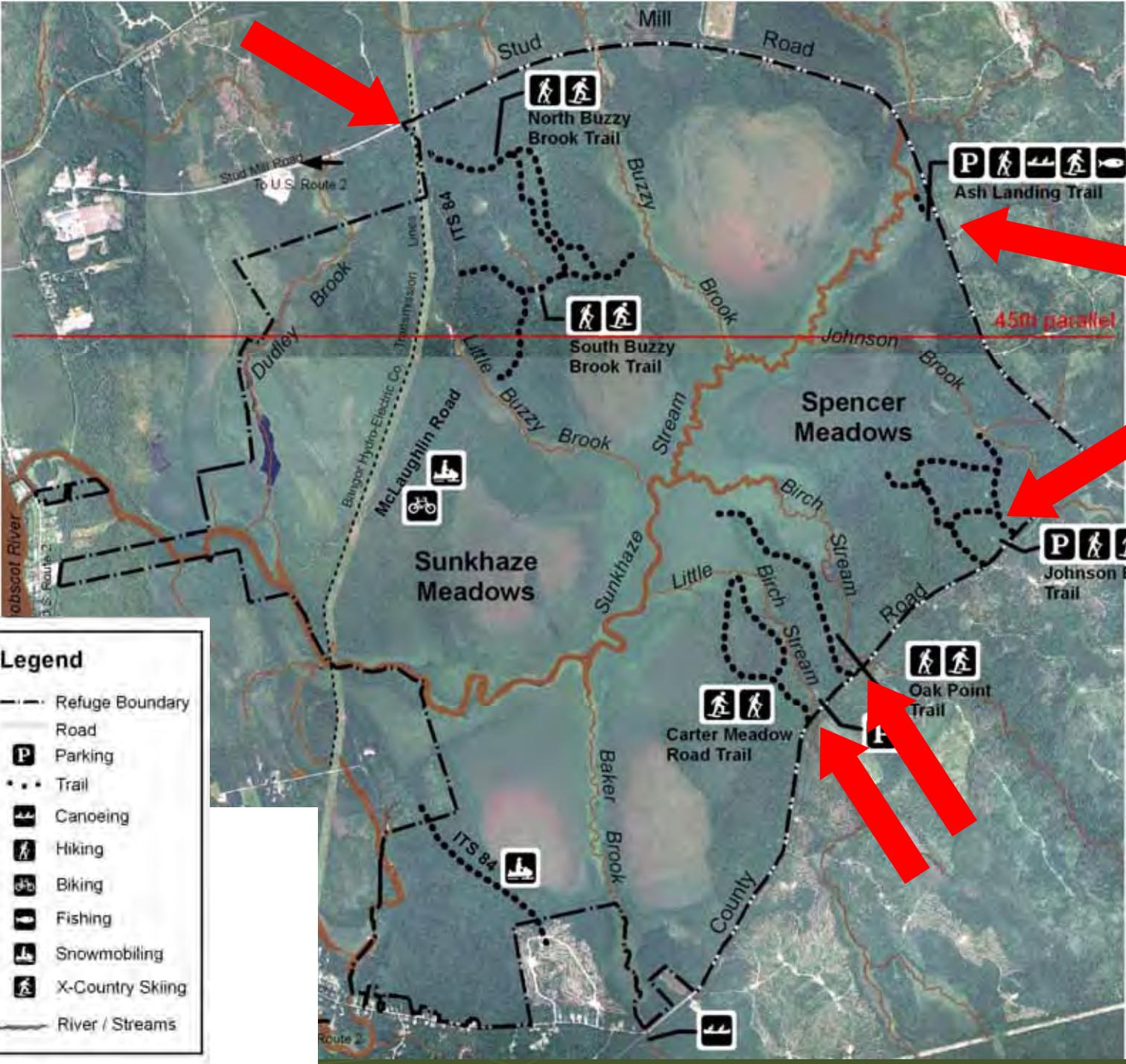




Leigh Osgood



Danielle D'Auria



Legend

- Refuge Boundary
- Road
- Parking
- Trail
- Canoeing
- Hiking
- Biking
- Fishing
- Snowmobiling
- X-Country Skiing
- River / Streams

Hunting & Trapping



Management

- ▶ in recent downsizing, was de-staffed
- ▶ now managed by Maine Coastal Islands NWR
- ▶ 8 staff people
 - 2 biologists, 1 law enforcement, 1 office manager, 1 boat operator/maintenance position) in Milbridge
 - 1 biologist, 2 managers in Rockland
 - 2 hours away, also manage active biological program, 54 islands and 4 mainland units

= problems!

- Friends and volunteers extremely **IMPORTANT!**



Invasives



Wilderness?

- ▶ 5,000+ acres
- ▶ Affected primarily by nature; man's touch unnoticeable
- ▶ Opportunities for solitude or primitive recreation
- ▶ No motorized vehicles allowed within a Wilderness

Wild and Scenic River Designation?

Sunkhaze Stream on National Park Service's
inventory of potentially eligible rivers



Goals and Objectives Within the Planning Process

Fish and Wildlife Service Mission



Refuge System Mission



Refuge Purpose(s)



**National/Regional Goals and
Priorities**



Ecosystem Goals and Objectives



Refuge Vision



Goals



Objectives



Strategies



**Monitoring and Feedback
(Adaptive Management)**

The End

- ▶ Special thanks to Danielle D'Auria and Michael Langlois for letting me use their slides and images in this presentation.