

# Trust Resources and Other Species and Habitats of Management Concern

## Codes used in Species List

### Global Element Ranks (from The Nature Conservancy)

**G1** – Critically Imperiled globally because of extreme rarity (typically 5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extinction.

**G2** – Imperiled globally because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extinction throughout its range.

**G3** – Rare or uncommon but not imperiled. Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g., a single western state, a physiographic region in the East) or because of other factors making it vulnerable to extinction throughout its range; in terms of occurrences, in the range of 21 to 100.

**G4** – Not rare and apparently secure globally, though it might be quite rare in parts of its range, especially at the periphery; cause for long-term concern. (Usually more than 100 occurrences.)

**G5** – Demonstrably secure globally; widespread and abundant, though it may be quite rare in parts of its range, especially at the periphery.

**GH** – Of historical occurrence throughout its range, - possibly extinct - i.e., formerly part of the established biota with the expectation that it may be rediscovered (e.g., Bachman's warbler).

**GU** – Possibly in peril range-wide, but status uncertain; need more information.

**GX** – Believed to be extinct throughout its range (e.g., Passenger pigeon) with virtually no likelihood that it will be rediscovered.

**G#G#** – Range ranks; insufficient information to rank more precisely.

**G?** – Not yet ranked.

**G#T#** – For infraspecific taxa; the G rank applies to the full species and the T rank applies to the infraspecific taxon.

**G#Q** – Taxonomic status is questionable.

## Federal Status or Authority

**E** – Formally listed as Endangered under the Endangered Species Act of 1973

**T** – Formally listed as Threatened under the Endangered Species Act of 1973

**PE** – Proposed Endangered

**PT** – Proposed Threatened

**C1** – Taxa for which the Service currently has on file substantial information on biological vulnerability and threat(s) to support the appropriateness of proposing to list them as endangered or threatened species

**SA** – Similarity of appearance of species

## State Status

**FE** – Federally Endangered (see above)

**FT** – Federally Threatened (see above)

**E** – State Endangered. Native species in imminent danger of extirpation from Rhode Island. These taxa meet one or more of the following criteria: (1) a species currently under review for listing by the U.S. Fish and Wildlife Service as Federally endangered or threatened; (2) a species with 1-2 known or estimated total populations in the state; (3) a species apparently globally rare or threatened, and estimated to occur as approximately 100 or fewer populations range-wide.

**T** – State Threatened. Native species which are likely to become state endangered in the future if current trends in habitat loss or other detrimental factors remain unchanged. These taxa meet one or more of the following criteria: (1) a species with 3-5 known or estimated populations in the state; (2) a species with more than 5 known or estimated populations in the state, but exhibiting particular vulnerability to habitat loss.

**C** – Concern. Native species which do not apply under the above categories but are additionally listed due to various factors or rarity and/or vulnerability; or, species which may warrant listing in higher categories but status information is presently not well known.

**SH** – Native species which have been documented for the state during the last 100 years but for which current occurrences are unknown. When known, the year of the last documented occurrence is included.

## State Element Ranks (from the Nature Conservancy and/or State Heritage Programs)

Numeric Rank: Based primarily on the number of occurrences of the species in the state.

**S1** – Critically imperiled in state (usually 5 or fewer occurrences); especially vulnerable to extirpation in the state.

**S2** – Imperiled in state (usually 6 to 20 occurrences).

**S3** – Rare or uncommon in state (usually 21 to 100 occurrences).

**S4** – Widespread, abundant and apparently secure in the state, but with cause for long-term concern (usually more than 100 occurrences).

**S5** – Widespread, abundant and demonstrably secure in state.

**S?** – Not yet ranked in the state.

**SU** – Unrankable or uncertain status due to lack of information; possibly in peril

**SE** – Exotic: an exotic established in the state.

**SA** – Accidental or casual in state (infrequent and far outside usual range).

**SH** – Historical: species occurred historically in the state (with the expectation that it may be extant and rediscovered), generally not having been verified in the past 20 years.

**SX** – Apparently extirpated from state.

**SN** or **SZN** – Regularly occurring, usually migratory and typically non-breeding, species for which no significant or effective habitat conservation measures can be taken in the state; no definable occurrences.

*For species with distinct breeding (B) and non-breeding (N) populations, a breeding status SRANK can be coupled with its complementary non-breeding SRANK, separated by a comma, e.g. S2B, S3N or S1B, SHN.*

**SR** – Reported from state, but without persuasive documentation; species may be misidentified.

**SRF** – Reported falsely; erroneously reported as occurring in the state and error has persisted in the literature.

**SP** – Potentially occurs in the state, but no occurrences reported.

**.1** – Species documented from a single location

### Occurrence/Occasional Use (Seasonal Use)

Codes indicating the status of a species population within a specific habitat complex or other area.

**+** - Known to occur in the area; seasonal use not specified

**H** - Known to occur historically in the area but not since 1970

**B** - Breeds in the area

**M** - Migrates through the area and has identifiable migratory stopover or staging areas within the watershed

**W** - Overwinters in the area

**P** - Primarily pelagic

**I** - Introduced or re-introduced

### Refuges

Indicates occurrence of the species on existing National Wildlife Refuges in Rhode Island. A = all Rhode Island Refuges, B = Block Island, N = Ninigret, C = Chafee, T = Trustom Pond, S = Sachuest Point.

### Seasonal Relative Abundance Codes (b,s,S,F,W)

from the Birds of the National Wildlife Refuges of Rhode Island.

Season: b= breeding, s= spring, S= summer, F= Fall, W= Winter.

Relative abundance: a = abundant, c = common, u = uncommon, o = occasional, r = rare.

### Population/ Breeding Bird Atlas (BBA)

Known occurrences or populations in Rhode Island, from Natural Heritage Program. For breeding birds, figure indicates number of probable or confirmed breeding bird atlas blocks in the state.

Scientific Name	Common Name(s)	Global	Federal	RI Rank	RI Status	Sea. Use	Refuges	b	s	S	F	W	Pop./B BA	Source/Justification
<b>ANIMALS</b>														
<b>INVERTEBRATES</b>														
<b>ARTHROPODA</b>														
<b>INSECTA</b>														
<b>ODONATA (Dragonflies and Damselflies):</b>														
<i>Williamsonia lintneri</i>	ringed boghaunter	G2	C2	S2	C									former candidate/globally imperiled
<i>Enallagma pictum</i>	scarlet bluet	G3												globally rare
<i>Enallagma recurvatum</i>	barrens bluet damselfly	G3	3C	S2	C									former candidate/globally rare
<b>COLEOPTERA (Beetles):</b>														
<i>Cicindela d. dorsalis</i>	northeastern beach tiger beetle	G4T1T2	T	SX	SH(1978)									fed. listed/globally imperiled
<i>Nicrophorus americanus</i>	American burying beetle	G1	E	S1	FE									fed. listed/globally critically imperiled
<i>Lordithon niger</i>	black lordithon rove beetle	G1	C2	S1	C									former candidate/globally critically imperiled
<b>LEPIDOPTERA (Butterflies and Moths):</b>														
<i>Speyeria idalia</i>	regal fritillary butterfly	G3	C2	SX	SH(1990)									former candidate/globally rare
<i>Mitoura hesseli</i>	Hessel's hairstreak	G3G4	3C	S2S3	C									former candidate
<b>MEROSTOMATA</b>														
<i>Limulus polyphemus</i>	horseshoe crab													R5 Refuge List/important forage species for shorebirds
<b>VERTEBRATES</b>														
<b>REPTILES</b>														
<b>TESTUDINES (Turtles):</b>														
<i>Caretta caretta</i>	loggerhead sea turtle	G3	T	S?	FT									fed. listed./globally rare, occurs in RI waters
<i>Chelonia mydas</i>	green sea turtle	G3	T	S?	FT									fed. listed./globally rare, occurs in RI waters
<i>Dermochelys coriacea</i>	leatherback sea turtle	G3	E	S?	FE									fed. listed./globally rare, occurs in RI waters
<i>Lepidochelys kempii</i>	Kemp's ridley sea turtle	G1	E	S?	FE									fed. listed./globally rare, occurs in RI waters
<i>Malaclemys t. terrapin</i>	northern diamondback terrapin	G5T5	C2	S1	ST									former candidate

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<b>FISH</b>														
<b>Catadromous</b>														
<i>Anguilla rostrata</i>	American eel	G5												catadromous/R5 Refuge List
<b>Anadromous</b>														
<i>Alosa aestivalis</i>	blueback herring	G5												anadromous/R5 Refuge List
<i>Alosa pseudoharengus</i>	alewife	G5												anadromous/R5 Refuge List
<i>Alosa sapidissima</i>	American shad	G5												anadromous/R5 Refuge List
<i>Morone saxatilis</i>	striped bass	G5												anadromous/R5 Refuge List
<i>Salmo salar</i>	Atlantic Salmon	G5												anadromous/R5 Refuge List
<b>Marine &amp; Estuarine Interjuris. Fish</b>														
<i>Paralichthys dentatus</i>	summer flounder	G?												interjurisdictional/R5 Refuge List
<i>Tautoga onitis</i>	tautog	G?												interjurisdictional/R5 Refuge List
<i>Pleuronectes americanus</i>	winter flounder	G5?												interjurisdictional/R5 Refuge List
<i>Pomatomus saltatrix</i>	bluefish	G?												interjurisdictional/R5 Refuge List
<i>Cynoscion regalis</i>	weakfish	G?												interjurisdictional/R5 Refuge List
<b>BIRDS</b>														
<u>GAVIIFORMES (Loons):</u>														
<i>Gavia immer</i>	common loon	G5				M/W	A			c	o	c	c	non-game bird man. concern
<u>CICONIIFORMES (Hérons, Ibises, and Storks):</u>														
<i>Botaurus lentiginosus</i>	American bittern	G4		S1B, S1N		B/M/W	N,T,S	y	u	u	u	o	2	non-game bird man. concern
<i>Ixobrychus exilis</i>	least bittern	G5		S2B, S2N		B/M	T,N,S	y	o	o	o		5	non-game bird man. concern
<u>ANSERIFORMES (Waterfowl):</u>														
<i>Podiceps auritus</i>	horned grebe	G5				M/W	A			c	o	u	c	NAWCA priority
<i>Podilymbus podiceps</i>	pied-billed grebe	G5				B/M/W	A	y	c	o	c	u		non-game bird man. concern
<i>Branta bernicla</i>	brant	G5				M/W	A			u		u	u	NAWCA priority/NAS Watchlist
<i>Aix sponsa</i>	wood duck	G5				B/M/W?	T,N,C	y	u	u	u	r	48	NAWCA priority

Appendix A

Scientific Name	Common Name(s)	Global	Federal	RI Rank	RI Status	Sea. Use	Refuges	b	s	S	F	W	Pop./B BA	Source/Justification
<i>Anas acuta</i>	northern pintail	G5				M/W	T		u			o		NAWCA high priority/R5 Refuge List
<i>Anas platyrhynchos</i>	mallard	G5				B/M/W	A	y	c	c	a	c	79	NAWCA high priority
<i>Anas rubripes</i>	American black duck	G4				B/M/W	A	y	c	c	c	a	42	NAWCA high priority/R5 Refuge List/NAS Watchlist/PIF SNE globally important
<i>Aythya collaris</i>	ring-necked duck	G5				M/W	N,T,C		u			o		NAWCA priority
<i>Aythya valisineria</i>	canvasback	G5				M/W	A		c	o	c	o		NAWCA priority
<i>Aythya americana</i>	redhead	G5				M/W	A		u			o		NAWCA priority
<i>Aythya marila</i>	greater scaup	G5				M/W	A		c	o	c	c		R5 Refuge List
<i>Aythya affinis</i>	lesser scaup	G5				M/W	A		o		o	o		R5 Refuge List
<i>Histrionicus histrionicus</i>	harlequin duck	G5				M/W	S		u		u	u		former candidate
<i>Somateria mollissima</i>	common eider	G5				B?/M/W	A		u		u	u		NAWCA priority
<i>Melanitta nigra</i>	black scoter	G5				M/W	A		c	o	c	c		R5 Refuge List
<i>Melanitta fusca</i>	white-winged scoter	G5				M/W	A		c	o	c	c		R5 Refuge List
<i>Melanitta perspicillata</i>	surf scoter	G5				M/W	A		c	o	c	c		R5 Refuge List
<u>FALCONIFORMES (Diurnal Birds of Prey):</u>														
<i>Accipiter gentilis</i>	northern goshawk	G5		S1B,S2 N	C	M/W	A		r		r	r	3	former candidate
<i>Buteo lineatus</i>	red-shouldered hawk	G5		S1B,S1 N		M	A		o	o	o		12	non-game bird man. concern
<i>Circus cyaneus</i>	northern harrier	G5		S1B,S3 N		B/M/W	A		u	u	u	o	3	non-game bird man. concern
<i>Falco peregrinus</i>	peregrine falcon	G3		SZN	?	M	A		r	r	o			former fed. listed
<i>Haliaeetus leucocephalus</i>	bald eagle	G3G4	T	S1N	FT	M	A		r		o	r		fed. listed
<u>GRUIFORMES (Rails, Cranes and Allies):</u>														
<i>Rallus longirostris</i>	clapper rail	G5				B/M	N		r	r	r	r		NAWCA priority/declining



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<u>CHARADRIIFORMES (Shorebirds, Gulls and Alcids):</u>														
<i>Charadrius melodus</i>	piping plover	G3	T	S1B,S1N	FT	B/M	T,N	y	o	u	o		7	fed. listed
<i>Charadrius vociferus</i>	killdeer	G5				B/M	A	y	u	u	u	o	55	ISS declining/R5 Refuge List
<i>Pluvialis dominica</i>	lesser golden-plover	G5				M	A	r	r	o				NAWCA priority
<i>Bartramia longicauda</i>	upland sandpiper	G5		S1B,S1N		B/M	A	r	r	r			3	non-game bird man. concern/PIF SNE regionally important
<i>Calidris alba</i>	sanderling	G5				M/W	A	c	u	c	c			ISS declining/R5 Refuge List
<i>Calidris canutus</i>	red knot	G5				M	A	o	o	r				ISS declining/R5 Refuge List/NAS Watchlist
<i>Calidris fuscicollis</i>	white-rumped sandpiper	G5				M	A	o	o	a				NAWCA priority
<i>Calidris himantopus</i>	stilt sandpiper	G5				M	A	r	o	r				NAS Watchlist
<i>Calidris maritima</i>	purple sandpiper	G5				M/W	A	c	o	c				ISS declining/R5 Refuge List
<i>Calidris minutilla</i>	least sandpiper	G5				M	A	a	a	c				ISS declining/R5 Refuge List
<i>Calidris pusilla</i>	semipalmated sandpiper	G5				M	A	a	a	u				ISS declining/R5 Refuge List
<i>Catoptrophorus semipalmatus</i>	willet	G5		S1B,S3N	C	B/M	A	r	r				1	NAS Watchlist
<i>Limnodromus griseus</i>	short-billed dowitcher	G5				M	A	c	c	u				ISS declining/R5 Refuge List/NAS Watchlist
<i>Limosa haemastica</i>	Hudsonian godwit	G5				M	?							NAWCA priority
<i>Numenius phaeopus</i>	whimbrel	G5				M	A	o	o					ISS declining/R5 Refuge List
<i>Phalaropus tricolor</i>	Wilson's phalarope	G5				M	A	r	r					NAWCA priority
<i>Tryngites subruficollis</i>	buff-breasted sandpiper	G4				M	A	r	r					NAS Watchlist
<i>Pluvialis squatarola</i>	black-bellied plover	G5				M	A	c	u	c	o			ISS declining/R5 Refuge List
<i>Scolopax minor</i>	American woodcock	G5				B/M	N,T	y	u	u	u	r	35	ISS declining/R5 Refuge List/PIF SNE globally important
<i>Sterna antillarum</i>	least tern	G4		S2B,S2N	ST	B/M	A	y	u	c	u		11	state listed species, nesting managed on refuge
<i>Sterna dougallii</i>	roseate tern	G5	E	SHB,S2N	FE	B?/M	A	u	u	u			3	fed. listed
<i>Sterna hirundo</i>	common tern	G5				B/M	A	y	u	c	u		23	non-game bird man. concern
<u>CUCULIFORMES (Cuckoos and Allies):</u>														
<i>Coccyzus erythrophthalmus</i>	black-billed cuckoo	G5				B/M	A	y	u	u	u		44	PIF SNE regionally important
Draft CCP/EA Executive Summary- December, 2000														

Appendix A

Scientific Name	Common Name(s)	Global	Federal	RI Rank	RI Status	Sea. Use	Refuges	b	s	S	F	W	Pop./B BA	Source/Justification
<b>STRIGIFORMES (Owls):</b>														
<i>Asio flammeus</i>	short-eared owl	G5				M/W	A		u			o		non-game bird man. concern/NAS Watchlist
<b>PICIFORMES (Woodpeckers and Allies):</b>														
<i>Colaptes punctigula</i>	northern flicker	G5				B/M/W	N,T,S,C	y	c	c	c	u	118	non-game bird man. concern
<i>Melanerpes erythrocephalus</i>	red-headed woodpecker	G5		S1B,S1N		B/M	T,N	r		r				NAS Watchlist/PIF SNE globally important
<b>PASSERIFORMES (Perching Birds):</b>														
<i>Contopus virens</i>	eastern wood-pewee	G5				B/M	N,T	y	u	o	u		72	PIF SNE regionally important
<i>Catharus fuscescens</i>	veery	G5				B/M	N,T,C	y	o	o	o		86	non-game bird man. concern
<i>Hylocichla mustelina</i>	wood thrush	G5				B/M	N,T,C	y	u	c	u		97	NAS Watchlist/PIF SNE globally important
<i>Vireo flavifrons</i>	yellow-throated vireo	G5				B/M	?							NAWCA Priority
<i>Dendroica caerulescens</i>	black-throated blue warbler	G5		S1B,S3N	SE	B/M	A	r	r	o				NAS Watchlist/PIF SNE globally important
<i>Dendroica cerulea</i>	cerulean warbler	G4		S1B,S2N	ST	B/M							2	former candidate/NAS Watchlist/PIF SNE globally important
<i>Dendroica discolor</i>	prairie warbler	G5				B/M	A	y	u	u	u		80	NAS Watchlist/PIF SNE globally important
<i>Helmitheros vermivorus</i>	worm-eating warbler	G5		S2B,SZN	C	B/M	A		r	r			8	non-game bird man. concern/NAS Watchlist/PIF SNE globally important
<i>Protonotaria citrea</i>	prothonotary warbler	G5		S1B,S1N	C	B/M	A	r						NAS Watchlist
<i>Seiurus motacilla</i>	Louisiana waterthrush	G5				B/M							19	non-game bird man. concern/PIF SNE regionally important
<i>Vermivora chrysoptera</i>	golden-winged warbler	G4		SXB,S2N	SH	M	A	r	r	r				non-game bird man. concern/NAS Watchlist/PIF SNE globally important
<i>Vermivora pinus</i>	blue-winged warbler	G5				B/M	A	y	c	c	u		80	non-game bird man. concern/PIF SNE regionally important
<i>Wilsonia canadensis</i>	Canada warbler	G5				B/M	A	y	o	o	o		19	PIF SNE globally important
<i>Icteria virens</i>	yellow-breasted chat	G5				B/M	A	r	r	r				species off concern at RI refuges
<i>Spizella pusilla</i>	field sparrow	G5				B/M	N,T,C,S	y	u	u	u	o	72	non-game bird man. concern/PIF SNE regionally important
<i>Ammodramus caudacutus</i>	saltmarsh sharp-tailed sparrow	G5				B/M	A	y	o	u	u		26	NAS Watchlist/PIF SNE globally important
<i>Ammodramus henslowii</i>	Henslow's sparrow	G4		SX	SH(1940)									former candidate/PIF SNE globally important
<i>Ammodramus maritimus</i>	seaside sparrow	G4		S2B,SZN		B/M	A	y	o	u	u		10	NAS Watchlist/PIF SNE globally important
<i>Ammodramus nelsoni</i>	Nelson's sharp-tailed sparrow	G5				M								NAS Watchlist

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<i>Ammodramus savannarum</i>	grasshopper sparrow	G4		S1B,S1N		B/M	N,T	r	r	r			4	non-game bird man. concern
<i>Dolichonyx oryzivorus</i>	bobolink	G5				B/M	T,S,N	y	u	c	u		30	non-game bird man. concern/NAS Watchlist/PIF SNE globally important
<i>Sturnella magna</i>	eastern meadowlark	G5				B/M/W	S,T,N,C	y	c	c	c	u	33	non-game bird man. concern
<i>Pheucticus ludovicianus</i>	rose-breasted grosbeak	G5				B/M	A		o		o		53	PIF SNE regional priority
<b>MAMMALS</b>														
<b>Terrestrial mammals</b>														
<i>Sylvilagus transitionalis</i>	New England cottontail rabbit	G4		S2	C	R								former candidate
<i>Microtus pennsylvanicus proreus</i>	Block Island meadow vole	G5T1		G5T2Q		R								former candidate
<b>Whales</b>														
<i>Balaenoptera physalus</i>	finback whale	G2	E			P/M								fed. listed species in RI waters
<i>Eubalaena glacialis</i>	northern right whale	G2	E			P/M								fed. listed species in RI waters
<i>Megaptera novaeangliae</i>	humpback whale	G3	E			P/M								fed. listed species in RI waters
<b>Seals</b>														
<i>Halichoerus grypus</i>	gray seal	G4				W								marine mammal occurring on refuge
<i>Phoca groenlandica</i>	harp seal	G5				W								marine mammal occurring on refuge
<i>Phoca vitulina</i>	harbor seal	G5				W								marine mammal occurring on refuge
<b>VASCULAR PLANTS</b>														
<b>ANGIOSPERMS (Flowering Plants):</b>														
<i>Carex polymorpha</i>	variable sedge	G3		S1	SE								1	former candidate
<i>Scirpus longii</i>	Long's bulrush	G2		S1	SE								1	former candidate
<i>Scleria pauciflora var. caroliniana</i>	few-flowered nutrush	G5		S1	ST								3	NEPCoP regionally rare, occurs on refuge
<i>Scleria triglomerata</i>	whip nutrush	G5		S1	ST								2	NEPCoP regionally rare, occurs on refuge
<i>Isotria medeoloides</i>	small whorled pogonia	G2G3	E	S1	FE								1	fed. listed
<i>Platanthera ciliaris</i>	yellow fringed orchid	G5		S1	SE								1	NEPCoP regionally rare, occurs on refuge

Appendix A

Scientific Name	Common Name(s)	Global	Federal	RI Rank	RI Status	Sea. Use	Refuges	b	s	S	F	W	Pop./BBA	Source/Justification
<i>Amaranthus pumilus</i>	seabeach amaranth	G2	T	SH	SH								0 (1897)	fed. listed
<i>Polygonum glaucum</i>	seabeach knotweed	G3		S1									3	NEPCoP regionally rare, occurs on refuge
<i>Cardamine longii</i>	Long's bittercress	G3G4Q		S1	SE								1	former candidate
<i>Eupatorium leucolepis var. novae-angliae</i>	New England boneset	G5T1		S1	SE								5	former candidate
<i>Liatris scariosa var. novae-angliae</i>	New England blazing-star	G5?T3		S1	SE								4	former candidate
<i>Helianthemum dumosum</i>	bushy rockrose	G3		S1	SE								4	former candidate
<i>Hypericum adpressum</i>	creeping St. John's-wort	G2G3		S2	ST								4	former candidate
<i>Agalinis acuta</i>	sandplain gerardia	G1	E	S1	FE								1	fed. listed
<b>NATURAL COMMUNITIES</b>														
	Coastal Salt Pond/Marsh	G4		S3										
	Southern New England Salt Marsh	G5		S4										
	Sea Level Fen	G2G3		S1										
	Coastal Sand Dune Community	G5		S3										
	Morainic Grassland	G2		S1										
	New England Coastal Plain Pondshore	G3		S2										
	New England Pitch Pine Scrub Oak Barren	G2		S1										
<b>ANIMAL CONCENTRATION AREAS</b>														
	Anadromous Fish Concentration													
	Migratory Shorebird Concentration Area Seal Haulout Area													
	Waterbird Nesting Colony													
	Waterfowl Concentration Area													

Refuge: occurrence of birds on the Rhode Island National Wildlife Refuges from Birds of the National Wildlife Refuges of Rhode Island, 1996.

Refuge locations: N=Ninigret, B=Block Island, T=Truston Pond, C=Chafee Refuge, S=Sachuest Point, A = found on all Rhode Island Refuges

b=breeding, s = spring, S= summer, F=fall, W= winter; relative abundance: a=abundant, c=common, u=uncommon, o=occasional, r=rare;

Pop./BBA =known occurrences or populations in state from Natural Heritage Program; for breeding birds = number of probable or confirmed breeding bird atlas blocks in state.

# **Relevant Federal Laws**

### Emergency Wetland Resources Act of 1986

This Act authorized the purchase of wetlands from Land and Water Conservatio Fund moneys, removing a prior prohibition on such acquisitions. The Act also requires the Secretary to establish a National Wetlands Priority Conservation Plan, requires the States to include wetlands in their Comprehensive Outdoor Recreation Plans, and transfers to the Migratory Bird Conservation Fund amount equal to import duties on arms and ammunition.

### Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended

Public Law 93-205, approved December 28, 1973, repealed the Endangered Species Conservation Act of December 5, 1969 (P.L. 91-135, 83 Stat. 275). The 1969 act had amended the Endangered Species Preservation Act of October 15, 1966 (P.L. 89-669, 80 Stat. 926).

The 1973 Endangered Species Act provided for the conservation of ecosystems upon which threatened and endangered species of fish, wildlife, and plants depend, both through Federal action and by encouraging the establishment of State programs. The Act:

- Authorizes the determination and listing of species as endangered and threatened;
- Prohibits unauthorized taking, possession, sale, and transport of endangered species;
- Provides authority to acquire land for the conservation of listed species, using land and water conservation funds;
- Authorizes establishment of cooperative agreements and grants-in-aid to States that establish and maintain active and adequate programs for endangered and threatened wildlife and plants;
- Authorizes the assessment of civil and criminal penalties for violating the Act or regulations; and
- Authorizes the payment of rewards to anyone furnishing information leading to arrest and conviction for any violation of the Act of any regulation issued thereunder.

### Environmental Education Act of 1990 (20 USC 5501-5510; 104 Stat. 3325)

Public Law 101-619, signed November 16, 1990, established the Office of Environmental Education within the Environmental Protection Agency to develop and administer a Federal environ. education program.

Responsibilities of the Office include developing and supporting programs to improve understanding of the natural and developed environment, and the relationships between humans and their environment; supporting the dissemination of educational materials; developing and supporting training programs and environmental education seminars; managing a Federal grant program; and administering an environmental internship and fellowship program. The Office is required to develop and support environmental programs in consultation with other Federal natural resource management agencies, including the Fish and Wildlife Service.

### Executive Order 11988, Floodplain Management

The purpose of this Executive Order, signed May 24, 1977, is to prevent Federal agencies from contributing to the “adverse impacts associated with occupancy and modification of floodplains” and the “direct or indirect support of floodplain development.” In the course of fulfilling their respective authorities, Federal agencies “shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains.

### Fish and Wildlife Improvement Act of 1978

This act was passed to improve the administration of fish and wildlife programs and amends amends several earlier laws, including the Refuge Recreation Act, the National Wildlife Refuge Administration Act, and the Fish and Wildlife Act of 1956. It authorizes the Secretary to accept gifts and bequests of real and personal property on behalf of the United States. It also authorizes the use of volunteers on Service projects and appropriations to carry out volunteer programs.

## Historic Preservation Acts

There are various laws for the preservation of historic sites and objects.

*Antiquities Act (16 USC 431 - 433)* – The Act of June 8, 1906, (34 Stat. 225) authorizes the President to designate as National Monuments objects or areas of historic or scientific interest on lands owned or controlled by the United States. The Act required that a permit be obtained for examination of ruins, excavation of archaeological sites and the gathering of objects of antiquity on lands under the jurisdiction of the Secretaries of Interior, Agriculture, and Army, and provided penalties for violations.

*Archaeological Resources Protection Act (16 U.S.C. 470aa - 470ll)* — Public Law 96-95, approved October 31, 1979, (93 Stat. 721) largely supplanted the resource protection provisions of the Antiquities Act for archaeological items.

This Act established detailed requirements for issuance of permits for any excavation for or removal of archaeological resources from Federal or Indian lands. It also established civil and criminal penalties for the unauthorized excavation, removal, or damage of any such resources; for any trafficking in such resources removed from Federal or Indian land in violation of any provision of Federal law; and for interstate and foreign commerce in such resources acquired, transported or received in violation of any State or local law.

Public Law 100-588, approved November 3, 1988, (102 Stat. 2983) lowered the threshold value of artifacts triggering the felony provisions of the Act from \$5,000 to \$500, made attempting to commit an action prohibited by the Act a violation, and required the land managing agencies to establish public awareness programs regarding the value of archaeological resources to the Nation.

*Archeological and Historic Preservation Act (16 USC 469-469c)* — Public Law 86-523, approved June 27, 1960, (74 Stat. 220) as amended by Public Law 93-291, approved May 24, 1974, (88 Stat. 174) to carry out the policy established by the Historic Sites Act (see below), directed Federal agencies to notify the Secretary of the Interior whenever they find a Federal or Federally assisted, licensed or permitted project may cause loss or destruction of significant scientific, prehistoric or archaeological data. The Act authorized use of appropriated, donated and/or transferred funds for the recovery, protection and preservation of such data.

*Historic Sites, Buildings and Antiquities Act (16 USC 461-462, 464-467)* — The Act of August 21, 1935, (49 Stat. 666) popularly known as the Historic Sites Act, as amended by Public Law 89-249, approved October 9, 1965, (79 Stat. 971) declared it a national policy to preserve historic sites and objects of national significance, including those located on refuges. It provided procedures for designation, acquisition, administration and protection of such sites. Among other things, National Historic and Natural Landmarks are designated under authority of this Act. As of January, 1989, 31 national wildlife refuges contained such sites.

*National Historic Preservation Act of 1966 (16 U.S.C. 470-470b, 470c-470n)* — Public Law 89-665, approved October 15, 1966, (80 Stat. 915) and repeatedly amended, provided for preservation of significant historical features (buildings, objects and sites) through a grant-in-aid program to the States. It established a National Register of Historic Places and a program of matching grants under the existing National Trust for Historic Preservation (16 U.S.C. 468-468d).

The Act established an Advisory Council on Historic Preservation, which was made a permanent independent agency in Public Law 94-422, approved September 28, 1976 (90 Stat. 1319). That Act also created the Historic Preservation Fund. Federal agencies are directed to take into account the effects of their actions on items or sites listed or eligible for listing in the National Register.

As of January, 1989, 91 historic sites on national wildlife refuges have been placed on the National Register.

### Land and Water Conservation Fund Act of 1948

This act provides funding through receipts from the sale of surplus federal land, appropriations from oil and gas receipts from the outer continental shelf, and other sources of for land acquisition under several authorities. Appropriations from the fund may be used for matching grants to states for outdoor recreation projects and for land acquisition by various federal agencies, including the Fish and Wildlife Service.

**Migratory Bird Conservation Act of 1929** (16 U.S.C. 715-715d, 715e, 715f-715r)

This Act established the Migratory Bird Conservation Commission which consists of the Secretaries of the Interior (chairman), Agriculture, and Transportation, two members from the House of Representatives, and an ex-officio member from the state in which a project is located. The Commission approves acquisition of land and water, or interests therein, and sets the priorities for acquisition of lands by the Secretary for sanctuaries or for other management purposes. Under this Act, to acquire lands, or interests therein, the state concerned must consent to such acquisition by legislation. Such legislation has been enacted by most states.

**Migratory Bird Hunting and Conservation Stamp Act** (16 U.S.C. 718-718j, 48 Stat. 452), as amended

The “Duck Stamp Act,” as this March 16, 1934, authority is commonly called, requires each waterfowl hunter 16 years of age or older to possess a valid Federal hunting stamp. Receipts from the sale of the stamp are deposited in a special Treasury account known as the Migratory Bird Conservation Fund and are not subject to appropriations.

**National and Community Service Act of 1990** (42 USC 12401; 104 Stat. 3127)

Public Law 101-610, signed November 16, 1990, authorizes several programs to engage citizens of the U.S. in full- and/or part-time projects designed to combat illiteracy and poverty, provide job skills, enhance educational skills, and fulfill environmental needs. Several provisions are of particular interest to the U.S. Fish and Wildlife Service.

*American Conservation and Youth Service Corps* — As a Federal grant program established under Subtitle C of the law, the Corps offers an opportunity for young adults between the ages of 16-25, or in the case of summer programs, 15-21, to engage in approved human and natural resources projects which benefit the public or are carried out on Federal or Indian lands.

To be eligible for assistance, natural resources programs will focus on improvement of wildlife habitat and recreational areas, fish culture, fishery assistance, erosion, wetlands protection, pollution control and similar projects. A stipend of not more than 100 percent of the poverty level will be paid to participants. A Commission established to administer the Youth Service Corps will make

grants to States, the Secretaries of Agriculture and Interior and the Director of ACTION to carry out these responsibilities.

*National and Community Service Act* — Will make grants to States for the creation of full-time and/or part-time programs for citizens over 17 years of age. Programs must be designed to fill unmet educational, human, environmental, and public safety needs. Initially, participants will receive post-employment benefits of up to \$1000 per year for part-time and \$2500 for full-time participants.

*Thousand Points of Light* — Creates a non-profit Points of Light Foundation to administer programs to encourage citizens and institutions to volunteer in order to solve critical social issues, and to discover new leaders and develop institutions committed to serving others.

**National Environmental Policy Act of 1969** (P.L. 91-190, 42 U.S.C. 4321-4347, January 1, 1970, 83 Stat. 852) as amended by P.L. 94-52, July 3, 1975, 89 Stat. 258, and P.L. 94-83, August 9, 1975, 89 Stat. 424).

Title I of the 1969 National Environmental Policy Act (NEPA) requires that all Federal agencies prepare detailed environmental impact statements for “every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment.”

The 1969 statute stipulated the factors to be considered in environmental impact statements, and required that Federal agencies employ an interdisciplinary approach in related decision-making and develop means to ensure that unquantified environmental values are given appropriate consideration, along with economic and technical considerations.

Title II of this statute requires annual reports on environmental quality from the President to the Congress, and established a Council on Environmental Quality in the Executive Office of the President with specific duties and functions.



## **National Wildlife Refuge System Administration Act of 1966** (16 U.S.C. 668dd-668ee) as amended

This Act defines the National Wildlife Refuge System as including wildlife refuges, areas for protection and conservation of fish and wildlife which are threatened with extinction, wildlife ranges, game ranges, wildlife management areas, and waterfowl production areas. The Secretary is authorized to permit any use of an area provided such use is compatible with the major purposes for which such area was established. The purchase consideration for rights-of-way go into the Migratory Bird Conservation Fund for the acquisition of lands. By regulation, up to 40% of an area acquired for a migratory bird sanctuary may be opened to migratory bird hunting unless the Secretary finds that the taking of any species of migratory game birds in more than 40% of such area would be beneficial to the species. The Act requires an Act of Congress for the divestiture of lands in the system, except (1) lands acquired with Migratory Bird Conservation Commission funds, and (2) lands can be removed from the system by land exchange, or if brought into the system by a cooperative agreement, then pursuant to the terms of the agreement.

## **National Wildlife Refuge System Improvement Act of 1997**

Public Law 105-57, amends the National Wildlife System Act of 1966 (16 U.S.C. 668dd-ee), providing guidance for management and public use of the Refuge System. The Act mandates that the Refuge System be consistently directed and managed as a national system of lands and waters devoted to wildlife conservation and management.

The Act establishes priorities for recreational uses of the Refuge System. Six wildlife-dependent uses are specifically named in the Act: hunting, fishing, wildlife observation and photography, and environmental education and interpretation. These activities are to be promoted on the Refuge System, while all non-wildlife dependant uses are subject to compatibility determinations.

A compatible use is one which, in the sound professional judgement of the Refuge Manger, will not materially interfere with or detract from fulfillment of the Refuge System Mission or refuge purpose(s).

As stated in the Act, "The mission of the System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans."

The Act also requires development of a comprehensive conservation plan for each refuge and management of each refuge consistent with the plan. When writing CCP, planning for expanded or new refuges, and when making management decisions, the Act requires effective coordination with other Federal agencies, state fish and wildlife or conservation agencies, and refuge neighbors. A refuge must also provide opportunities for public involvement when making a compatibility determination or developing a CCP.

## **North American Wetlands Conservation Act** (103 Stat. 1968; 16 U.S.C. 4401-4412)

Public Law 101-233, enacted December 13, 1989, provides funding and administrative direction for implementation of the North American Waterfowl Management Plan and the Tripartite Agreement on wetlands between Canada, U.S. and Mexico.

The Act converts the Pittman-Robertson account into a trust fund, with the interest available without appropriation through the year 2006 to carry out the programs authorized by the Act, along with an authorization for annual appropriation of \$15 million plus an amount equal to the fines and forfeitures collected under the Migratory Bird Treaty Act.

Available funds may be expended, upon approval of the Migratory Bird Conservation Commission, for payment of not to exceed 50 percent of the United States share of the cost of wetlands conservation projects in Canada, Mexico, or the United States (or 100 percent of the cost of projects on Federal lands). At least 50 percent and no more than 70 percent of the funds received are to go to Canada and Mexico each year.

A North American Wetlands Conservation Council is created to recommend projects to be funded under the Act to the Migratory Bird Conservation Commission. The Council is to be composed of the Director of the Service, the Secretary of the National Fish and Wildlife Foundation, a State fish and game agency director from each Flyway, and three representatives of different non-profit organizations participating in projects under the Plan or the Act. The Chairman of the Council and one other member serve ex officio on the Commission for consideration of the Council's recommendations.

The Commission must justify in writing to the Council and, annually, to Congress, any decisions not to accept Council recommendations.

### **Oil Pollution Act of 1990**

Public Law 101-380 (33 U.S.C. 2701 et seq.; 104 Stat. 484) established new requirements and extensively amended the Federal Water Pollution Control Act (33 U.S.C. 1301 et. seq.) to provide enhanced capabilities for oil spill response and natural resource damage assessment by the Service. It required Service consultation on developing a fish and wildlife response plan for the National Contingency Plan, input to Area Contingency Plans, review of Facility and Tank Vessel Contingency Plans, and to conduct damage assessments associated with oil spills. The following are the pertinent provisions.

Title I, section 1006, provided that Federal trustees shall assess natural resource damages for natural resources under their trusteeship. Federal trustees may, upon request from a State or Indian tribe, assess damages to natural resources for them as well. Trustees shall develop and implement a plan for the restoration, rehabilitation, replacement, or acquisition of the equivalent of natural resources under their trusteeship.

Title I, section 1011, provides that trustees are to be consulted on the appropriate removal action to be taken in connection with any discharge of oil.

Title I, section 1012, provided for the uses of the oil pollution fund. In addition to response costs, the fund may be used without appropriations to pay the costs of assessments, as well as to pay claims for natural resource damages if there are no funds or insufficient funds from a responsible party. (A claims procedure was to be developed under section 1013.)

This section also stipulated deadlines for the submission of removal cost claims and damage claims.

Title IV, section 4202, amended subsection 311(j) of the Federal Water Pollution Control Act with respect to the National Planning and Response System. It defined area committees and area contingency plans, and requirements and deadlines for agencies. Under this section, the Service is required to generate a list of all equipment, including fire fighting equipment, as well as personnel and any other equipment and supplies that could be used to expedite the removal of oil or mitigation of a spill.

One aspect of particular interest to the Service involves the identification of ecologically sensitive areas and the preparation of scientific monitoring and evaluation plans. Research conducted by the Service is to be directed and coordinated by the National Wetland Research Center.

### **Refuge Recreation Act of 1962**

This Act authorizes the Secretary of the Interior to administer refuges, hatcheries, and other conservation areas for recreational use, when such uses do not interfere with the area's primary purposes. It authorizes construction and maintenance of recreational facilities and the acquisition of land for incidental fish and wildlife oriented recreational development or protection of natural resources. It also authorizes the charging of fees for public uses.

### **Refuge Revenue Sharing Act (16 U.S.C. 715s)**

Section 401 of the Act of June 15, 1935, (49 Stat. 383) provided for payments to counties in lieu of taxes, using revenues derived from the sale of products from refuges.

Public Law 93-509, approved December 3, 1974, (88 Stat. 1603) required that moneys remaining in the fund after payments be transferred to the Migratory Bird Conservation Fund for land acquisition under provisions of the Migratory Bird Conservation Act.

Public Law 95-469, approved October 17, 1978, (92 Stat. 1319) expanded the revenue sharing system to include National Fish Hatcheries and Service research stations. It also included in the Refuge Revenue Sharing Fund receipts from the sale of salmonid carcasses. Payments to counties were established as:

- 1) on acquired land, the greatest amount calculated on the basis of 75 cents per acre, three-fourths of one percent of the appraised value, or 25 percent of the net receipts produced from the land; and
- 2) on land withdrawn from the public domain, 25 percent of net receipts and basic payments under Public Law 94-565 (31 U.S.C. 1601-1607, 90 Stat. 2662), payment in lieu of taxes on public lands.

This amendment also authorized appropriations to make up any difference between the amount in the Fund and the amount scheduled for payment in any year. The stipulation that payments be used for schools and roads was removed, but counties were required to pass payments along to other units of local government within the county which suffer losses in revenues due to the establishment of Refuges.

#### **Transfer of Certain Real Property for Wildlife Conservation purposes Act of 1948**

This Act provides that upon determination by the Administrator of the General Services Administration, real property no longer needed by a Federal agency can be transferred, without reimbursement, to the Secretary of the Interior if the land has particular value for migratory birds, or to a State agency for other wildlife conservation purposes.

#### **Rehabilitation Act of 1973 (29 U.S.C. 794 )as amended**

Title 5 of P.L. 93-112 (87 Stat. 355), signed October 1, 1973, prohibits discrimination on the basis of handicap under any program or activity receiving Federal financial assistance.

#### **Youth Conservation Corps Act (16 U.S.C. 1701-1706, 84 Stat. 794)**

Public Law 91-378, approved August 13, 1970, declares the YCC pilot program a success and establishes permanent programs within the Departments of Interior and Agriculture for young adults who have attained the age of 15, but not the age of 19, to perform specific tasks on lands and waters administered under jurisdiction of these Secretaries. Within the Fish and Wildlife Service, YCC participants perform various tasks on National Wildlife Refuges, National Fish Hatcheries, research stations, and other facilities.

The legislation also authorizes the Secretary of Interior and the Secretary of Agriculture to establish a joint grant program to assist States employing young adults on non-Federal public lands and waters throughout the U.S.

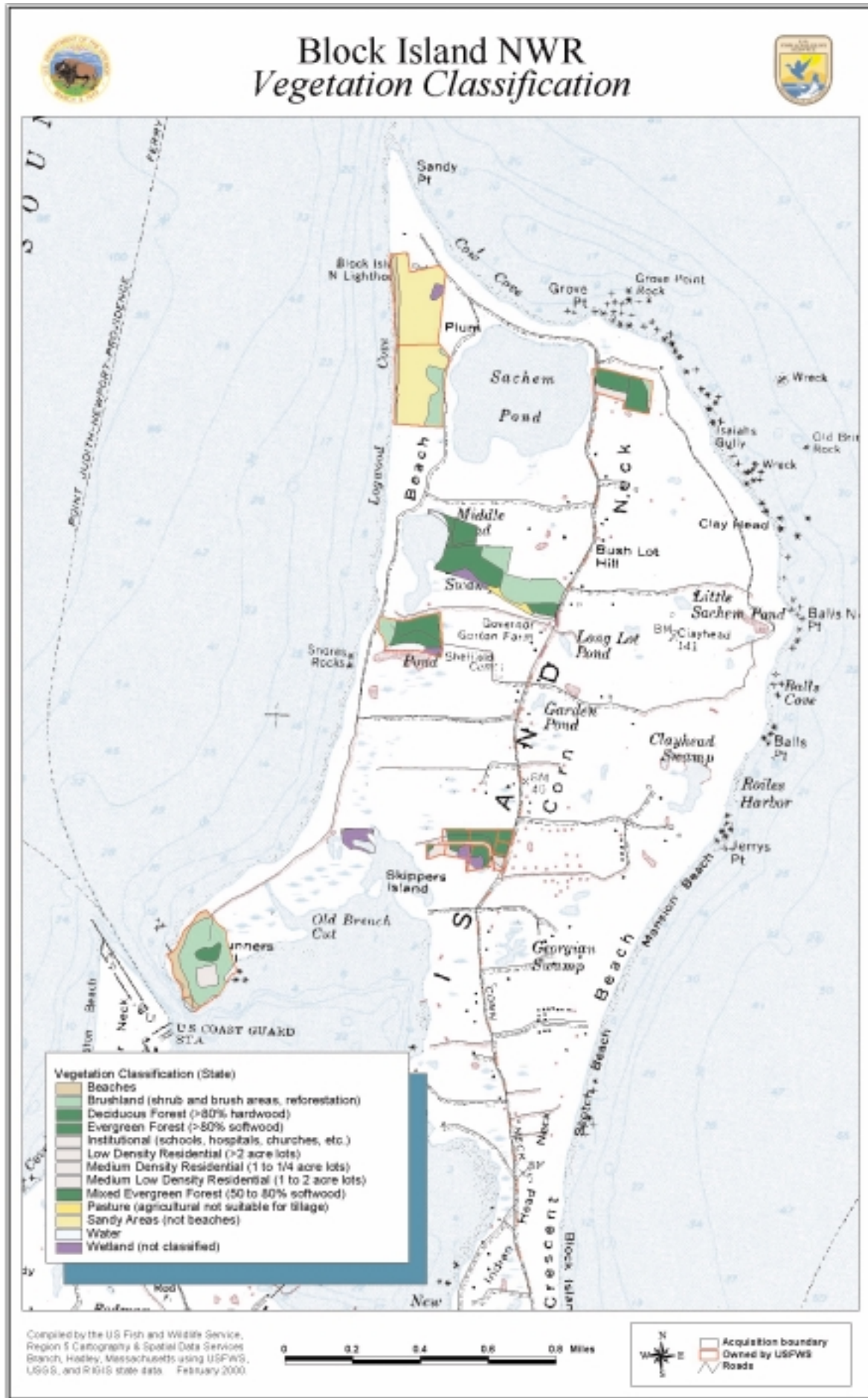
Requires the Secretaries of Interior and Agriculture to prepare a joint report to the President and Congress prior to April 1 of each year.

#### **Wilderness Act of 1964**

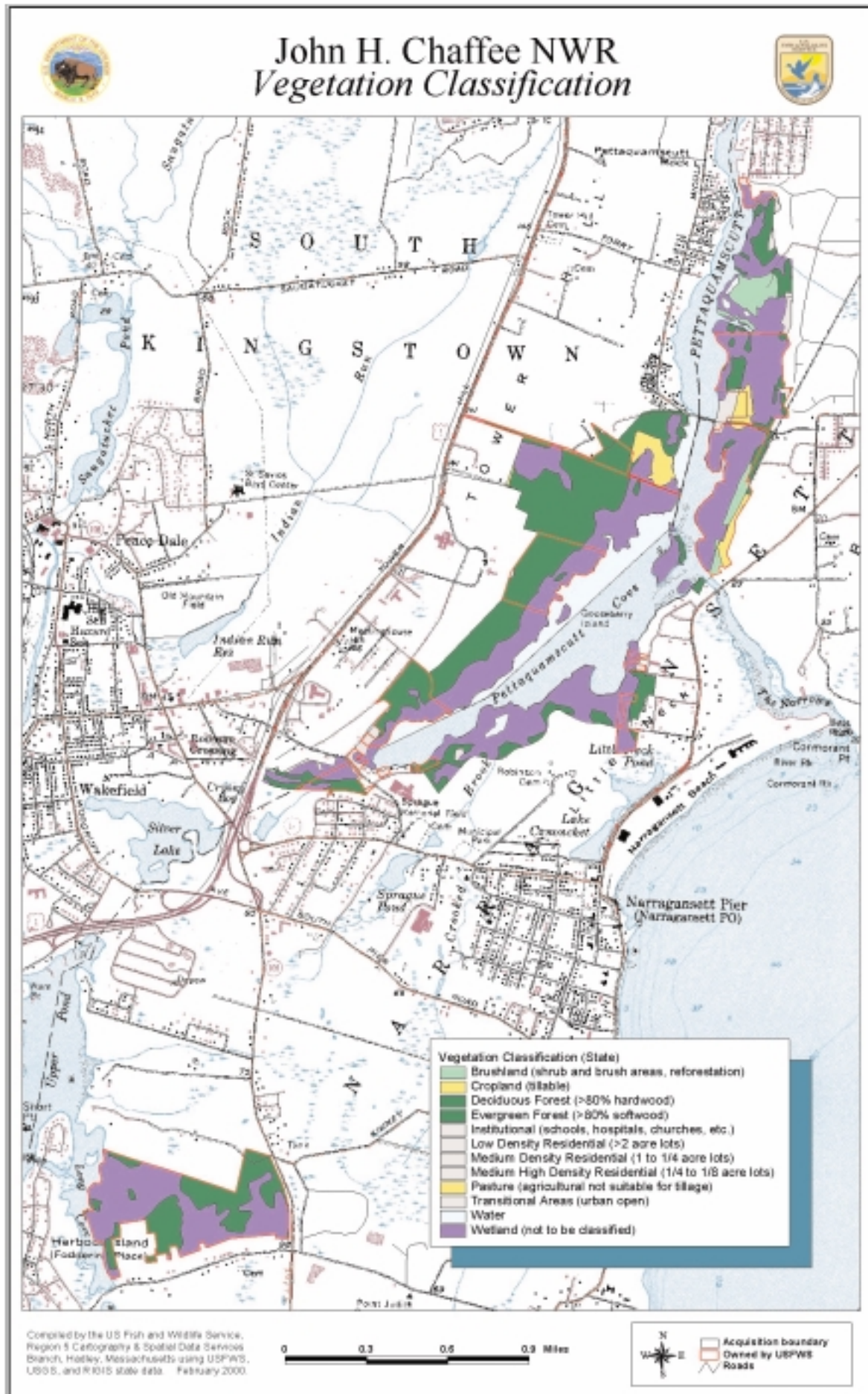
Public Law 88-577, approved September 3, 1964, directed the Secretary of the Interior, within 10 years, to review every roadless area of 5,000 or more acres and every roadless island (regardless of size) within National Wildlife Refuge and National Park Systems for inclusion in the National Wilderness Preservation System.



# Refuge Cover Type Maps

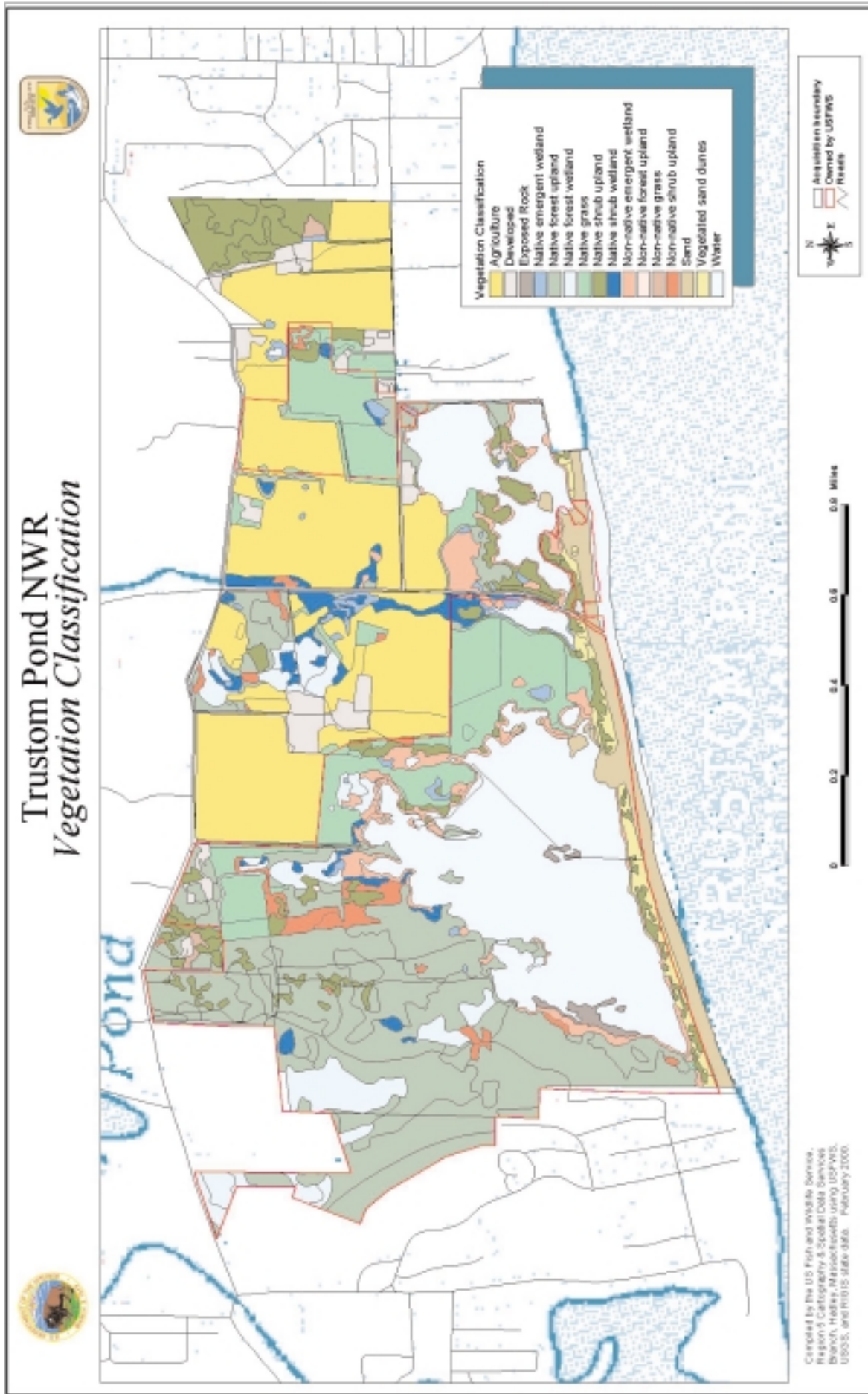














# Compatibility Determinations

## Compatibility Determination Rhode Island National Wildlife Refuge Complex

### Uses

Hunting, fishing, wildlife observation and photography, and environmental education and interpretation were identified as priority, wildlife-dependent recreational uses by the National Wildlife Refuge System Improvement Act of 1997 (Refuge Improvement Act; PL. 105-57). This compatibility determination addresses all of these uses.

### Refuge names, establishing and acquisition authorities, and purposes

Each National Wildlife Refuge is established under specific legislation. Similarly, each refuge has one or more specific legal purposes for which it was established. The establishing legislation and purposes for each refuge in the Rhode Island National Wildlife Refuge Complex (Rhode Island Refuge Complex) are given below.

#### Block Island National Wildlife Refuge

Date Established: November 2, 1973

Establishing and Acquisition Authorities: Block Island National Wildlife Refuge (Block Island Refuge) was established under 16 USC 667b, Public Law 80 - 537, an Act Authorizing the Transfer of Certain Real Property for Wildlife, or other Purposes.

Purpose for which Refuge was Established: Lands acquired under 16 USC 667b, Public Law 80-537 were for..."particular value in carrying out the national migratory bird management program."

#### Ninigret National Wildlife Refuge

Date Established: 12 August 1970

Establishing and Acquisition Authorities: Ninigret National Wildlife Refuge (Ninigret Refuge) was established on 12 August, 1970 under 16 USC 667b, Public Law 80 - 537, An Act Authorizing the Transfer of Certain Real Property for Wildlife, or other Purposes. Remaining parcels of land were established under the Migratory Bird Conservation Act 16 USC. 715d.

Purpose(s) for which Refuge was Established: Lands acquired under 16 USC 667b, Public Law 80- 537 were for..."particular value in carrying out the national migratory bird management program." Additional lands acquired under the Migratory Bird Conservation Act (16 USC 715d) were ..."for use as an inviolate sanctuary, or for any other management purpose, for migratory birds."

#### John H. Chafee National Wildlife Refuge

Date Established: November 5, 1988 (originally established as Pettaquamscutt Cove National Wildlife Refuge)

Establishing and Acquisition Authorities: Amendment to the Emergency Wetlands Resources Act (102 Stat. 3177) and the National Wildlife Refuge Administrative Act of 1966, as amended (16 USC 668dd - 668ee; 80 STAT 927).

Purpose(s) for which Refuge was Established: The purposes for which the Refuge was established and managed are: "(1) to protect and enhance the populations of black ducks and other waterfowl, geese, shorebirds, terns, wading birds, and other wildlife using the refuge; (2) to provide for the conservation and management of fish and wildlife within the refuge; (3) to fulfill the international treaty obligations of the United States respecting fish and wildlife; and (4) to provide opportunities for scientific research, environmental education, and fish and wildlife-oriented recreation" (102 Stat. 3177).

## Sachuest Point National Wildlife Refuge

Date Established: November 3, 1970

Establishing and Acquisition Authorities: Sachuest Point National Wildlife Refuge (Sachuest Point Refuge) was established on November 3, 1970 under the Fish and Wildlife Act of 1956, and the Refuge Recreation Act of 1962.

Purpose(s) for which Refuge was Established: Sachuest Point Refuge was established "... for the development, management, advancement, conservation, and protection of fish and wildlife resources" (Fish and Wildlife Act of 1956) and for "(1) incidental fish and wildlife-oriented recreational development; (2) protection of natural resources, and; (3) conservation of endangered or threatened species" (Refuge Recreation Act of 1962).

## Trustom Pond National Wildlife Refuge

Date Established: August 15, 1974

Establishing and Acquisition Authorities: Trustom Pond National Wildlife Refuge was established on 15 August 1974 under the authority of the Migratory Bird Conservation Act, 16 USC 715-715R and by the Refuge Recreation Act, 16 USC c - 1.

Purpose(s) for which Refuge was Established: For lands acquired under the Migratory Bird Conservation Act, as amended, the purpose of the acquisition is "... for uses as an inviolate sanctuary, or for any other management purpose, for migratory birds." 16 USC 715d (Migratory Bird Conservation Act) and for "... (1) incidental fish and wildlife-oriented recreational development; (2) the protection of natural resources; and (3) the conservation of endangered or threatened species..." as authorized by the Refuge Recreation Act, 16 USC. c - 1.

## National Wildlife Refuge System Mission

The Mission of the National Wildlife Refuge System is "to administer a national network of lands and waters for the conservation of, management, and where appropriate, restoration of fish, wildlife, and plant resource and their habitats within the United States for the benefit of present and future generations of Americans."

## Description of Uses

### Environmental education

Environmental education includes activities which seek to increase public knowledge and understanding of wildlife and the importance of habitat protection and management. Typical activities include teacher or Refuge staff guided onsite field trips, offsite programs in classrooms, and nature study, such as teacher and student workshops and curriculum structured instruction, and interpretation of wildlife resources. Additionally, environmental education utilizes interpretive infrastructure such as kiosks, sign panels and support facilities such as trails, visitor contact station, and visitor centers (see Interpretation section).

Under the Service's Proposed Action in the draft Comprehensive Conservation Plan (CCP), a Visitor Services Plan for the entire Refuge Complex would be developed with cooperating partners to identify mutual goals for environmental education and interpretive opportunities. Measures would include a piping plover program education and outreach plan, distribution of associated literature through RIDEM beach use channels and their permitting process at State beach and park entrance stations, development of major piping plover and grassland restoration exhibits at the new Rhode Island Refuge Complex Visitor Center (RIVC), and integration of the program into local school curriculums. Also, the Refuge staff would actively

cooperate in an extension service for local landowners interested in grassland work.

#### *Block Island Refuge*

Due to the remoteness of the Refuge, no formal environmental education activities currently occur at Block Island Refuge. An unknown number of educational walks are led each year by The Nature Conservancy (TNC) on Block Island. An unknown number of teacher-led school group trips also occur on the Refuge.

The CCP Proposed Action would initiate a formal partnership with TNC to facilitate the sharing of resources, assist in curriculum development and implementation, develop the Beane Point facility as a classroom laboratory or for housing seasonal educators, and develop a Refuge Complex Visitor Services Plan to provide strategic guidance for developing environmental education programs.

#### *Ninigret Refuge*

Currently, much of the environmental education is conducted by the Frosty Drew Nature Center under a Memorandum of Agreement. Frosty Drew is a private non-profit education facility located adjacent to the Refuge in Charlestown's Ninigret Park. The Center's interpretive and environmental education programs are based at the Refuge and consist of outdoor classroom activities held throughout the year for school and scout groups, regularly scheduled public nature tours, and a nature day camp ("Nature Week") for children during the summer.

All environmental education programs on the Refuge are conducted by naturalists from this organization and knowledgeable members of the Refuge Complex's volunteer cadre. During the last several years, approximately 2500 students from local schools have participated in outdoor classroom activities in any given year. Group numbers average 42 students per class, but teachers will take up to 50 students. More often than not, organized groups use the Refuge only for access to Ninigret Pond.

The CCP proposed action would increase the program substantially. While we would continue the cooperative venture with Frosty Drew, to encompass the entire program, we would construct an outdoor classroom site featuring grassland and salt pond ecology, further develop the Volunteer environmental education corps to help with program implementation (shared with Trustom Pond) and develop resource management education sites along the "Trail Through Time" at Ninigret Refuge. In addition, development of a Refuge Complex Visitor Services Plan would provide strategic direction for environmental education programs.

#### *Chafee Refuge*

No environmental education activities are known to occur on this unstaffed refuge. However, we consider Chafee Refuge to have outstanding environmental educational potential, especially considering local conservation partners such as: the Narrow River Preservation Association, the South County Land Trust, the University of Rhode Island, and numerous public and private schools. Environmental education would compliment ecotourism-related uses, as well as kayaking and canoeing, which are becoming increasingly popular in the waters on and adjacent to the Refuge.

The CCP Proposed Action includes cooperation with RI DEM to educate the public on the impacts of excessive motorboat and jet ski speed on the Refuge shoreline and wildlife. Additionally, we would cooperate with local schools and partners to develop a curriculum for classroom use featuring the Narrow River estuary and Pettaquamscutt Cove, and develop a formal partnership with the South County Museum to conduct curriculum-based environmental education programs. In addition, development of a Refuge Complex Visitor Services Plan would provide strategic direction for environmental education programs.

*Sachuest Point Refuge*

Environmental education activities at Sachuest Point Refuge include numerous visits by students and the general public. In 1988, approximately seventeen presentations on such topics as endangered species, the National Wildlife Refuge System, marine shore life, and bird natural history were conducted. Nearly 650 students participated in Refuge programs that year, but that level of involvement has not held in recent years, due to a lack of staffing. Currently, an unknown number of teacher-led school groups take advantage of the three miles of trails on the Refuge.

The CCP Proposed Action would increase this program substantially. The Visitor Center would be rehabilitated to increase its effectiveness as an environmental education facility. Renovations would include improved exhibits. We would also develop a formal partnership with the Norman Bird Sanctuary to facilitate sharing of resources. Finally, we would cooperate with local Middletown and Newport schools to develop curriculum-based programs (featuring Refuge resources), and establish a Sachuest Point Volunteer Environmental Education Corps. In addition, development of a Refuge Complex Visitor Services Plan would provide strategic direction for environmental education programs.

*Trustom Pond Refuge*

Environmental education activities at Trustom Pond Refuge currently include general public use and student visits. In 1993, seventeen classes were held at Trustom Pond. An outdoor education area was established on Moonstone Beach to educate visitors and school children about endangered species and barrier beach management. The trail system is also used by school groups to learn about Refuge resources. In the past, school groups sampled aquatic plant and animal communities with dip nets from the dock at Farm Pond. The CCP Proposed Action provides for development of a volunteer environmental

education corps to help with program implementation at Trustom Pond Refuge. In addition, development of a Refuge Complex Visitor Services Plan would cover topics such as: curriculum-based programs for local schools, programs for grassland restoration and coastal salt pond ecology, and additional outdoor classroom sites. In addition, development of a Refuge Complex Visitor Services Plan would provide strategic direction for environmental education programs.

**Fishing**

Fishing includes the following activities: surf fishing, shoreline fishing, rock fishing, spear fishing, crabbing and shellfish harvesting (both commercial and recreational). There is no fresh water fishing on any of the Rhode Island Complex Refuges.

*Block Island Refuge*

Due to the small acreage of the Refuge, surf fishing is limited to small sections of the West Beach, the north end of the island (Sandy Point) and on or near the Beane Point parcel. Access to these areas are by foot, boat, or along the beach in off-road vehicles (ORVs).

The CCP Proposed Action would close (to ORV access) portions of Block Island Refuge beach above the mean high tide line from March 1 - Sept. 30 each year to protect nesting and migrating shorebirds and to reduce physical impacts to beach and dunes. Only pedestrian traffic would be allowed. Other proposals include determining human disturbance to colonial nesting birds by surf fishing presence and adapting a comprehensive public use policy after completion of a monitoring study.

*Ninigret Refuge*

Surf fishing occurs on the barrier beach parcel and is accessible by 4WD and foot traffic. Additionally,



salt water fishing and shellfish harvesting is popular in Ninigret Pond from both boats and the Refuge shoreline. Commercial harvesters access the Pond at entry points after crossing the Refuge by foot from both U.S. Route 1 and the East Parking Lots.

The CCP Proposed Action would continue to allow access for recreational and commercial shellfishing in Ninigret Pond on designated trails only, and in accordance with state regulations. Those engaged in commercial shellfishing would be required to obtain a special use permit. Shoreline fishing in Ninigret Pond would be allowed at certain established access points to prevent wildlife disturbance and shoreline erosion.

#### *Chafee Refuge*

Saltwater fishing occurs in the marsh coves of the Narrow River from recreational users, and, to a limited extent, from accessible shoreline areas (Middlebridge Road). It is likely that, while the waters of Narrow River are currently closed to shellfish harvesting, the potential for this use in the future exists.

The CCP Proposed Action would provide fishing from boats or from the shoreline, but only from designated access points to reduce erosion and impact on Refuge saltmarsh. Additionally, a barrier-free fishing structure would be built, and we would work with RI DEM to educate the public on the impact of excessive motorboat and jet ski speed on Refuge shoreline and wildlife.

#### *Sachuest Point Refuge*

Surf fishing is popular along the Refuge perimeter (approximately 3.5 miles) in the Atlantic Ocean and the Sakonnet River for striped bass, bluefish, tautog, and scup. Approximately 8,817 fishing visits were recorded in 1990, 17% of all public use on the Refuge. More recent counts of fishing visits are not available. Species like striped bass and bluefish are migratory and fishing pressure is

linked to presence of fish, whereas scup and tautog are resident to the area and fishing pressure is fairly constant from Spring through the Fall.

Since the State of Rhode Island owns all tidal land below mean high water, fishing technically occurs on state land, while only access is provided through the Refuge. Surf fishers have been granted 24 hour access to the Refuge for the purpose of fishing. The exception to this policy is spear fishing, where divers utilize the Refuge to access the rocky shoreline to “hunt” fish with what is essentially an underwater firearm. Under the CCP Proposed Action, spearguns would have to be unloaded and encased while being transported across the Refuge.

The CCP Proposed Action would continue to allow surf fishing, day and night, in the Atlantic Ocean and the Sakonnet River from Refuge land in accordance with state regulations. Shoreline access points would be designated and established to control erosion impacts and better enforce restrictions. Additionally, we would initiate a study to determine the impacts to wildlife from night time fishing, and we would also construct a barrier-free fishing platform, if feasible.

#### *Trustom Pond Refuge*

Surf fishing occurs along the shoreline on the barrier beach section of the Refuge. Also, crabbing is popular in both Mud Pond and Cards Pond. Trustom Salt Pond is closed to fishing and there is no known, unauthorized use for fishing or shellfish harvesting.

The CCP Proposed Action would continue to authorize surf fishing from September 16 to March 31, in accordance with state regulations and by pedestrian traffic only. Trustom Pond itself would remain closed to fishing. No vehicles are allowed on the Refuge beach, above mean high tide, at any time.

## Hunting, deer

White-tailed deer (*Odocoileus virginianus*) exist in 45 of the contiguous United States. Climatically speaking, they are remarkably adaptive and tolerant of people and their practices. This adaptability is reflected in the diversity of their browser/grazer diet. Hessleton (1987) states that deer management is accomplished through three general methods: (1) manipulation of populations via hunting season length or bag limits; (2) manipulation of habitat to increase, decrease, or maintain deer abundance; and (3) people management. Of the three options, “people management” presents the greatest challenges to wildlife managers today.

Deer are present on a regular basis at all five Refuges in the Complex, though the numbers fluctuate depending upon season and adjacent land activities. There have been incidents of deer poaching on or near Refuge lands, but the problem is sporadic, at worse. Currently, there are no controlled hunts on any of the Rhode Island Complex Refuges. Deer management plans, as outlined below, would be implemented if hunting is recommended as a future management program. A separate Environmental Assessment and full compatibility determination would need to be completed for deer hunting.

The CCP Proposed Action includes:

**Block Island Refuge:** cooperate with partners to develop a deer management plan for the Block Island Focus Area. This plan would need to address deer population control based on limits of acceptable change to habitat objectives (i.e. tick control, vehicle collisions, etc.). Once impacts exceed habitat objectives, deer population objectives would be sought in cooperation with adjacent land owners, local government, RI DEM, and partner organizations.

**Ninigret Refuge:** work with adjacent landowners to develop a comprehensive deer management plan

for the greater Charlestown area. This plan would identify the need for deer population control based on established limits of acceptable change to habitat objectives. Once impacts exceed habitat objectives, deer population objectives would be sought in cooperation with adjacent land owners, local government, RIDEM and partner organizations.

**Chafee Refuge:** work with adjacent landowners to develop a comprehensive deer management plan for the Foddering Farms tract (128 acres) with a proposal similar to the other Complex Refuges.

**Sachuest Point Refuge:** none planned

**Trustom Pond Refuge:** develop a comprehensive deer management plan similar to the one proposed for the other Refuges.

## Hunting, Migratory Bird (waterfowl)

Migratory birds are managed on a flyway basis. Hunting regulations are established in each state based on flyway data. Currently, waterfowl hunting occurs on or adjacent to Ninigret, Chafee, and Trustom Pond Refuges.

### *Ninigret Refuge*

Currently, the only authorized hunting that occurs near Ninigret Refuge is state-regulated waterfowl hunting in the waters of Ninigret Pond. The CCP Proposed Action would allow waterfowl hunting and associated dog retrieval in Coon Cove and in the marshes along the barrier beach parcel, by boat access only. This hunting would be administered by RI DEM under Refuge regulations.

### *Chafee Refuge*

Waterfowl hunting is a traditional public use in the waters of Pettaquamscutt Cove. While no hunting is as yet authorized on Refuge property, the proposed action in the CCP addresses a cooperative effort with RI DEM to establish the

entire Pettaquamscutt Cove as a waterfowl management area. Opportunities to provide a watchable waterfowl “rest area”, while also providing areas for hunting, would be evaluated in a management area plan. The Service would consider boat hunting of waterfowl, if recommended in the Waterfowl Management Plan, allowing RI DEM to administer a limited waterfowl hunt, subject to Refuge regulations.

#### *Sachuest Point Refuge*

Waterfowl (sea duck) hunting by boat is a traditional public use in the Atlantic Ocean/Sakonnet River waters adjacent to Sachuest Point Refuge. Currently, there is limited use, although over the past two years, there has been an increased interest by the public to utilize a State law that allows hunting from land below the mean high water line. This essentially opens areas along the rocky shoreline of the Refuge from which numerous sea duck species (including harlequin) can be effectively hunted.

The CCP Proposed Action would work with RI DEM, to designate a “no hunting” zone off the eastern side of the Refuge, or approximately 200 yds off Island Rocks, other promontories and shoreline, to provide a sufficient rest area for sea ducks and as a watchable wildlife opportunity, as observing harlequin ducks is a main attraction of this Refuge. Additionally, we would begin monitoring shoreline use by Refuge Visitors under to determine if general public use of the trails disturbs wintering waterfowl, particularly harlequin ducks.

#### *Trustom Pond*

Specific details regarding the hunting program at Trustom Pond Refuge are contained in the Trustom Pond National Wildlife Refuge Hunting Plan (U.S. Fish and Wildlife Service 1989), which also includes a Compatibility Determination, Environmental Assessment, and Section 7 Consultation (endangered species). Hunting of

migratory birds, primarily Canada geese, occurs on 20 acres of Refuge uplands, (cool season grass). The hunted parcel is closed to the public, with the exception of migratory bird hunting. Geese tend to use the fields as feeding and resting areas, as well as migratory corridors. Canada geese are usually found on the above mentioned fields, or on Trustom Pond and in fields east of the pond (which are both closed to hunting). Bag limits and seasons are determined by Federal and State regulations, which allow two split seasons for geese. The number of ducks and other species of geese taken is usually quite minimal.

Opening a portion of Trustom Pond Refuge to migratory bird hunting provides the public with a limited, high quality, wildlife oriented, recreational experience. Additionally, hunting is an acceptable, traditional form of wildlife-oriented recreation that can be used as a management tool to effectively manipulate wildlife populations. The resident sub-population of Canada geese has seen significant increases within the last ten years (Trost and Malecki 1985, Hindman and Ferrigno 1990). Increases in resident Canada geese have currently reached “nuisance” status along the east coast (Atlantic Waterfowl Council 1981). A well managed and well timed hunt is one method being used to reduce the numbers of resident geese (Hestbeck et al. 1990).

The CCP Proposed Action would continue to allow RI DEM to administer waterfowl hunting on 20 upland acres of grassland fields.

### **Environmental Interpretation**

Interpretation includes those activities and supporting infrastructure that translates management activities and cultural history to laymen public users. Interpretive programs are planned for all five Refuges to explain habitat management and restoration activities and processes. In addition, the planned Coastal Rhode Island Visitor Center (CRI VC) and the rehabilitated Sachuest Point Visitor Center,

complete with cutting edge exhibitry, will act as “interpretive centers of excellence”. Development of the Visitor Services Plan will guide related activities and projects for the next 10 to 15 years, including cooperation with partners to identify mutual goals for interpretive opportunities.

#### *Block Island Refuge*

The CCP Proposed Action at Block Island includes opportunities to develop interpretive exhibits at Crescent Beach, North Light, on the ferry, at the ferry landing, town center and Settler’s Rock. Additionally, an orientation and introduction to the Service and the Refuge will be developed to present to Island visitors at the Town theater. Also, an interpretive walk on Clayhead Trail would be planned and developed.

#### *Ninigret Refuge*

Currently, foot travel is allowed all year on two 1-mile trails which lead to Foster Cove and a platform overlooking Ninigret Pond, as well as the 70 acres of asphalt runways and interior maintenance roads. The Refuge trail system is also used by non-profit organizations to conduct outings and interpretive programs. The 22 acre barrier beach parcel is open to foot traffic with the exception of piping plover nesting areas and the salt marsh shoreline along Ninigret Pond. The upper berm of the barrier beach is closed to public use from April 1st to September 15th to provide nesting habitat for the federally threatened piping plover and State threatened least tern.

Interpretation of habitat and wildlife use will continue along Refuge trails, at road side pull-offs, trail overlooks, and at parking areas, visitor contact sites and at the barrier beach areas. Development of a Visitor Services Plan will include evaluation of new pamphlets, trail maps, species checklists and interpretive signs at current platforms as well as at the proposed Foster Cove observation platform. The CCP Proposed Action would continue

completion of a barrier-free 3.8 miles of trail system “Trail Through Time”. Existing trails, kiosks and platforms would be upgraded or completely replaced, including improved interpretive panels and signs. The Refuge would continue to participate in local festivals and other special events and use volunteers to lead interpretive programs.

#### *Chafee Refuge*

No interpretive opportunities currently exist at Chafee Refuge. The CCP Proposed Action would develop interpretive exhibits and a kiosk at the South County Museum in Narragansett. We would also design and construct a kiosk and barrier-free trail and observation platform at Bridgeport Commons. Cooperating with RI DOT, we would construct a kiosk and pullout overlook at Middlebridge, plan and designate canoe and kayak water routes; consider the use of a concessionaire to run a canoe and kayak rental operation; and ensure that RI DOT constructs an interpretive kiosk and overlook on the South County Bike Trail.

#### *Sachuest Point Refuge*

The Visitor Center is currently being renovated and one kiosk exists on the three mile trail system. The CCP Proposed Action would develop new exhibits in the Sachuest Point Visitor Center. As part of an expanded interpretive program, we would develop the trail system to include points at which resource management and natural history, and cultural resources are interpreted. At least one segment of the trail system would be barrier-free. We would also develop additional kiosks; improve signage; create “watchable wildlife” pamphlets, multi lingual literature, and signs; coordinate with the Town of Middletown to develop interpretive signs, kiosks, and/or exhibits on Second and Third beaches; and plan an exhibit for the Newport Visitor Center.

#### *Trustom Pond Refuge*

A staffed Visitor Contact Station and kiosks are established on Trustom Pond Refuge. The CCP Proposed Action would reduce unnecessary trail sections and restrict public access to trails only. A barrier-free trail would provide access to the Pond, where interpretation would be augmented with a self-guided trail pamphlet and species checklist. We would also construct interpretive signs for the grassland restoration project, barrier beach management and salt pond ecology.

## Wildlife Observation and Photography

### *Block Island Refuge*

This Refuge has not been formally opened to public use, therefore a trail system has not been established. However, walking, amateur photography and observation of wildlife occurs year-round along the beach shoreline, foot paths, through the sand dunes, and the right-of-way leading to the North Lighthouse.

The CCP Proposed Action would formally open Block Island Refuge to allow wildlife observation and photography on designated travel ways. The only exception would be to restrict public access if piping plover are observed displaying territorial behavior or in other sensitive nesting and roosting areas. We would also designate trails to protect dunes, and enforce restriction to trails.

### *Ninigret Refuge*

Interpretation of habitat and wildlife would occur along Refuge trails and at road side pull-offs, trail overlooks, parking areas, visitor contact sites and barrier beach areas.

Foot travel is allowed all year on two 1-mile trails which lead to Foster Cove and a platform overlooking Ninigret Pond, as well as the 70 acres of asphalt runways and interior maintenance roads. Occasional amateur photography is allowed in conjunction with wildlife observation. Interpretive programs for the general public are

conducted by Refuge staff, volunteers and the Frosty Drew Nature Center during the year. These programs include owl walks, plant walks, waterfowl walks, Refuge walks and salt pond interpretation. The Refuge trail system is also used by non-profit organizations to conduct outings and interpretive programs.

The 22 acre barrier beach parcel is open to foot traffic with the exception of piping plover nesting areas and the salt marsh shoreline along Ninigret Pond. The upper berm of the barrier beach is closed to public use from April 1st to September 15th to provide nesting habitat for the federally threatened piping plover and State threatened least tern. The CCP Proposed Action would complete the 3.8 mile "Trail through Time" to facilitate wildlife observation and photography.

### *Chafee Refuge*

Currently, there are no authorized uses at Chafee Refuge. The CCP Proposed Action would include cooperation with the Town of Narragansett and RI DOT to construct a barrier-free observation platform at Middle Bridge. Also, a second platform at Bridgeport Commons would be constructed, and we would designate an interpretive kayak and canoe route.

### *Sachuest Point Refuge*

Foot travel is allowed all year on 3 miles of designated trails which lead to three platforms overlooking the Refuge and surrounding ocean waters. Interpretive programs for the general public are conducted by Refuge staff and volunteers during the year. These programs include owl walks, plant walks, waterfowl walks, and Refuge walks. The Refuge trail system is also used by non-profit organizations to conduct outings and interpretive programs.

Wildlife photography along refuge trails is open to the public and by Special Use Permit in closed areas. Common photographic subjects at Sachuest

Point Refuge are wintering Harlequin Ducks (October-March) and shorebirds. Red foxes at their dens are also a sought after subject. Access is allowed one hour before sunrise to one hour after sunset. Special Use Permittees are allowed to build two temporary photography blinds to be removed at the end of the season.

The CCP Proposed Action would eliminate redundancy in trail system and designate and enforce shoreline access points. We would develop a barrier-free platform and trail section, and also develop watchable wildlife pamphlets, species check off lists and self-guided trail maps.

#### *Trustom Pond Refuge*

Foot travel is allowed all year on 3.5 miles of designated trails which lead to three observation platforms; two along the shore of Trustom Pond and one platform on the half-acre farm pond. Occasional amateur photography is allowed in conjunction with wildlife observation. Between September 15th and April 1st, foot travel is allowed on the barrier beach. Interpretive programs for the general public are conducted by Refuge staff and volunteers during the year. These programs include owl walks, plant walks, waterfowl walks, and Refuge walks. The Refuge trail system is also used by non-profit organizations to conduct outings and interpretive programs.

The CCP Proposed Action would reduce unnecessary trails, restrict pub use to trails only, ensure barrier-free access to at least one observation platform, reconstruct the eastern most trail to make it barrier-free, and develop watchable wildlife pamphlets, species check off lists and self-guided trail maps.

## Availability of Resources

### Environmental Education

*Refuge Complex Recreation Funding Analysis for Environmental Education (proposed projects):*

Coastal RI Visitor Center Constuction	6500K
Sachuest Point VC Renovation	600K
Middlebridge VCS	25K
Middlebridge turn-off	250K
Bike Path (So. Co. Bike Path) Tract Kiosk	5K
Kiosk panels	3K
Bike Path along sewage ROW Tract 11	???
Possible Visitor Center at turn-off (similar to TPVCS)	25K
Sachuest Point Kiosks (2)	10K
Sachuest Point Improve/upgrade trails	125K
Sachuest Point Observation platforms (3)	30K
Improve Sachuest Point VC exhibits	40K
Trustom Pond Improve/upgrade trails	50K
Trustom Pond Observation platforms (2)	20K
Trustom Pond Kiosks (2) and panels	15K

### Fishing

*Complex-wide Recreation Act Funding Analysis: Funding/annual costs required to administer and manage fishing activities*

Maintenance of 3 Parking Area	\$15 K
3 Law Enforcement Officers	21K
Signs for all 5 Refuges	5K
Refuge Complex Administration	5K
<b>TOTAL</b>	<b>\$ 46K</b>

### Hunting

*Funding/annual costs required to administer and manage waterfowl hunting activities:*

Maintenance of Parking Area on 4 Refuges	\$12K
3 Law Enforcement Officers	21K
Deer exclosures on all 5 Refuges	25K
Signs on 4 Refuges	4K
Program Administration	8K
Studies to support activity	40K
<b>TOTAL</b>	<b>\$110K</b>

Some costs would be significantly reduced due to State management of the program. Law enforcement officers from the Complex would have limited involvement.

**Interpretation**

(Incorporated into Environmental Education and Wildlife Observation/Photography sections)

**Wildlife Observation and Photography**

*Funding Requirements in Support of Wildlife Observation and Photography:*

Maintaining Trails	\$5K
Maintain Platforms	1K
Design/construct observation platforms	50K
Photo-related Brochures	5K
Photo-related Signs	5K
<b>TOTAL</b>	<b>\$66K</b>

erosion from unauthorized trails. Some disturbance to roosting and feeding shorebirds probably occurs (Burger 1981) but is considered minimal. Discarded fishing line and other fishing litter can entangle migratory birds and marine mammals and cause injury and death (Gregory 1991). Additionally, litter impacts the visual experience of refuge visitors (Marion and Lime 1986). Several enforcement issues involving fishing also impact the refuge, including: illegal taking of fish (undersized, over limit), littering, illegal fires at night, and disorderly conduct. Many ethnic groups use the Refuges to fish, Sachuest Point in particular, but cannot read the current regulatory signs printed in English, further exacerbating the above-mentioned problems. Sachuest Point, while having a Visitor’s Center, lacks permanent staff to provide a continuous presence. Contact between Refuge staff with visitors is minimal, occurring mainly through volunteers who staff the visitor center, or law enforcement officers working evenings.

**Anticipated Impacts of Proposed Actions**

**Environmental Education**

Onsite environmental education activities by groups of up to 50 students and teachers may impose a low level of impact on sites used for these activities. These low level impacts may include trampling of vegetation and temporary disturbance to wildlife in the immediate area during the activity. These minor impacts occur in areas already impacted by public use and private ownership. In the event of disturbance to trust resources (i.e. piping plover nesting or territorial behavior) the activities would be curtailed or prohibited altogether.

**Fishing**

Potential and actual refuge impacts include over harvest of fisheries, trampling of vegetation, creation of unauthorized trails and subsequent

**Hunting, Migratory Bird**

Direct disturbance to doves and geese (at Trustom Pond) and other waterfowl (at Sachuest Point, Ninigret and Chafee Refuges) would occur from hunting. Current numbers of such birds would be reduced, within allowable limits, as determined by State and Federal agencies. Additional disturbance would occur to wintering birds and other wildlife using the lands, fields, open waters and marshes where hunting would occur. Noise from shotguns would cause some birds to flush and go elsewhere. These impacts are of a temporary nature and would also be reduced by the presence of adjacent Refuge habitat where hunting does not occur, and birds can feed and rest relatively undisturbed.

## Wildlife Observation and Photography and Environmental Interpretation

Possible impacts may involve disturbing wildlife, removing plants, trampling vegetation, littering, vandalism, and entrance into closed areas.

Human activity during migration and /or nesting may need to be addressed in the future (Pfister et al. 1992, Burger 1986) At Sachuest Point Refuge, visitor activities may impact the harlequin ducks, a species of management concern, that winter at Island Rocks located east of the Refuge (Cassirer et.al. 1993). Additional impacts from these activities might include:

- Increased disturbance to harlequin ducks, red fox and their kits, and other resident wildlife;
- Loss of habitat from construction of observation blinds;
- Trampling of vegetation in interpretation areas (including blinds and along trails).

## Public Review and Comment

Public review and comments will be solicited in conjunction with the CCP/Environmental Assessment for the Rhode Island Refuge Complex, in order to comply with the National Environmental Policy Act and Service Policy.

## Determination

The use is compatible **X**.

The use is not compatible

## Stipulations Necessary to Ensure Compatibility

### Environmental Education

Activities would be held on sites where minimal impact would occur. Periodic evaluation of sites and programs would be conducted to assess whether objectives are being met and to prevent site degradation. If evidence of unacceptable adverse impacts appear, the location of the outdoor classroom would be rotated with secondary sites. The known presence of a threatened or endangered species in the vicinity of the environmental education activity or site would preclude use of that site until the Refuge Manager determines otherwise.

Regulations to ensure the safety of all participants would be issued in writing to the teacher responsible for the activities and would be reviewed before the students begin.

### Fishing

Each Refuge needs a consistent Service presence to be able to adequately manage a quality fishing program. Sachuest Point refuge should be staffed year-round. Adequate funding to provide seasonal law enforcement presence at night on Sachuest Point would be required during the peak of the fishing season (particularly April-October). Enforcement would help to curb illegal fires, disorderly conduct, littering, illegal taking of fish, and creation of unauthorized trails. Law enforcement officers would also serve as a direct contact to the fishing public to communicate and enforce Refuge regulations.

Creation of fishing access points using stairs would reduce unauthorized trails and subsequent erosion. Additional regulatory signs, printed literature, and additional signs printed in the languages of the various ethnic groups using the Refuge would also help to educate users about Refuge policy and fishing regulations. Public meetings with local fishing clubs and interested individuals might also be required to educate the public on Refuge regulations. We could also develop a regulation to ensure fishing spears are unloaded and encased.



## Hunting, Migratory Bird

The Refuge hunting program would be administered by RI DEM, who also manage goose hunting on adjacent areas in what is known as the South Shore Management Area (SSMA). Canada goose hunting permits for the Refuge would be issued by RI DEM through a reservation system. Hunting would be limited to no more than four consecutive days per week. The exact days of the week would be assigned by RI DEM in the SSMA. Hunting parties in the goose fields may not consist of more than four persons.

If population levels of either doves or Canada geese were to decline significantly below Service objectives, as set in the Regional Resource Plan (U.S. Fish and Wildlife Service 1984) and the North American Waterfowl Management Plan (U.S. Fish and Wildlife Service 1986), then hunting of these species would be incompatible with Refuge purposes and would be discontinued. Hunter compliance to current migratory bird and refuge regulations would be achieved through a combination of printed information provided by RI DEM and enforcement of regulations by Refuge officers.

## Environmental Interpretation

A more consistent Service presence, especially during peak visitation, will help ensure quality interpretive programs. Law enforcement patrol of public use areas should continue to minimize vandalism, littering, and unauthorized use of trails. The current "Refuge open fi hour before sunrise to fi hour after sunset" regulation, on all Refuges except Sachuest Point, restricts entry after daylight hours, and should be maintained along with "Public Use Restricted to Trails Only". Periodic evaluation of trails will be held to assess visitor impacts on habitat and nesting to evaluate disturbance to plants and animals. If evidence of unacceptable adverse impacts begins to appear, Refuge regulations will be posted and enforced. Closed areas will be established, posted and enforced. The known presence of any threatened or endangered species likely to be disturbed by trail activity would preclude use of that site as a trail.

### *Trustom Pond Refuge*

New interpretive facilities would be constructed in areas that would not diminish the undisturbed

shoreline, coves, and islands which allow waterfowl to distance themselves from the visitors. These undisturbed areas are particularly important to migrating waterfowl when they first arrive and are more sensitive to human disturbance (Klein 1989). Shorebird roosting and nesting sites at the Trustom Pond and Card Pond breachway would remain closed to public entry during fall and spring migration. Refuge staff would consider daily monitoring during this time. Shorebird surveys are conducted during migration and would be expanded to document human use of the intertidal zone and berm. Negative impacts from human activity in these areas will be addressed if needed. Access to the dunes of the barrier beach and adjacent salt marsh area is prohibited all year and is posted as a "Closed Area".

## Wildlife Observation and Photography

An increased Service presence on each Refuge would improve the quality of these programs. In particular, a permanent, year-round presence on Sachuest Point Refuge is needed to manage visitor use. Law enforcement patrol of public use areas should continue to minimize the above-mentioned types of violations. The current "Refuge open fi hour before sunrise to fi hour after sunset" regulation restricts entry after daylight hours, on all Refuges but Sachuest Point, and should be maintained along with "Public Use Restricted to Trails Only".

All Refuges will have designated trails and use will be restricted to those trails. Periodic evaluation of paths will be held to assess visitor impacts on the habitat and species of concern. If evidence of unacceptable adverse impacts begins to appear, Refuge regulations will be posted and enforced. Closed areas may be established, posted and enforced. The known presence of any threatened or endangered species likely to be disturbed by trail activity would preclude use of that site as a trail.

All photographers must follow refuge regulations. Photographers in closed areas must follow the conditions outlined in the Special Use Permit which normally include: notification of the Refuge Manager or Designee each time a blind is moved, use of area should be restricted to inside blinds to reduce disturbance to wildlife, no baits or scents of any kind may be used, all litter must be removed

each day, no food can be left in the blind overnight, and all blinds will be removed at the end of the photographic season.

All wildlife observation and photography structures will be placed to minimize impacts to habitat, and species of concern. To minimize disturbance, development of permanent trails and facilities will either avoid, or be placed on the perimeter of sensitive areas where wildlife can anticipate a consistent human presence. Structure will be built to conform to the landscape to the extent practicable, in order to maintain a natural setting.

## Justification

### Environmental Education

Environmental education is a public use management tool used to develop a resource protection ethic within a society. Environmental education activities generally support refuge purposes and impacts can largely be mitigated (Goff et al. 1988). The minor resource impacts attributed to these activities are generally outweighed by the benefits gained by educating present and future generations about refuge resources (Dufus and Dearden 1990).

While environmental education targets school age children, it is not limited to them. It allows us to instruct Refuge visitors on endangered and threatened species, wildlife management and ecological communities. A secondary benefit is the “ownership mentality” instilled in Refuge visitors, which probably decreases vandalism, littering, and poaching. Environmental education also increases the Service’s visibility in the local community. Environmental education (outdoor classroom) is listed in the Refuge Manual (U.S. Fish and Wildlife Service 1985) as the highest priority visitor activity throughout the National Wildlife Refuge System.

### Fishing

Fishing is a priority wildlife-oriented activity that provides substantial recreational benefits to the public (U.S. Fish and Wildlife Service 1992 and U.S. Fish and Wildlife Service 1997). The Rhode

Island Refuge Complex technically has no fisheries resources on its property, but is providing access to fishing. In this region, surf fishing and shellfish harvesting are traditional forms of outdoor recreation.

### Hunting, Migratory Bird

Hunting is another priority wildlife-oriented activity that provides outstanding recreational benefit to the public. Hunting of Canada geese on Trustom Pond Refuge promotes an appreciation of wildlife and the outdoors. Recreational hunting is also a valid means of population control, and can serve to keep populations of wildlife in check. Current population levels of mourning doves in New England show significant increases within the past ten years (Dolton and Kendall 1993). Currently, Rhode Island is the only state in New England which conducts a dove hunt. While the Canadian breeding population of migratory Canada geese have declined dramatically in the last ten years, the resident sub-population of Canada geese continues to increase (Trost and Malecki 1985, Hindman and Ferrigno 1990). In Rhode Island, resident Canada geese derived from the “maxima” subspecies have increased steadily since the mid ‘60s (Allin 1980). Current population levels show approximately 4,500 geese from the mid-winter inventory (U.S. Fish and Wildlife Service 1994). These current population levels of resident Canada geese have reached “nuisance” status along the east coast (Atlantic Waterfowl Council 1981) and damage gardens, golf courses, winter cover crops, and cause water quality problems in public water reservoirs (Hindman and Ferrigno 1990). Presently, complaints regarding Canada geese are the number one animal damage problem faced by RI DEM.

A study currently underway on the Atlantic coast is attempting to determine optimum timing of harvest of Atlantic Flyway Canada geese by determining when the majority of migratory geese (which are declining) have passed through an area in order to increase the harvest on the non-migratory, resident Canada geese (Hestbeck et al. 1990). The results of this study will have a direct impact on the timing and numbers of resident geese harvested at Trustom Pond Refuge. The current direction of the hunting program at Trustom Pond Refuge will contribute to the

reduction of local resident Canada geese and reduce the public nuisance of these birds.

**Wildlife Observation and Photography and Environmental Interpretation**

The majority of visitors to the Refuge are there to view the wildlife of the upland, salt pond and beach. This visitation is a wildlife-oriented activity which is compatible with Refuge purposes.

While there is a degree of visitor impacts on trail vegetation (Kuss 1991) and disturbance to wildlife near trails (Klein 1989, Burger 1981), visitors gain an understanding of management, and an appreciation for the environment of the Refuge. Long-term gains resulting from positive visitor experiences outweigh the short-term disturbance caused by visitors. Visitor education and law enforcement will reduce the incidence of negative impact activities while providing high visitor satisfaction (Goff 1988).

Wildlife observation and photography are wildlife-oriented uses that benefits not only the photographer, but the Refuge as well. Some photographers donate photographs and slides of Refuge resources which help the Refuge better communicate its mission and resources through slide presentations and photo displays.

Some research shows that photographers can be extremely invasive to wildlife, causing disturbance to nesting birds and rare species (Klein 1989). Impacts of photographers to wildlife at Sachuest Point Refuge has yet to be determined, though sea duck species, such as harlequin ducks, seldom frequent the shoreline, preferring rugged surf for foraging and the safety of several rocky islands offshore for roosting.

Signature – Refuge Manager: \_\_\_\_\_

Date: \_\_\_\_\_

Concurrence – Regional Chief: \_\_\_\_\_

Date: \_\_\_\_\_

Mandatory 10 or 15-year Reevaluation Date: \_\_\_\_\_

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## Pre-Acquisition Compatibility Determination

(For use on lands proposed for acquisition)

### Rhode Island National Wildlife Refuge Complex

#### Use

This pre-acquisition compatibility determination essentially serves as a statement of intent for allowing priority, wildlife-dependent public uses (hunting, fishing, environmental education and interpretation, wildlife observation and photography) to continue on lands proposed for future Service acquisition outside of the current acquisition boundaries for the Rhode Island National Wildlife Refuges, assuming the identified stipulations can be met.

#### Refuge names, establishing and acquisition authorities, and purposes:

##### Block Island National Wildlife Refuge

Date Established: November 2, 1973

Establishing and Acquisition Authorities: Block Island National Wildlife Refuge (NWR) was established under 16 U.S. Code 667b, Public Law 80 - 537, an Act authorizing the transfer of certain real property for wildlife, or other purposes.

Purpose(s) for which Refuge was Established: Lands acquired under 16 U.S. code 667b, Public Law 80-537 were for. . . “particular value in carrying out the national migratory bird management program.”

##### Ninigret National Wildlife Refuge

Date Established: 12 August 1970

Establishing and Acquisition Authorities: Ninigret National Wildlife Refuge (NWR) was established on 12 August, 1970 under 16 U.S. Code 667b, Public Law 80 - 537, an Act authorizing the transfer of certain real property for wildlife, or other purposes. Remaining parcels of land were established under the Migratory Bird

Conservation Act, 16 U.S.C. 715d.

Purpose(s) for which Refuge was Established: Lands acquired under 16 U.S. code 667b, Public Law 80-537 were for. . . “particular value in carrying out the national Migratory Bird Management Program.” Additional lands acquired under the Migratory Bird Conservation Act (16 U.S.C. ss 715d) were. . . “for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.”

##### John H. Chafee National Wildlife Refuge

Date Established: November 5, 1988

Establishing and Acquisition Authorities: Amendment to the Emergency Wetlands Resources Act (102 Stat. 3177) and the National Wildlife Refuge Administrative Act of 1966, as amended (16 USC 668dd - 668ee; 80 STAT 927).

Purpose(s) for which Refuge was Established: “The purpose for which the Refuge was established and managed for were: (1) to protect and enhance the populations of black ducks and other waterfowl, geese, shorebirds, terns, wading birds, and other wildlife using the refuge; (2) to provide for the conservation and management of fish and wildlife within the refuge; (3) to fulfill the international treaty obligations of the United States respecting fish and wildlife; and (4) to provide opportunities for scientific research, environmental education, and fish and wildlife-oriented recreation.” 102 Stat. 3177.

##### Sachuest Point National Wildlife Refuge

Date Established: June 30, 1973

Establishing and Acquisition Authorities: Sachuest Point Refuge was established in 1970, under the Refuge Recreation Act of 1962 and the Fish and Wildlife Act of 1956.

Purpose(s) for which Refuge was Established: “...for the development, management, advancement, conservation, and protection of fish and wildlife resources” and for “(1) incidental fish and wildlife-oriented recreational development; (2) protection of natural resources, and (3) conservation of endangered or threatened species.”

## Trustom Pond National Wildlife Refuge

Date Established: August 15, 1974

Establishing and Acquisition Authorities: The Trustom Pond National Wildlife Refuge was established on August 15, 1974 under the authority of the Migratory Bird Conservation Act, 16 USC 715-715R and by the Refuge Recreation Act, 16 USC c - 1.

Purpose(s) for which Refuge was Established: For lands acquired under the Migratory Bird Conservation Act, as amended, the purpose of the acquisition is “. . . for uses as an inviolate sanctuary, or for any other management purpose, for migratory birds.” 16 U.S.C. § 715d (Migratory Bird Conservation Act) and for “. . . (1) incidental fish and wildlife-oriented recreational development; (2) the protection of natural resources; and (3) the conservation of endangered or threatened species. . .” as authorized by the Refuge Recreation Act, 16 USC. c - 1.

## National Wildlife Refuge System Mission

“To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”

## Description of Use

The Level 1 Focus Areas presented in Chapters 1 and 3 of the draft CCP/EA for the Rhode Island Refuge Complex identify general areas in which the Service would seek to acquire land from willing sellers outside of current Refuge acquisition boundaries. Since individual tracts are not identified at this time, we are not able to address which priority public uses exist and should be allowed to continue, and at what levels, in specific locations. As most of the Focus Areas are currently unimproved and in private ownership, we assume there are low to moderate levels of existing public use. However, our intent is to allow existing priority public uses to continue on newly acquired tracts, assuming the stipulations outlined below can be met.

## Availability of Resources

No additional Refuge resources would be devoted to these uses; that is, no additional infrastructure would be developed to accommodate these new areas until a final compatibility determination is completed or they are addressed in the Visitor Services Plan. Any proposed expenditures for improving public use opportunities in these areas would be identified as projects in the a Visitor Services Plan. This would include volunteer projects as well

Before the priority public uses can be allowed under this pre-acquisition compatibility determination, properties must be acquired and posted. Acquisition and posting would occur regardless of the potential for wildlife-dependent public uses at a site.

## Anticipated Impacts of the Use

Within the proposed expansion areas, current levels of use are not known for the six priority, wildlife-dependant recreational uses defined in The National Wildlife Refuge System Improvement Act of 1997 (i.e., hunting, fishing, wildlife observation and photography, and environmental education and interpretation). Impacts of such uses are expected to be minimal, provided that the uses are only allowed in accordance with the stipulations listed below (*see Stipulations Necessary to Ensure Compatibility*).

## Public Review and Comment

As part of the CCP/EA process for the Rhode Island Refuge Complex, this compatibility determination will undergo extensive public review, including a comment period of at least 30 days following the release of the Draft CCP/EA.

## Determination

The use is compatible **X**.

The use is not compatible .

## Stipulations Necessary to Ensure Compatibility

The Refuge Manager is responsible for evaluating whether the conditions stipulated below are met prior to acquisition, transfer, or donation. In addition, all other Refuge regulations would apply to the new lands.

The following conditions must all be met before allowing existing, priority, wildlife-dependent public use to continue on an interim basis on newly acquired lands:

- 1) There is no indirect, direct, or cumulative threat anticipated to human health or safety;
- 2) There is no indirect, direct, or cumulative threat anticipated to natural or cultural resources;
- 3) The use is consistent with management of existing Rhode Island Refuge Complex lands; in particular, existing Refuge regulations would not be compromised;
- 4) The newly acquired lands represent a meaningful unit within which to manage the activity;
- 5) There are no anticipated conflicts between or among priority public uses; and,
- 6) The land is acquired by the Service and the boundaries are posted.

This pre-acquisition compatibility determination is in effect until a formal compatibility determination is completed. A formal compatibility determination will be done when conditions under which the use was first allowed change significantly, or if there is significant new information regarding the effects of the use or, with revision of the CCP, whichever comes first. However, at any time, the Refuge Manager retains the authority to modify or cancel any public uses in order to insure compatibility with the Refuge purpose or to insure the conditions above are met.

## Justification

Existing priority, wildlife-dependant recreational uses should be allowed to continue on newly acquired tracts of land. In general, priority, wildlife-dependant recreational uses are compatible with, and can help contribute to, the Mission of the Refuge System and the purposes for which each of the Rhode Island Refuges was established.

Signature – Refuge Manager: \_\_\_\_\_

Date: \_\_\_\_\_

Concurrence – Regional Chief: \_\_\_\_\_

Date: \_\_\_\_\_

Mandatory 10 or 15-year Reevaluation Date:  
\_\_\_\_\_

# **Glossary**



**adaptive ecosystem management**- Use of the findings of ecology to manage natural resources, not for maximum commodity production (a traditional industrial forest), or for preservation of current conditions (a traditional reserve), but for the perpetuation of patterns and processes that allow the ecosystem to persist. This management style stresses experimentation, collaboration, and re-evaluation.

**adaptive management**- responding to changing ecological conditions so as to not exceed productivity limits of a specific place. For example, when crop growth slows, a good farmer learns to recognize ecological signs that tell either to add more manure or to allow a field to lie fallow. Adaptive management becomes impossible when managers are forced to meet the demands of outsiders who are not under local ecological constraints (from Dodson et al., 1998).

**alternative** – a reasonable way to fix the identified problem or satisfy the stated need (40 CFR 1500.2) [see also management alternative below].

**amphidromous fish** – fish that can migrate from fresh water to the sea, or vice versa, not for the purpose of breeding, but at other times during the life cycle of the fish.

**anadromous** – fish that spend a large proportion of their life cycle in the ocean and return to freshwater to breed.

**appropriate use** – a proposed or existing use of a national wildlife refuge that (1) supports the Refuge System Mission, the major purposes, goals or objectives of the refuge; (2) is necessary for the safe and effective conduct of a priority general public use on the refuge; (3) is otherwise determined under Service Manual Chapter 605 FW 1 (draft), by the Refuge Manager and Refuge Supervisor to be appropriate.

**aquatic barrier** – any obstruction to fish passage.

**aquatic** – growing in, living in, or dependent upon water.

**barrier free** – improved area designed to be accessible to people with physical disabilities.

**benthos** – organisms that live on or in the bottom of a body of water.

**biological integrity** – biotic composition, structure, and function at the genetic, organism, and community levels consistent with natural conditions, and the biological processes that shape genomes, organisms, and communities.

**biological or natural diversity** – the abundance, variety, and genetic constitution of animals and plants in nature. Also referred to as “biodiversity.”

**breeding habitat** – habitat used by migratory birds or other animals during the breeding season.

**buffer zones** – protective land borders around critical habitats or water bodies that reduce runoff and nonpoint source pollution loading; areas created or sustained to lessen the negative effects of land development on animals and plants and their habitats.

**candidate species** – those species for which the Service has on file sufficient information on biological vulnerability and threats to propose them for listing.

**carrying capacity** – the size of the population that can be sustained by a given environment.

**catadromous fish** – fish that spend most of their lives in fresh water but migrate to sea to reproduce.

**Categorical Exclusion (CE, CX, CATEX, CATX)** - a category of actions that do not individually or cumulatively have a significant effect on the human environment and have been found to have no such effect in procedures adopted by a Federal agency pursuant to the National Environmental Policy Act (40 CFR 1508.4).

**CFR** – Code of Federal Regulations.

**Challenge Cost Share Program** – a grant program administered by the Fish and Wildlife Service providing matching funds for projects supporting natural resource education, management, restoration and protection on Service lands, other public lands and on private lands.

**community** - the area or locality in which a group of people resides and shares the same government.

**community type** – a particular assemblage of plants and animals, named for the characteristic plants.

**compatible use** – an allowed use that will not materially interfere with, or detract from, the purposes for which the unit was established (Service Manual 602 FW 1.4).

**compatibility determination** – a compatibility determination is required for a wildlife-dependant recreational use or any other public use of a refuge. A compatible use is one which, in the sound professional judgement of the Refuge Manager, will not materially interfere with or detract from fulfillment of the Refuge System Mission or refuge purpose(s)

**Comprehensive Conservation Plan (CCP)** – a document that describes the desired future conditions of a refuge or planning unit and provides long-range guidance and management direction to achieve the purposes of the refuge, help fulfill the mission of the System, maintain and, where appropriate, restore the biological integrity, diversity, and environmental health of each refuge and the System, and meet other mandates.

**concern** – see issue.

**conservation** – the management of natural resources to prevent loss or waste. Management actions may include preservation, restoration, and enhancement.

**conservation agreements** – written agreements reached among two or more parties for the purpose of ensuring the survival and welfare of unlisted species of fish and wildlife and/or their habitats, or to achieve other specified conservation goals. Participants voluntarily commit to implementing specific actions that will remove or reduce the threats to these species.

**conservation easement** – a legal agreement between a landowner and a land trust (a private, nonprofit conservation organization) or government agency that permanently limits a property's uses in order to protect its conservation values.

**cool-season grass** – introduced grass for crop and pastureland that grows in spring and fall and is dormant during hot summer months.

**cooperative agreement** – the legal instrument used when the principal purpose of the transaction is the transfer of money, property, services or anything of value to a recipient in order to accomplish a public purpose authorized by Federal statute and substantial involvement between the Service and the recipient is anticipated.

**cultural resources** – evidence of historic or prehistoric human activity, such as buildings, artifacts, archaeological sites, documents, or oral or written history.

**cultural resource inventory** – a professionally conducted study designed to locate and evaluate evidence of cultural resources present within a defined geographic area. Inventories may involve various levels, including background literature search, comprehensive field examination to identify all exposed physical manifestations of cultural resources, or sample inventory to project site distribution and density over a larger area. Evaluation of identified cultural resources to determine eligibility for the National Register follows the criteria found in 36 CFR 60.4 (Service Manual 614 FW 1.7).

**cultural resource overview** – a comprehensive document prepared for a field office that discusses, among other things, its prehistory and cultural history, the nature and extent of known cultural resources, previous research, management objectives, resource management conflicts or issues, and a general statement on how program objectives should be met and conflicts resolved. An overview should reference or incorporate information from a field office's background or literature search described in Section VIII. of the Cultural Resource Management Handbook (Service Manual 614 FW 1.7).

**database** – a collection of data arranged for ease and speed of analysis and retrieval, usually computerized.

**diadromous** – fish that migrate from freshwater to saltwater or the reverse: a generic term that includes anadromous, catadromous and amphidromous fishes.

**digitizing** – the process of converting information from paper maps into geographically referenced electronic files for a geographic information system (GIS).  
**early successional stage** - a vegetated area that is in the primary stages of ecological succession.

**easement** – an agreement by which a landowner gives up or sells one of the rights on his/her property. For example, a landowner may donate a right of way across his/her property to allow community members access.

**ecological integrity** – the integration of biological integrity, natural biological diversity, and environmental health; the replication of natural conditions.

**ecological succession** - the orderly progression of an area through time from one vegetative community to another in the absence of disturbance. For example, an area may proceed from a grass-forb, through a shrub-scrub, to a mixed hardwood forest.

**ecosystem** – a biological community together with its environment, functioning as a unit. For administrative purposes, the Service has designated 53 ecosystems covering the United States and its possessions. These ecosystems generally correspond with watershed boundaries and vary in their sizes and ecological complexity.

**ecotourism** – a type of tourism that maintains and preserves natural resources as a basis for promoting economic growth and development resulting from visitation to an area.

**ecosystem approach** – a way of looking at socio-economic and environmental information based on ecosystem boundaries, rather than town, city, or county boundaries.

**ecosystem-based management** – an approach to making decisions based on the characteristics of the ecosystem in which a person or thing belongs. This concept takes into consideration interactions between the plants, animals, and physical characteristics of the environment when making decisions about land use or living resource issues.

**ecosystem services** - the benefits human populations derive, directly or indirectly, from ecosystem functions (e.g., gas regulation, disturbance regulation, soil formation, pollination, raw materials).

**emergent wetland** – wetlands dominated by erect, rooted, herbaceous plants.

**endangered species** – a federally protected species which is in danger of extinction throughout all or a significant portion of its range.

**environmental education** – education aimed at producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve these problems, and motivated to work toward their solution (Stapp et al. 1969).

**environmental health** – abiotic composition, structure, and functioning of the environment consistent with natural conditions, including the natural abiotic processes that shape environment.

**Environmental Assessment (EA)** – A concise public document, prepared in compliance with the National Environmental Policy Act, that briefly discusses the purpose and need for an action, alternatives to such action, and provides sufficient evidence and analysis of impacts to determine whether to prepare an environmental impact statement or finding of no significant impact (40 CFR 1508.9).

**Environmental Impact Statement (EIS)** – A detailed written statement required by section 102(2)(C) of the National Environmental Policy Act, analyzing the environmental impacts of a proposed action, adverse effects of the project that cannot be avoided, alternative courses of action, short-term uses of the environment versus the maintenance and enhancement of long-term productivity, and any irreversible and irretrievable commitment of resources (40 CFR 1508.11).

**estuaries** – deepwater tidal habitats and adjacent tidal wetlands that are usually semi-enclosed by land but have open, partly obstructed, or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land.

**estuarine wetlands** – “The Estuarine system consists of deepwater tidal habitats and adjacent tidal wetlands that are usually semienclosed by land but have open, partly obstructed, or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land.” (Cowardin et al. 1979)

**exemplary community type** – an outstanding example of a particular community type.

**extirpated** – no longer occurring in a given geographic area.

**federal land** – public land owned by the Federal government, including lands such as National Forests, National Parks and National Wildlife Refuges.

**federally listed species** – a species listed under the federal Endangered Species Act of 1973, as amended, either as endangered, threatened or species at risk (formerly candidate species).

**Finding of No Significant Impact (FONSI)** – A document prepared in compliance with the National Environmental Policy Act, supported by an environmental assessment, that briefly presents why a Federal action will have no significant effect on the human environment and for which an environmental impact statement, therefore, will not be prepared (40 CFR 1508.13).

**focus areas** – Within each Areas of Biological Significance, focus areas further delineate concentrations or “hot spots” for species and habitats of special concern (see Appendix A).

**forbs** – A flowering plant, excluding grasses, sedges, and rushes, that does not have a woody stem and dies back to the ground at the end of the growing season.

**forested land** – land dominated by trees. For the purposes of the impacts analysis in this document, all forested land was assumed to have the potential to be occasionally harvested, and forested land owned by timber companies was assumed to be harvested on a more intensive, regular schedule.

**forested wetlands** – wetlands dominated by trees.

**frugivory** – feeding on fruit.

**Geographic Information System (GIS)** – a computerized system used to compile, store, analyze and display geographically referenced information. Can be used to overlay information layers containing the distributions of a variety of biological and physical features.

**goal** – descriptive, open-ended, and often broad statement of desired future conditions that conveys a purpose but does not define measurable units.

**grant agreement** – the legal instrument used when the principal purpose of the transaction is the transfer of money, property, services or anything of value to a recipient in order to accomplish a public purpose of support or stimulation authorized by Federal statute and substantial involvement between the Service and the recipient is not anticipated.

**habitat fragmentation** – breaking up of a specific habitat into smaller unconnected areas. A habitat area that is too small may not provide enough space to maintain a breeding population of the species in question.

**habitat conservation** – the protection of an animal or plant’s habitat to ensure that the use of that habitat by the animal or plant is not altered or reduced.

**habitat** – the place where a particular type of plant or animal lives. An organism’s habitat must provide all of the basic requirements for life and should be free of harmful contaminants.

**hydrologic or flow regime** – characteristic fluctuations in river flows.

**Integrated Pest Management (IPM)** - sustainable approach to managing pests by combining biological, cultural, physical, and chemical tools in a way that minimizes economic, health, and environmental risks.

**interjurisdictional fish** – populations of fish that are managed by two or more states or national or tribal governments because of the scope of their geographic distributions or migrations.

**interpretive facilities** – structures that provides information about an event, place or thing by a variety of means including printed materials, audiovisuals or multimedia materials. Examples of these would be kiosks which offer printed materials and audiovisuals, signs and trailheads.

**interpretive materials** – any tool used to provide or clarify information, explain events or things, or serve to increase awareness and understanding of the events or things. Examples of these would be: (1) printed materials such as brochures, maps or curriculum materials; (2) audio/visual materials such as videotapes, films, slides, or audio tapes; and (3) interactive multimedia materials, such as cd-rom and other computer technology.

**invasive species** – non-native species which have been introduced into an ecosystem, and, because of their aggressive growth habits and lack of natural predators, displace native species.

**grassroots conservation organization** – any group of concerned citizens who come together to actively address a conservation need.

**habitat macrosites** - an area important because of the presence of rare species, ecological communities, and functioning ecosystems.

**intervisible posts** – as used here, the ability to see the standing posts immediately before and immediately after your position. You are not necessarily able to see the whole boundary from one position.

**issue** – any unsettled matter that requires a management decision; e.g., a Service initiative, an opportunity, a management problem, a threat to the resources of the unit, a conflict in uses, a public concern, or the presence of an undesirable resource condition. Issues should be documented, described, and analyzed in the CCP even if resolution cannot be accomplished during the planning process (Service Manual 602 FW 1.4). See also: key issue.

**key issue** – an issue meeting the following three criteria:

1. Falls within the jurisdiction of the Service;
2. Can be addressed by a reasonable range of alternatives;
3. Influences the outcome of the project.

**land trusts** – organizations dedicated to conserving land by purchasing land, receiving donations of lands, or accepting conservation easements from landowners.

**limiting factor** – an environmental limitation that prevents further population growth.

**local agencies** – generally referring to municipal governments, regional planning commissions or conservation groups.

**long term protection** – mechanisms such as fee title acquisition, conservation easements or binding agreements with landowners that ensure land use and land management practices will remain compatible with maintenance of the species population at the site.

**management alternative** – a set of objectives and the strategies needed to accomplish each objective (Service Manual 602 FW 1.4).

**management concern** – see issue.

**management opportunity** – see issue.

**management plan** – a plan that guides future land management practices on a tract of land. In the context of this environmental impact statement, management plans would be designed to produce additional wildlife habitat along with the primary products, such as timber or agricultural crops. See cooperative agreement.

**management strategy** – a general approach to meet unit objectives. A strategy may be broad, or it may be detailed enough to guide implementation through specific actions, tasks, and projects (Service Manual 602 FW 1.4).

**migratory game birds** - birds regulated under the Migratory Bird Treaty Act and state laws, that are legally hunted, includes ducks, geese, woodcock, rails.

**migratory nongame birds of management concern** – those species of nongame birds that (a) are believed to have undergone significant population declines; (b) have small or restricted populations; or (c) are dependent upon restricted or vulnerable habitats.

**mission statement** – succinct statement of the unit's purpose and reason for being (Region 7 Planning Staff).

**mitigation** – actions taken to compensate for the negative effects of a particular project. Wetland mitigation usually takes the form of restoration or enhancement of a previously damaged wetland or creation of a new wetland.

**National Environmental Policy Act of 1969 (NEPA)** – requires all agencies, including the Service, to examine the environmental impacts of their actions, incorporate environmental information, and use public participation in the planning and implementation of all actions. Federal agencies must integrate NEPA with other planning requirements, and prepare appropriate NEPA documents to facilitate better environmental decision making (from 40 CFR 1500).

**National Wildlife Refuge (Refuge)** – “A designated area of land, water, or an interest in land or water within the System, but does not include Coordination Areas.” Find a complete listing of all units of the System in the current Annual Report of Lands Under Control of the U.S. Fish and Wildlife Service.

**National Wildlife Refuge System (Refuge System)** – all lands and waters and interests therein administered by the Service as wildlife refuges, wildlife ranges, wildlife management areas, waterfowl production areas, and other areas for the protection and conservation of fish and wildlife, including those that are threatened with extinction.

**National Wildlife Refuge System Mission** – “The mission of the System is to administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of the fish, wildlife and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”

**native plant** – a plant that has grown in the region since the last glaciation and occurred before European settlement.

**natural conditions** – conditions thought to exist from the end of the Medieval Warm Period to the advent of the industrial era (approximately 950 AD to 1800 AD), based upon scientific study and sound professional judgement.

**non-consumptive, wildlife-oriented recreation** – photographing or observing plants, fish and other wildlife.

**non-point source pollution** – nutrients or toxic substances that enter water from dispersed and uncontrolled sites.

**nonforested wetlands** – wetlands dominated by shrubs or emergent vegetation.

**Notice of Intent (NOI)** – a notice that an environmental impact statement will be prepared and considered (40 CFR 1508.22). Published in the Federal Register.

**objective** – a concise statement of what we want to achieve, how much we want to achieve, when and where we want to achieve it, and who is responsible for the work. Objectives derive from goals and provide the basis for determining strategies, monitoring refuge accomplishments, and evaluating the success of strategies. Make objectives attainable, time-specific, and measurable.

**occurrence site** – a discrete area where a population of a rare species lives or a rare plant community type grows.

**old field** – an area that was formerly cultivated or grazed and where woody vegetation has begun to invade. If left undisturbed, it will eventually succeed into a forest. Many old fields occur at sites marginally suitable for crop production or pasturing. Old fields are highly variable in the Northeast, depending on soil, land use history, and management.

**Open Marsh Water Management (OMWM)** – a mosquito control technique that improves habitat conditions in salt marshes for mosquito-eating fish by creating ponds that will maintain the fish between lunar tides.

**palustrine wetlands** – “The Palustrine system includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0%.” (Cowardin et al. 1979)

**Partners for Wildlife Program** – a voluntary habitat restoration program undertaken by the Fish and Wildlife Service in cooperation with other governmental agencies, public and private organizations, and private landowners to improve and protect fish and wildlife habitat on private lands while leaving the land in private ownership.

**partnership** – a contract or agreement entered into by two or more individuals, groups of individuals, organizations or agencies in which each agrees to furnish a part of the capital or some in-kind service, i.e., labor, for a mutually beneficial enterprise.

**population monitoring** – assessments of the characteristics of populations to ascertain their status and establish trends related to their abundance, condition, distribution, or other characteristics.

**prescribed fire** – the application of fire to wildland fuels to achieve identified land use objectives (Service Manual 621 FW 1.7), either from natural or intentional ignition.

**priority public uses** – see wildlife-dependant recreational uses.

**private land** – land that is owned by a private individual, group of individuals, or non-governmental organization.

**private landowner** – any individual, group of individuals or non-governmental organization that owns land.

**private organization** – any non-governmental organization.

**Proposed Action (or Alternative)** – activities for which an Environmental Assessment is being written; the alternative containing the actions and strategies recommended by the planning team. The proposed action is, for all practical purposes, the draft CCP for the refuge.

**protection** – mechanisms such as fee title acquisition, conservation easements or binding agreements with landowners that ensure land use and land management practices will remain compatible with maintenance of the species population at the site.

**public** – individuals, organizations, and groups; officials of Federal, State, and local government agencies; Indian tribes; and foreign nations. It may include anyone outside the core planning team. It includes those who may or may not have indicated an interest in the Service issues and those who do or do not realize that Service decisions may affect them.

**public involvement** – a process that offers impacted and interested individuals and organizations an opportunity to become informed about, and to express their opinions on Service actions and policies. In the process, these views are studied thoroughly and thoughtful consideration of public views is given in shaping decisions for refuge management.

**public involvement plan** – broad long term guidance for involving the public in the comprehensive planning process.

**public land** – land that is owned by the local, state, or Federal government.

**rare species** – species identified in Appendix 3–6 as Species of Special Emphasis due to their uncommon occurrence within the watershed.

**rare community types** – plant community types classified as rare by any of the four state Natural Heritage Programs. As used in this environmental impact statement, is inclusive of the exemplary community types.

**Record of Decision (ROD)** – a concise public record of decision prepared by the Federal agency, pursuant to NEPA, that contains a statement of the decision, identification of all alternatives considered, identification of the environmentally preferable alternative, a statement as to whether all practical means to avoid or minimize environmental harm from the alternative selected have been adopted (and if not, why they were not), and a summary of monitoring and enforcement where applicable for any mitigation CFR 1505.2).

**refuge goals** – descriptive, open-ended and often broad statements of desired future conditions that convey a purpose but do not define measurable units (Writing Refuge Management Goals and Objectives: A Handbook).

**refuge purposes** – the purposes specified in or derived from the law, proclamation, executive order, agreement, public land order, donation document, or administrative memorandum establishing, authorizing, or expanding a refuge, a refuge unit, or refuge subunit, and any subsequent modification of the original establishing authority for additional conservation purposes (Service Manual 602 FW 1.4).

**refuge lands** – those lands in which the Service holds full interest in fee title, or partial interest such as easements.

**Refuge Operating Needs System (RONS)** – the Refuge Operating Needs System is a national database which contains the unfunded operational needs of each refuge. We include projects required to implement approved plans, and meet goals, objectives, and legal mandates.

**restoration** – the artificial manipulation of a habitat to restore it to something close to its natural state. Involves taking a degraded grassland and re-establishing habitat for native plants and animals. Restoration usually involves the planting of native grasses and forbs, and may include shrub removal and prescribed burning.

**runoff** – water from rain, melted snow, or agricultural or landscape irrigation that flows over the land surface into a water body.

**Service presence** – the existence of the Service through its programs and facilities which it directs or shares with other organizations; the public awareness of the Service as a sole or cooperative provider of programs and facilities.

**species of concern** – Species present in the watershed for whom the Refuge has a special management interest. The following criteria were used to identify “species of concern”:

1. Federally listed as threatened or endangered;
2. migratory birds, especially declining species, Neotropical migrants, colonial waterbirds, shorebirds, or waterfowl;
3. certain marine mammals;
4. sea turtle;
5. interjurisdictional fish;
6. State-listed as threatened, endangered, or special concern.

**state land** – public land owned by a state such as state parks or state wildlife management areas.

**step-down management plans** – step-down management plans describe management strategies and implementation schedules. Step-down management plans are a series of plans dealing with specific management subjects (e.g., croplands, wilderness, and fire) (Service Manual 602 FW 1.4).

**stopover habitat** – habitat used during bird migration for rest and feeding.

**strategy** – a specific action, tool, technique, or combination of actions, tools, and techniques used to meet unit objectives.

**succession** – an orderly sequence of changes in plant species and community structure over time, leading to a hypothesized stable climax community.

**threatened species** – a federally protected species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

**tiering** – the coverage of general matters in broader environmental impact statements with subsequent narrower statements of environmental analysis, incorporating by reference, the general discussions and concentrating on specific issues (40 CFR 1508.28).

**tributary** – a stream or river that flows into a larger stream, river or lake.

**trust resource** – one that through law or administrative act is held in trust for the people by the government. A federal trust resource is one for which trust responsibility is given in part to the federal government through federal legislation or administrative act. Generally, federal trust resources are those considered to be of national or international importance no matter where they occur, such as endangered species and species such as migratory birds and fish that regularly move across state lines. In addition to species, trust resources include cultural resources protected through federal historic preservation laws, nationally important and threatened habitats, notably wetlands, navigable waters, and public lands such as state parks and National Wildlife Refuges.

**unfragmented habitat** – large blocks of unbroken habitat of a particular type.

**unit objective** – desired conditions which must be accomplished to realize a desired outcome. Objectives are the basis for determining management strategies, monitoring refuge accomplishments, and measuring the success of the strategies. Objectives should be attainable and time-specific and may be stated quantitatively or qualitatively (Service Manual 602 FW 1.4).

**upland** – dry ground; other than wetlands.

**U.S. Fish and Wildlife Service Mission** – our mission is to work with others to “conserve, protect, and enhance fish and wildlife, and their habitat for the continuing benefit of the American people.”

**vegetation association** – a plant community type having definitive floristic composition and existing in similar physical environments.

**vernal pool** – depressions holding water for a temporary period in the spring and used by a variety of amphibians for egg laying.

**viable population** – a population that will continue to occur in the area for the foreseeable future. In population modeling, minimum viable population (MVP) is the smallest number of individuals that are needed to maintain a species population in the long term.

**vision statement** – concise statement of what the unit could be in the next 10 to 15 years (Region 7 Planning Staff) .

**visitor center** – a permanently staffed building offering exhibits and interpretive information to the visiting public. Some visitor centers are co-located with refuge offices, other include additional facilities such as classrooms or wildlife viewing areas.

**visitor contact station** – compared to a visitor center, a contact station is a smaller facility which may not be permanently staffed.

**warm-season grass** – native prairie grass that puts on the most growth during summer when cool-season grasses are dormant.

**watchable wildlife** – all wildlife is watchable. A watchable wildlife program is a strategy to help maintain viable populations of all native fish and wildlife species by building an effective, well-informed constituency for conservation. Watchable wildlife programs are tools by which wildlife conservation goals can be met while at the same time fulfilling public demand for wildlife recreational activities (other than sport hunting, trapping or sport fishing).

**watershed** – the geographic area within which water drains into a particular river, stream or body of water. A watershed includes both the land and the body of water into which the land drains.

**wet meadow** – meadows located in moist low-lying areas, most often dominated by large colonies of reed canary grass. They are often created by collapsed beaver dams and exposed old pond bottoms. Salt marsh meadows are subject to daily coastal tides.

**wetlands** – The U.S. Fish and Wildlife Service’s definition of wetlands states that “Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water.” (Cowardin et al 1979)

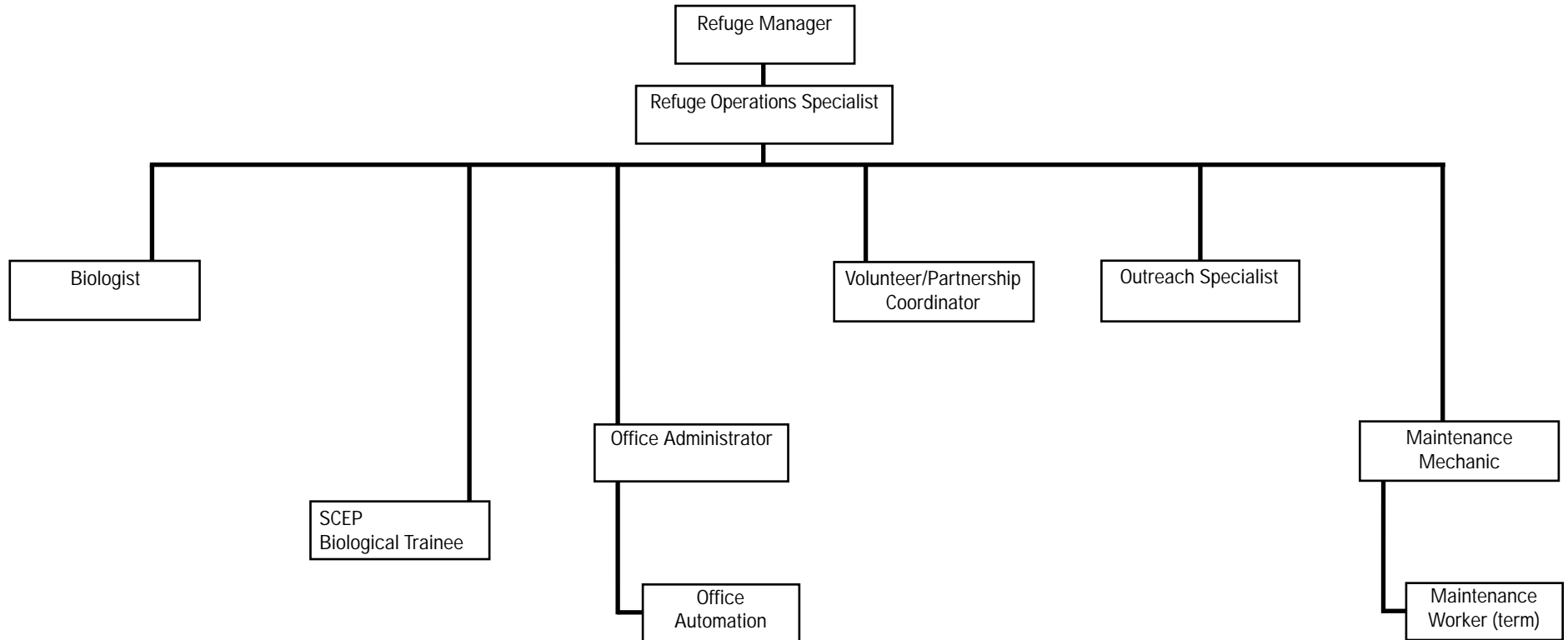
**wildlife-dependent recreational use** – “A use of a refuge involving hunting, fishing, wildlife observation and photography, or environmental education and interpretation.” These are the six priority public uses of the System as established in the National Wildlife Refuge System Administration Act, as amended. Wildlife-dependent recreational uses, other than the six priority public uses, are those that depend on the presence of wildlife. We also will consider these other uses in the preparation of refuge CCPs, however, the six priority public uses always will take precedence.

**wildlife management** – the practice of manipulating wildlife populations, either directly through regulating the numbers, ages, and sex ratios harvested, or indirectly by providing favorable habitat conditions and alleviating limiting factors.





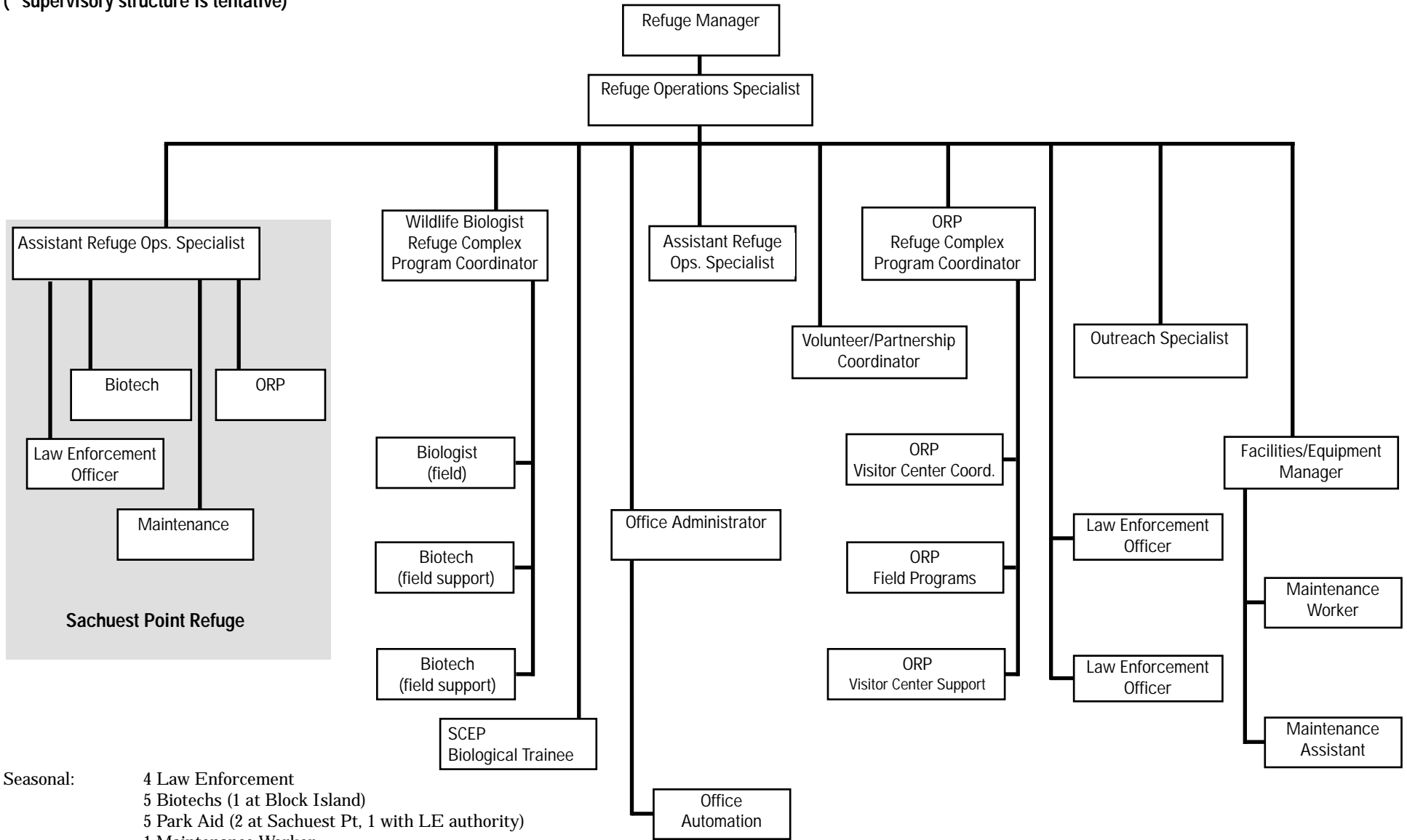
**Rhode Island National Wildlife Refuge Complex**  
Proposed Staffing for Alternative A, Current Management



Seasonal: 3 Law Enforcement  
1 Biotech

10 FTE's  
4 (1/2) FTE's

**Rhode Island National Wildlife Refuge Complex**  
**Proposed Staffing for Alternative B, the Service's Proposed Alternative**  
 (\* supervisory structure is tentative)



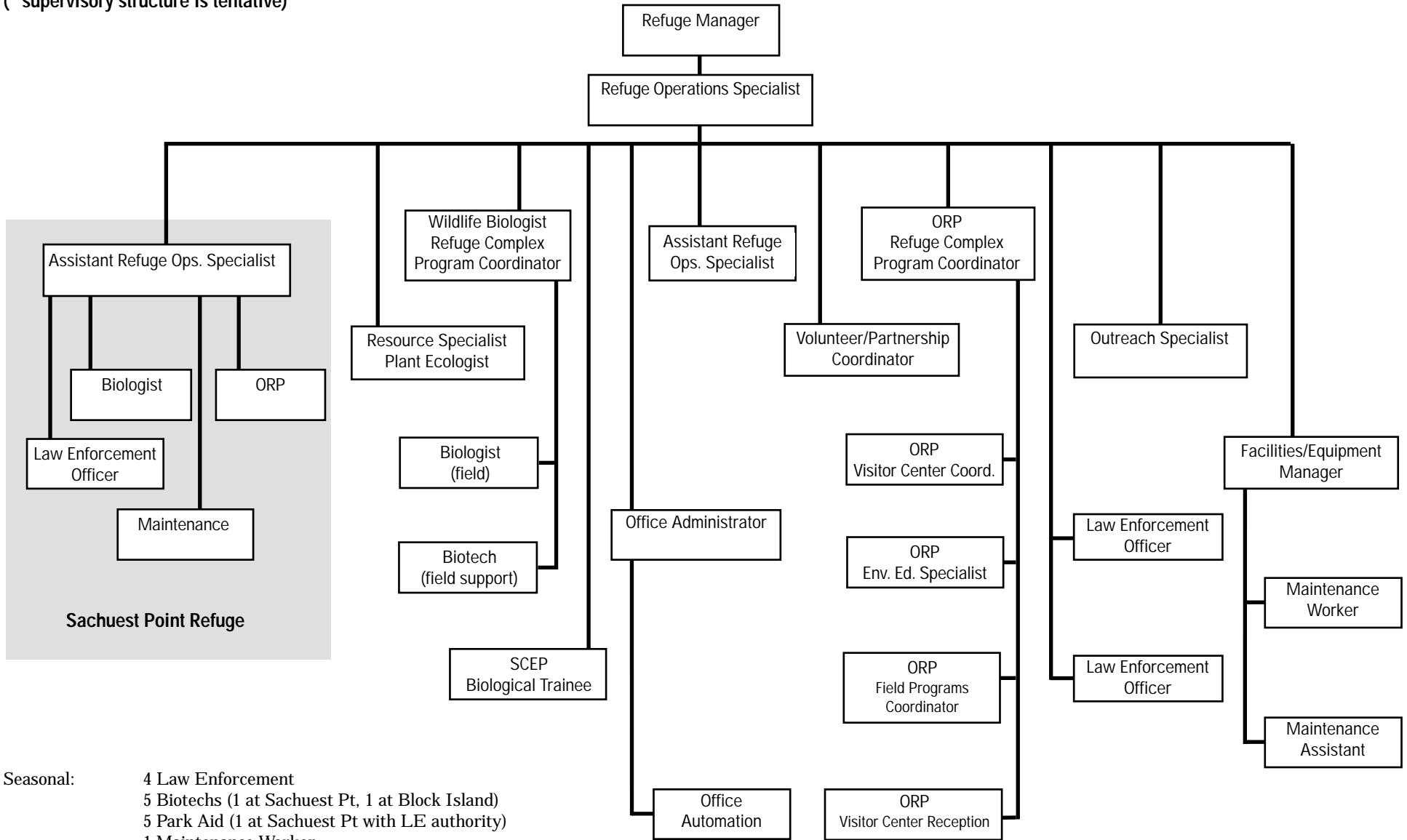
Seasonal:  
 4 Law Enforcement  
 5 Biotechs (1 at Block Island)  
 5 Park Aid (2 at Sachuest Pt, 1 with LE authority)  
 1 Maintenance Worker  
 2 Botanist/Ecologists

26 FTE's  
 17 (1/2) FTE's

# Rhode Island National Wildlife Refuge Complex

Proposed Staffing for Alternative C

(\* supervisory structure is tentative)



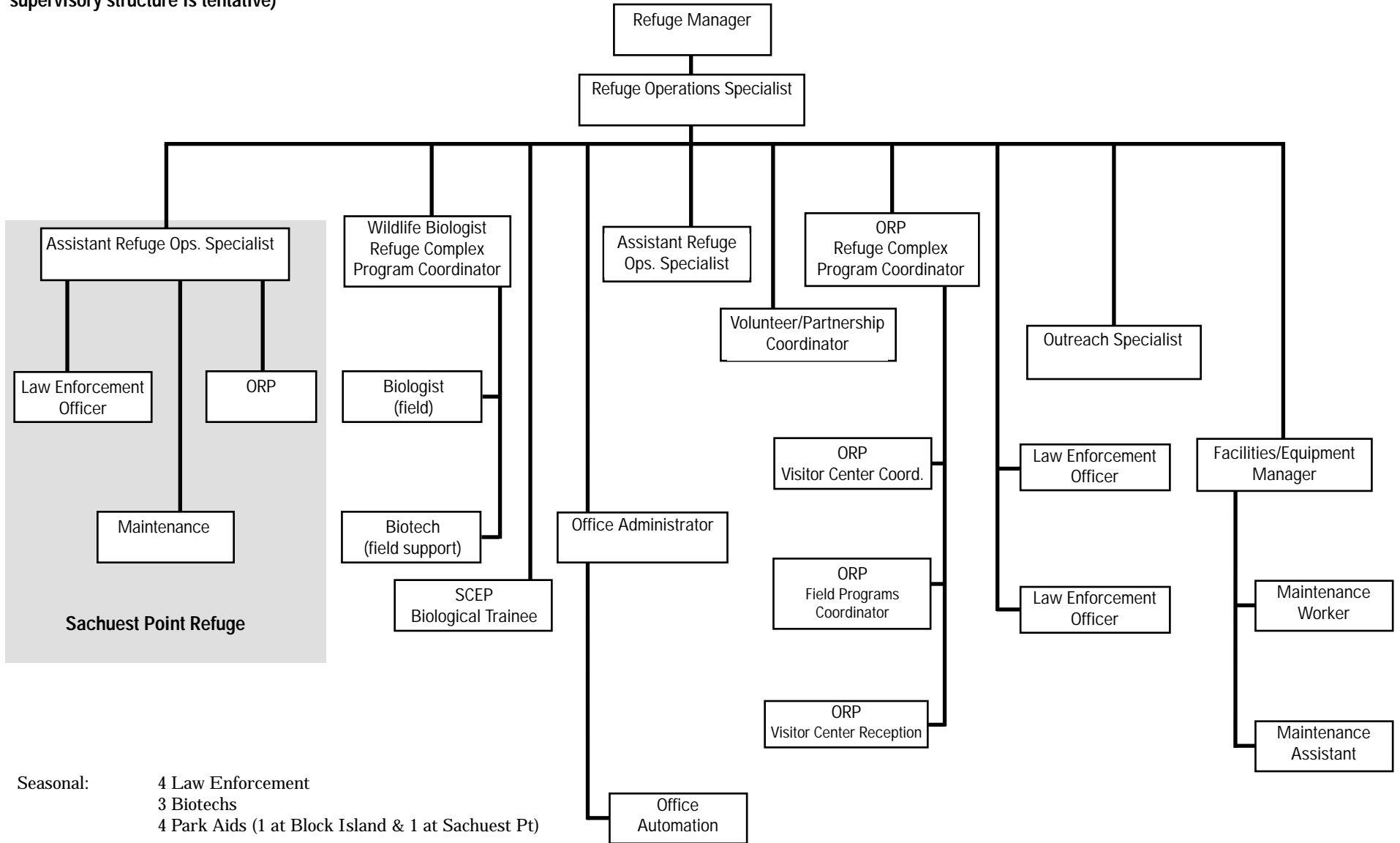
Seasonal:  
 4 Law Enforcement  
 5 Biotechs (1 at Sachuest Pt, 1 at Block Island)  
 5 Park Aid (1 at Sachuest Pt with LE authority)  
 1 Maintenance Worker

27 FTE's  
 15 (1/2) FTE's

# Rhode Island National Wildlife Refuge Complex

Proposed Staffing for Alternative D

(\* supervisory structure is tentative)



Seasonal: 4 Law Enforcement  
 3 Biotechs  
 4 Park Aids (1 at Block Island & 1 at Sachuest Pt)

24 FTE's  
 11 (1/2) FTE's

*Ongoing projects*

<b>Resource Issue</b>	<b>Alternative B (the Service's Proposed Action)</b>	<b>Was the project completed on time?</b>
Protection of piping plover	Refuge Biologist will coordinate with Plover Recovery Team and other scientists to share research and management techniques and results	yes/no
Protection of piping plover	Actively manage nesting sites on Ninigret, Trustom Pond, and Block Island Refuges. Erect fencing as proposed. Monitor active nest sites throughout nesting season. Implement restrictions on public use at nesting sites. Monitor off-Refuge nesting beaches.	yes/no
Management of mute swans	Implement the Service's policy (Memo FWS/MBMO/98-00043; based on Flyway Council recommendations) to prevent the establishment of or to eliminate mute swans. Adapt strategies as needed to pursue zero productivity on the Refuge Complex	yes/no
Hunting opportunities	Trustom Pond Refuge: continue with 20 acre upland field hunt for waterfowl.	yes/no

*Target initiation date: 2001*

<b>Resource Issue</b>	<b>Alternative B (the Service's Proposed Action)</b>	<b>Was the project completed on time?</b>
Protection of piping plover	Hire at least 5 seasonal personnel: 3 Law Enforcement and 2 Biotechs	yes/no
Least tern protection	Continue use of wire fence at Trustom Pond site, but adapt design to target smaller mammals (mink and weasel)	yes/no
Contaminant sites	Sachuest Point Refuge: Implement site closure plan for Middletown landfill, if completed	yes/no
Expand land protection program	With partners, begin active cooperative land protection and acquisition of 3,200 acres from willing sellers within selected Focus Areas.	yes/no
Cultivate relationship with Friends group	Conduct semi-annual meetings with the Friends group to promote communication and evaluate implementation of the MOU	yes/no
Manage non-wildlife dependent activities	Ninigret Refuge: implement outreach program and begin to enforce restrictions on dog walking and bicycling (which had been allowed while the old runways were in place).	yes/no
Manage non-wildlife dependent activities	Sachuest Point Refuge: initiate intensive effort to phase out dog walking and jogging.	yes/no

*Target initiation date: 2002*

<b>Resource Issue</b>	<b>Alternative B (the Service's Proposed Action)</b>	<b>Was the project completed on time?</b>
Piping plover protection	Close Block Island Refuge to vehicles above mean high tide line from April 1 to Sept. 15 each year.	yes/no
Piping plover protection	Develop written cooperative agreements with at least 5 South Shore landowners with existing plover nesting sites	yes/no
Piping plover protection	Work with RI DEM to move State campground near Ninigret Refuge away from plover breeding habitat	yes/no
Piping plover protection	Develop education & outreach plan for plover programs	yes/no
Harlequin duck protection	Work with RI DEM to regulate a shoreline hunting closure. Standardize protocol for weekly harlequin duck counts.	yes/no
Landbird management	Evaluate recommendations in final Partners in Flight Plan, identify species of concern for Refuge, and develop management strategies to include in Habitat Management Plan.	yes/no

*Target initiation date: 2002 (continued)*

<b>Resource Issue</b>	<b>Alternative B (the Service's Proposed Action)</b>	<b>Was the project completed on time?</b>
Manage deer populations	Block Island Refuge: cooperate with Block Island partners and the Town of New Shoreham to develop a comprehensive deer management plan for the Block Island Focus Area	yes/no
Fishing opportunities	Sachuest Point Refuge: designate access points to shoreline to control impacts and better enforce restrictions. Increase law enforcement and monitoring of public use to control access and littering. Initiate study to evaluate impact to wildlife from night fishing.	yes/no
Fishing opportunities	Sachuest Point Refuge: develop a regulation requiring spear fishing gear to be unloaded and encased while on Refuge land. Monitor this activity to evaluate its impact on other wildlife-dependent uses.	yes/no
Hunting opportunities	Ninigret Refuge: allow RI DEM to administer waterfowl hunt, from boat only, in Coon Cove and the marshland in the barrier beach parcel.	yes/no
Manage non-wildlife dependent activities	Hire an additional law enforcement officer to work between Sachuest Point and Block Island Refuges.	yes/no
Curriculum-based environmental education	Sponsor Teach the Teacher workshops at Ninigret and Trustom Pond Refuges.	yes/no
Service visibility	Establish a consistent Service presence on Sachuest Point Refuge by assigning permanent staff to the station.	yes/no

*Target initiation date: 2003*

<b>Resource Issue</b>	<b>Alternative B (the Service's Proposed Action)</b>	<b>Was the project completed on time?</b>
Piping plover protection	Reassess nesting carrying capacity (Ninigret & Trustom Pond Refuges)	yes/no
Piping plover protection	Begin cooperative monitoring of gull colony to ascertain whether gulls are limiting piping plover nesting on Block Island	yes/no
Piping plover protection	Formalize agreement with the Town of New Shoreham (Block Island Refuge) to ensure that beach would remain closed to ORVs during plover nesting, if active plover nests are located.	yes/no
Piping plover protection	Prioritize plover-related research needs	yes/no
Protect and restore American burying beetle population (Block Island Focus Area)	Participate in annual efforts to monitor American burying beetle on southern Block Island (led by RI DEM, The Nature Conservancy, and the Service's New England Field Office)	yes/no
Protect and restore beach strand communities	Work with partners to initiate an intensive outreach campaign targeting beach front landowners and designed to increase protection of barrier beach habitat and piping plover nesting areas (2 seasonal park aids would be needed to implement this project)	yes/no
Monitoring and protection of bald eagle, piping plover, and American burying beetle on Block Island	Hire a seasonal biological technician to monitor roosting eagles, nesting piping plover, colonial waterbirds, and American burying beetle populations. Also, identify threats or opportunities for land acquisition.	yes/no
Protection of black duck at Trustom Pond and Chafee Refuges	Treat at least 5 acres/year of invasive wetland plants	yes/no

*Target initiation date: 2003 (continued)*

<b>Resource Issue</b>	<b>Alternative B (the Service's Proposed Action)</b>	<b>Was the project completed on time?</b>
Maintain biological integrity of natural communities	Develop a Refuge Complex Habitat Management Plan	yes/no
Collect baseline biological information	Establish a priority list of baseline biological inventory needs to better understand and document the biodiversity on the Refuge Complex. Priorities: determine the distribution of species and habitat types listed in Appendix A, and survey the aquatic resources in Trustom Pond. (Use Regional CENSUS database or other regional database with GIS capabilities).	yes/no
Manage deer populations	Ninigret Refuge: cooperate with RI DEM and adjacent landowners to develop a comprehensive deer management plan for the greater Charlestown area.	yes/no
Manage waterfowl	With RI DEM, develop a waterfowl Management Plan for Pettaquamscutt Cove and lower Narrow River.	yes/no
Fishing opportunities	Ninigret Refuge: designate access trails to shoreline for fishing on Ninigret pond to minimize impact on habitat. Actively enforce restrictions. Require commercial shell fishermen to operate under special use permit.	yes/no
Wildlife observation and photography opportunities	Ninigret Refuge: complete construction of "Trail Through Time"	yes/no
Wildlife observation and photography opportunities	Trustom Pond: reduce unnecessary trails and restruct public use to trails only.	yes/no
Curriculum-based environmental education opportunities	Sponsor "Teach the Teacher" workshops at Sachuest Point Refuge.	yes/no
Curriculum-based environmental education opportunities	Block Island Refuge: initiate formal partnership with The Nature Conservancy to facilitate sharing of resources, and assist in curriculum development and implementation. Hire a seasonal Park Aid for assistance. Use Beane Point as a classroom laboratory or housing for educators.	yes/no
Interpretive opportunities	Chafee Refuge: ensure that RI DEM constructs interpretive kiosk along South County Bike Trail according to Refuge stipulations.	yes/no

*Target initiation date: 2004*

<b>Resource Issue</b>	<b>Alternative B (the Service's Proposed Action)</b>	<b>Was the project completed on time?</b>
Piping plover protection	Hire a Rhode Island Piping Plover Coordinator	yes/no
Piping plover protection	Develop integrated Predator Management, Monitoring, and Evaluation Plan for Refuge Complex	yes/no
Protection of Harlequin duck at Sachuest Point Refuge	Monitor public use to determine impacts of shoreline public use activities on ducks.	yes/no
Management of rare plant habitats	Ninigret Refuge: develop a Site Plan and monitoring program for rare plant sites	yes/no
Restore early successional habitat	Complete restoration of 385 total acres between Ninigret, Trustom Pond, and Sachuest Point Refuges. Develop and implement a maintenance and monitoring schedule for these projects. Evaluate and document opportunities for restoring sandplain gerardia, bushy rockrose, and New England blazing star in restored areas.	yes/no
Restore early successional habitat	Restore additional 15 acres of grassland on private land near Trustom Pond Refuge	yes/no
Restore early successional habitat	Develop and implement a plan to maintain an additional 40 acres of early successional shrub and grasslands habitat on Sachuest Point Refuge.	yes/no



*Target initiation date: 2004 (continued)*

<b>Resource Issue</b>	<b>Alternative B (the Service's Proposed Action)</b>	<b>Was the project completed on time?</b>
Collect baseline biological information	Begin inventories on highest priority projects. Use regional CENSUS database or other database with GIS capabilities	yes/no
Manage invasive plant species	Identify and map current distribution of invasive plant species on the Refuge Complex.	yes/no
Manage deer populations in the South Shore ABS	Chafee Refuge: cooperate with RI DEM, adjacent landowners, and the Town of Narragansett to develop a comprehensive deer management plan for the "Foddering Farms" parcel	yes/no
Ensure clean up of existing and no new acquisition of contaminated sites	Certify at least one staff member in Level I environmental site assessment in accordance with American Society for Testing and Materials (ASTM).	yes/no
Monitoring and Inventory Plan	Develop a Refuge Complex Monitoring and Inventory Plan	yes/no
Block Island Focus Area resource management	Cooperate with Block Island partners in developing a Cooperative Resource Protection Plan and Public Use and Access Plan.	yes/no
Improve visitor services	Complete a Visitor Services Plan for the Refuge Complex to establish strategic goals and priorities. Hire 2 new outdoor rec. planners to implement.	yes/no
Interpretive opportunities	Complete renovation of Sachuest Point Visitor Center.	yes/no
Curriculum-based environmental education opportunities	Ninigret Refuge: update existing MOA with Frosty Drew to ensure compatibility with Refuge Complex Visitor Services Plan. Also, evaluate compatibility of for-profit operations.	yes/no
Wildlife observation and photography opportunities	Sachuest Point Refuge: eliminate redundancy in trails. Designate and enforce shoreline access points	yes/no
Manage non-wildlife dependent activities	Trustom Pond: hire additional law enforcement personnel to provide more consistent and thorough outreach and enforcement of incompatible, non-wildlife dependent activities.	yes/no
Manage non-wildlife dependent activities	Ninigret Refuge: hire an additional seasonal law enforcement officer to provide more consistent, thorough outreach and enforcement of incompatible activities.	yes/no

*Target initiation date: 2005*

<b>Resource Issue</b>	<b>Alternative B (the Service's Proposed Action)</b>	<b>Was the project completed on time?</b>
Piping plover protection	Implement highest priority research projects.	yes/no
American Burying Beetle restoration	Assess opportunities for expanding distribution of beetles in Block Island Focus Area	yes/no
Bald Eagle management	Develop site plans if eagle usage of Refuge warrants management	yes/no
Protection of marsh and wading bird habitat	Inventory high probability sites on the Refuge Complex	yes/no
Protection of shorebird concentration areas	Map key staging and feeding areas in South Shore ABS. Develop and implement a Monitoring Plan	yes/no
Protection of amphibians and reptiles	Develop environmental education and interpretation programs. Work with Friends and volunteers to reduce amphibian and reptile road mortality during spring migration.	yes/no
Protection of amphibians and reptiles	Develop Inventory and Monitoring Plan for amphibians and reptiles on the Refuge Complex.	yes/no

## Target initiation date: 2005 (continued)

Resource Issue	Alternative B (the Service's Proposed Action)	Was the project completed on time?
Protection of seal haul-out areas	Determine if human disturbance is a threat. If necessary, reduce human disturbance through public outreach efforts or restricted access.	yes/no
Management of rare plant habitats	Trustom Pond Refuge: develop a Site Plan for rare plant sites.	yes/no
Promote grassland restoration through outreach and education	Establish native grassland interpretive/demonstration areas on both Ninigret and Trustom Pond Refuges, develop exhibit at new Visitor Center, and conduct interpretive programs using volunteers and staff.	yes/no
Develop habitat plan and improve water quality in Trustom and Cards Ponds	With partners and adjacent landowners, develop Site Management and Monitoring Plan for Trustom and Cards Ponds. The plan would include monitoring and inventory efforts for species of management concern, invasive plants and animals, and submerged aquatic vegetation.	yes/no
Manage deer populations	Trustom Pond Refuge: cooperate with RI DEM, Town of South Kingstown, and adjacent landowners to develop a comprehensive deer management plan.	yes/no
Manage invasive plant species	Prioritize treatment acres to prevent new invasions or eradicate plants recently established where they don't have a stronghold yet.	yes/no
Manage invasive plant species	Treat at least 25 acres/year of invasive exotic species, including at least 5 acres of wetlands plants, using chemical, mechanical, prescribed fire and biological treatments. Hire maintenance worker licensed for herbicide use.	yes/no
Ensure protection of cultural resources on the Refuge Complex	Initiate a cultural resource overview of Refuge complex. Conduct field investigations of Ninigret and Trustom Pond Refuges. Record sites in a GIS database. Train at least one law enforcement officer in regulations associated with Archeological Resources Protection Act (ARPA)	yes/no
Ensure protection of cultural resources on the Refuge Complex	Develop a partnership with the Narragansett Tribal Council to cooperate on site interpretation and protection.	yes/no
Protect water quality of Narrow River Watershed/Pett Cove	Become actively involved in interagency partnership recommended in the 1998 Coastal Resources Management Council, Narrow River Special Area Management Plan. Group would develop a comprehensive plan for the Narrow River watershed and set research and management priorities.	yes/no
Protect water quality of Narrow River Watershed/Pett Cove	Work with RI DEM, CRMC, and Towns of Narragansett and South Kingstown to create a "no wake" zone in Pettaquamscutt Cove to reduce erosion and destruction of salt marshes.	yes/no
Ensure clean up of contaminated sites	Obtain Refuge project funding to clean up military debris at Ninigret Refuge	yes/no
Manage non-wildlife dependent activities	Block Island Refuge: develop cooperative agreement with Town of New Shoreham law enforcement	yes/no
Manage non-wildlife dependent activities	Refuge Complex: Eliminate all inappropriate, incompatible uses	yes/no
Manage non-wildlife dependent activities	Chafee Refuge: develop a strategy to consolidate shoreline access easement of adjacent landowners.	yes/no
Manage non-wildlife dependent activities	Chafee Refuge: cooperate with the Town of Narragansett and RI DOT to construct handicapped accessible observation platforms at Middle Bridge. Construct a second platform at Bridgeport Commons. Designate an interpretive kayak/canoe trail.	yes/no
Interpretive opportunities	Trustom Pond Refuge: make eastern-most trail handicapped-accessible. Develop watchable wildlife pamphlet, species checklist, and self-guided trail maps.	yes/no
Improve public use partnerships	Develop formal cooperative agreements with current partners to identify cost sharing, technical exchange, environmental education and interpretive opportunities.	yes/no
Curriculum-based environmental education	Chafee Refuge: cooperate with local schools and partners to develop a classroom curriculum featuring the Narrow River estuary and Pettaquamscutt Cove.	yes/no
Curriculum-based environmental education	Sachuest Point Refuge: Develop formal partnership with Norman Bird Sanctuary to facilitate sharing of resources. Cooperate with towns of Middletown and Newport and local schools to develop programs featuring Refuge resources.	yes/no

*Target initiation date: 2005 (continued)*

<b>Resource Issue</b>	<b>Alternative B (the Service's Proposed Action)</b>	<b>Was the project completed on time?</b>
Curriculum-based environmental education	Ninigret Refuge: establish classroom sites featuring grassland restoration and salt pond ecology. Develop an EE facility for the Refuge Complex. Develop a volunteer EE Corps to help implement programs at Ninigret and Trustom Pond Refuges.	yes/no
Curriculum-based environmental education	Trustom Pond Refuge: work with partners to develop an environmental education program featuring Pond and restoration work	yes/no
Interpretive opportunities	Develop interpretive programs for each Refuge of the Rhode Island Refuge Complex	yes/no
Interpretive opportunities	Construct interpretive exhibit and kiosk at the South County Museum, near Chafee Refuge.	yes/no
Visitor facilities	Complete construction of Visitor Center/Headquarters for Refuge Complex. Implement recommendations for interior facility design from August 1999 Project Identification Document. Hire a Visitor Service Specialist and Receptionist to manage the new center.	yes/no
Wildlife observation and photography opportunities	Chafee Refuge: designate interpretive canoe and kayak routes. Consider use of guided trips using a concessionaire.	yes/no
Wildlife observation and photography opportunities	Sachuest Point Refuge: ensure at least one trail is reconstructed to allow for handicapped accessibility. Develop additional interpretive kiosks, improve signage, and create "watchable wildlife" pamphlets and multi-lingual literature.	yes/no
Wildlife observation and photography opportunities	Trustom Pond Refuge: reduce unnecessary trails, make at least one platform barrier-free, and restrict public use to trails only.	yes/no
Fishing opportunities	Ninigret Refuge: if determined feasible, construct up to two additional observation platforms and/or viewing blinds at grassland restoration project area, and on Ninigret Pond at Coon Cove.	yes/no
Improve road and entry signs	Complete a Refuge Complex Facilities and Sign Plan	yes/no

*Target initiation date: 2006*

<b>Resource Issue</b>	<b>Alternative B (the Service's Proposed Action)</b>	<b>Was the project completed on time?</b>
Manage rare plant habitats	Survey and map rare plant sites on the Refuge Complex (outside of Ninigret and Trustom Pond Refuges)	yes/no
Resource protection	Chafee Refuge: allow fishing from boats and shoreline, but designate access points to shore to reduce impact to marsh. Create barrier-free fishing structures.	yes/no
Visibility of Service	Chafee Refuge: finish posting all Refuge boundaries.	yes/no

*Target initiation date: 2007*

<b>Resource Issue</b>	<b>Alternative B (the Service's Proposed Action)</b>	<b>Was the project completed on time?</b>
Wetlands protection	Chafee Refuge: work with RI DEM to create a "no wake zone" in Pettaquamscutt Cove to minimize impacts to the salt marshes and shoreline.	yes/no
Fishing opportunities	Construct a barrier-free fishing platform at Chafee Refuge	yes/no

*Target initiation date: 2008*

<b>Resource Issue</b>	<b>Alternative B (the Service's Proposed Action)</b>	<b>Was the project completed on time?</b>
Shorebird management	Develop a Habitat Management Plan and a Wildlife Monitoring and Inventory Plan for shorebirds concentration areas on the Refuge Complex	yes/no
Amphibians and reptiles	Complete baseline inventory for amphibians and reptiles on Trustom Pond, Ninigret, and Sachuest Point Refuges	yes/no
Restoration of wetlands	Develop Site Plans and initiate restoration of the following top wetland projects: 25 acres at Sachuest Point and 70 acres at Ninigret Refuge.	yes/no
Restore grassland communities & promote restoration through education, outreach, and interpretation	Develop a proposal for grassland restoration on Sachuest Point, Chafee, and Block island Refuges. Restoration proposals should evaluate opportunities for regal fritillary butterfly reintroduction.	yes/no
Restore grassland communities & promote restoration through education, outreach, and interpretation	Establish "cooperative extension" outreach program and materials to provide technical support for interested landowners.	yes/no
Management of rare plant habitats	Assess potential for establishing or restoring seabeach amaranth, sandplain gerardia, small whorled pagonia, bushy rockrose, New England blazing star, and other former candidate plant species with potential habitat	yes/no
Wildlife observation and photography	Sachuest Point Refuge: develop a barrier free platform and trail. Develop watchable wildlife pamphlets, species checklists, and self-guided trail maps	yes/no
Wildlife observation and photography	Trustom Pond Refuge: evaluate opportunity to construct two photo blinds	yes/no
Visitor facilities	Construct a visitor contact facility on Ninigret Refuge. Hire at least one seasonal Park Aid to help manage the visitor contact station and the Visitor Center.	yes/no
Increase Service visibility and recognition	Complete boundary posting on Chafee Refuge and on any new Refuge acquisitions.	yes/no

*Target initiation date: 2010*

<b>Resource Issue</b>	<b>Alternative B (the Service's Proposed Action)</b>	<b>Was the project completed on time?</b>
Potential reintroduction of northeastern beach tiger beetles in South Shore ABS	Cooperate with USFWS New England Field Office and RI DEM to evaluate habitat potential for reintroduction within South Shore ABS.	yes/no
Potential reintroduction of regal fritillary butterfly	Cooperate with USFWS New England Field Office and RI DEM to evaluate grassland restoration projects for butterfly reintroduction.	yes/no
Cultural resources plan	Develop a Cultural Resources Protection Plan for the Refuge Complex.	yes/no

*Target initiation date: 2012*

<b>Resource Issue</b>	<b>Alternative B (the Service's Proposed Action)</b>	<b>Was the project completed on time?</b>
Potential reintroduction of northeastern beach tiger beetles in South Shore ABS	Develop a Site Plans and/or Monitoring Plans, if reintroduction sites exist on Refuge Complex.	yes/no

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# **Areas of Biological Significance and Focus Area Descriptions**

## Descriptions of Areas of Biological Significance and Focus Areas

The Focus Areas, as described in Chapter 3, contain a variety of habitats, including barrier beaches, coastal salt ponds, rivers, wetlands, forests, morainal shrublands and grasslands. Most of these areas had previously been identified as protection priorities by one or more of the following planning efforts:

- Northeast Coastal Area Study (FWS 1991)
- North American Waterfowl Management Plan–Atlantic Coast Joint Venture (FWS 1988)
- Regional Wetlands Concept Plan (FWS 1990)
- Unique Wildlife Ecosystem Concept Plan—State of Rhode Island (FWS 1979)
- Protecting our Land Resources (Rhode Island Dept of Environmental Management 1996)
- Priority Wetlands in New England (EPA 1987)
- United Nations Education, Scientific, and Cultural Organization (Bioserve designation)

### Habitat Description

Block Island falls within Bailey's *Mid Atlantic coastal plain* ecoregion, which includes Long Island and southern New Jersey. This ecoregion is typified by hemlock-white pine forests and maritime dune complexes. However, in the mid-1700's, the whole Island was clearcut for pasture and cropland. The isolation of the Island from mainland seed sources and its windy climate have inhibited the regrowth of forests. Today, the Focus Area is dominated by coastal shrubland, made up of shadbush, northern bayberry, arrowwood, and black cherry, interspersed with freshwater wetland habitats. The brackish Sachem Pond is located at the northern end of the Focus Area, and the Great Salt Pond is located just south of the Focus Area. An additional 360 freshwater ponds are scattered throughout the Island. Other habitats found within the Focus Area include morainal grasslands, beaches, and sand dunes.

The Sakonnet-Westport Rivers ABS and South Shore ABS are classified in Bailey's Ecoregion as the *Narragansett/Bristol Lowland and Islands* subsection. The Focus Areas within these ABS's

contain morainal salt ponds, brackish estuaries, maritime dune communities, tidal salt marshes, small rivers, freshwater ponds and islands, morainal grasslands, forested and scrub shrub wetlands, and upland forests.

The morainal salt ponds are unique geologic features that only occur in southwestern Massachusetts and Rhode Island. Narrow, wave-washed sand or gravel beaches dominated by beachgrass separate the ponds from the ocean. Historically, seasonal breaching opened the salt ponds to periodic tidal flushing and maintained the ponds in brackish conditions. Today, most of the coastal salt ponds in Rhode Island have permanent breachways to the ocean. Trustom and Cards Ponds, located within and adjacent to Trustom Pond NWR, respectively, are the only two coastal salt ponds without permanent breachways. The dune complexes associated with the salt ponds include sand or gravel beaches, dunes dominated by beachgrass, seaside goldenrod, and beach rose, and tidal mud and sand flats.

Forested and shrub wetlands in the Focus Areas are mainly dominated by red maple, viburnum, high bush blueberry, sweet pepperbush, dogwood, alder and willow. The upland forests are primarily dominated by mixed black and white oak, with pitch pine and scrub-shrub thickets. Much of the historic morainal grassland was converted to agriculture with early settlement. The Service is successfully restoring some of these same lands back to native grasses on the Ninigret and Trustom Pond Refuges, and on neighboring private lands under a cooperative venture.

The Wood-Pawcatuck Rivers ABS is located at the intersection of Bailey's *North Atlantic Coast* and *Lower New England* ecoregions. As such, the communities found in this ABS reflect both coastal and inland influences. The Pawcatuck River is a meandering river system with a mainstem length of 50 kilometers. The Wood-Pawcatuck Focus Areas include several large unfragmented wetland and forested ecosystems, including the three largest wetland complexes in Rhode Island. Most wetlands are palustrine forests dominated by red maple followed by white pine. Associated with the red maple-white pine swamps are black gum, Atlantic white cedar, hemlock, sweet pepperbush, swamp azalea, common winterberry, and spicebush. Other wetland types include marshes

and scrub-shrub wetlands. Communities found in upland habitats vary with soil type, hydrology, and other factors, but are generally dominated by oak-hemlock-hickory forests, with associated species of white pine, white ash, American beech, black birch, sugar maple, and black gum. The Wood-Pawcatuck Rivers Focus Areas also supports a number of globally rare natural communities, including pitch pine-scrub oak barrens, and Atlantic white cedar bogs.

## Major Wildlife Values

*Block Island ABS, including the Block Island NWR expansion Area*

Block Island hosts significant occurrences of rare and declining species and is among the most important refugia for globally rare plants and animals in New England. The lack of predatory mammals provides a safe haven for various species whose populations have been devastated by meso-predators on the mainland, including many ground nesting bird species and the only breeding population of the Federally endangered American burying beetle east of the Mississippi. Block Island is extremely important to the survival and recovery of the American burying beetle. As the only surviving population in the East, it will serve as the source of animals in all efforts to re-establish the species to historic localities east of the Mississippi River.

Other Federally listed species found within the Focus Area include the piping plover (threatened), American bald eagle (threatened), and sea beach amaranth (threatened).

Block Island is a critical stepping stone for many bird species migrating between southern New England and eastern Long Island. The relatively undeveloped nature and north-south orientation of the Island make it one of the most important migratory bird habitats on the East Coast. Annual bird surveys by The Nature Conservancy documented as many as 250 species of waterfowl, raptors, shorebirds and Neotropical landbirds during migration, including 20 Nongame Species of Management Concern, and eleven NAWCA Priority Waterfowl Species.

Block Island is particularly important to Neotropical migrants. Annual mist net surveys conducted by The Nature Conservancy at two

locations within the Focus Area sampled approximately 6000 individuals and documented 95 species of Neotropical songbirds. The Focus Area hosts the largest gull colony in the State, and a wading bird colony that consists of the State-listed black crowned night heron, yellow crowned night heron, American oyster catcher, great egret, and snowy egret. Block Island has three times the density of breeding American woodcocks than the mainland, has a wintering population of common loons that number in the hundreds, and is one of the few places where American black ducks are more numerous than mallards.

Other noteworthy species within the Focus Area include salt marsh sharp-tailed sparrow, northern harrier, sea-beach knotweed, and the only cliff-nesting barn owls known to occur in the United States. The geographic isolation of the Island is promoting speciation and have given rise to the Block Island meadow vole (subspecies) and genetically distinct populations of northern water snake and eastern garter snake. Research is currently ongoing to determine if these genetic differences warrant reclassification to species and sub-species.

*South Shore ABS and Sakonnet-Westport Rivers ABS, including Ninigret NWR, Sachuest NWR, and Trustom Pond NWR expansion areas*

Focus Areas within the South Shore and Sakonnet-Westport Rivers ABSs support high concentrations of our Trust resources. Federally listed species found within these ABSs include the small-whorled pogonia (endangered), sandplain gerardia (endangered), piping plover (threatened), bald eagle (threatened), roseate tern (endangered), and seabeach amaranth (threatened). The northeastern beach tiger beetle (threatened) historically bred on the barrier islands and beaches within the Focus Areas.

Approximately 50 species of shorebirds feed or nest on barrier beaches, mud flats, marshes and small islands in the Focus Areas. The Federally listed piping plover and roseate tern, and the State threatened least tern nest in several of the Focus Areas. The Service currently manages seven nesting areas within the South Shore ABS that support approximately 70 percent of Rhode Island's piping plover population, primarily through cooperative agreements with private

landowners and partners. Focus Areas in the Sakonnet-Westport Rivers ABS support the remaining population, where Audubon Society of Rhode Island has taken the lead in their protection and management. Permanent protection of these nesting sites is critical to plover recovery in Rhode Island as breeding pairs rotate among these sites in response to changes in beach physiology, weather conditions, and public use pressures.

Several of the South Shore Focus Areas are also potential reintroduction sites for the Federally threatened northeastern beach tiger beetle. The Service was recently successful in reintroducing tiger beetles to a site on Monomoy Refuge in Massachusetts. Napatree Point, one of the South Shore Focus Areas, has been identified as the highest priority for reintroduction in Rhode Island if permanent protection is secured. Reintroduction of the tiger beetle to beaches in Rhode Island would significantly contribute to the recovery of the species (Susi von Oettingen, pers. comm.) The salt ponds, barrier beach, salt marshes and associated upland habitats provide nesting, feeding, spawning, migration and wintering habitat for waterfowl, wading and shore birds, passerines, raptors, fish, and shellfish. The coastal salt pond habitat supports at least 300 species of migratory birds, including all thirteen species of NAWCA Priority Waterfowl Species and 25 nongame Species of Management Concern. During the winter months when freshwater ponds are frozen, the coastal ponds provide food and open water for waterfowl. Nutrients from the salt ponds benefit nearshore ocean habitats and support numerous species of diving seaducks, including the harlequin duck, common eider, grebes, scaups, and scoters. The coastal salt ponds also provide important feeding and nurseries for Anadromous fish and commercially important shellfish, including Atlantic salmon, American eel, striped bass, blueback herring, alewife, American shad, Atlantic sturgeon, shortnose sturgeon, blue crab, lobster, scallops, hard- and soft-shelled clams, and mussels.

The morainal shrublands and grasslands provide important stopover and breeding habitat for migratory species, particularly Neotropical landbirds. The morainal grassland habitat in the South Shore has experienced drastic declines over the last century. Service efforts to restore grasslands has brought back several regionally declining and nongame species of management concern, including upland sandpiper, grasshopper sparrow, Henslow's sparrow, eastern meadowlark, and bobolink.

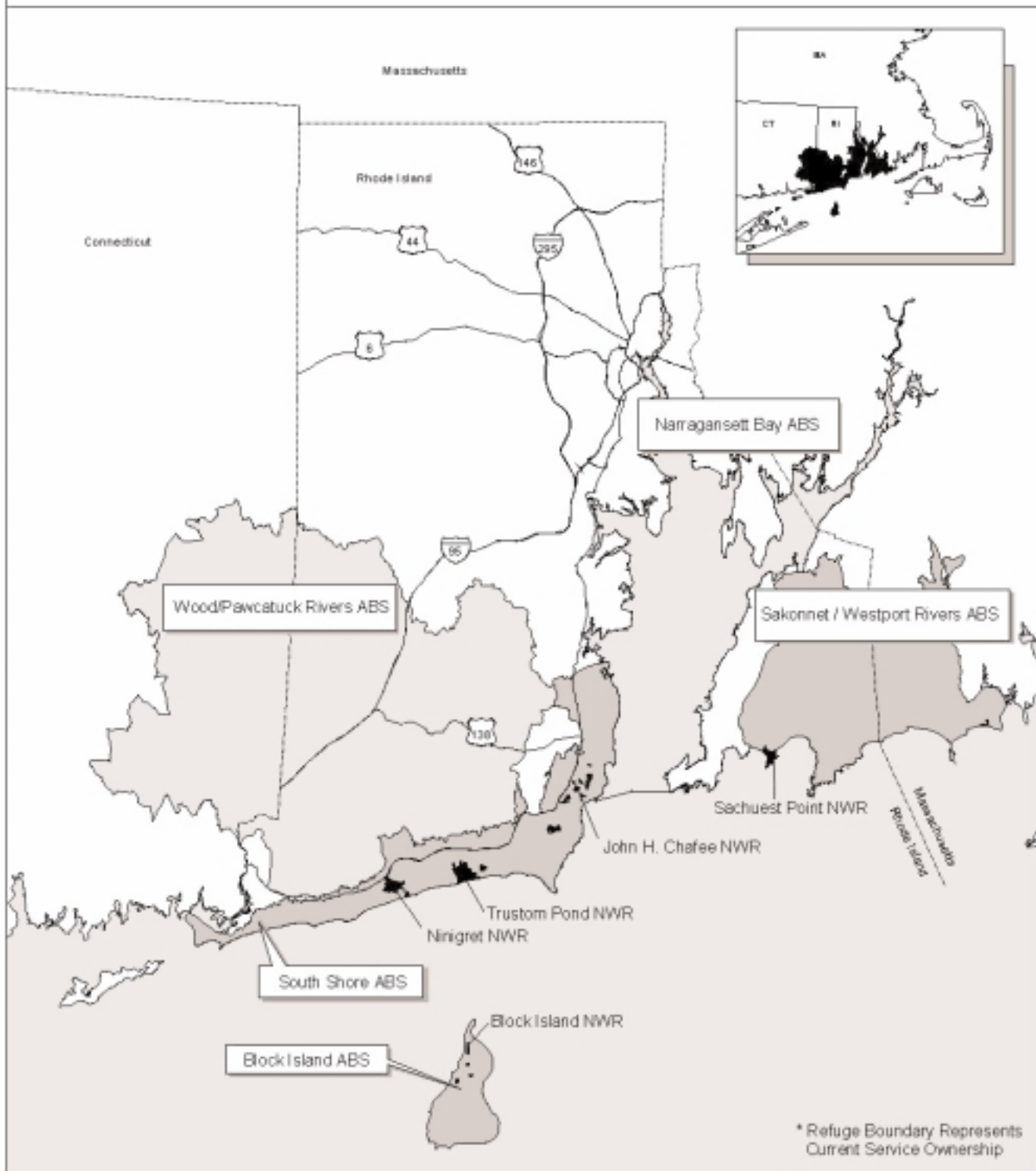
*Wood-Pawcatuck Rivers ABS, including Trustom Pond NWR expansion area*

The Wood-Pawcatuck Rivers ABS is geologically and biologically linked to the South Shore ABS through the Charlestown moraine north of U.S. Route 1. Although the Focus Areas in the Wood-Pawcatuck Rivers ABS do not support high concentrations of our Trust species, they contain approximately 70 percent of the globally rare species found in the State. The pristine, diverse habitats in these Focus Areas support a high diversity of species, including forest nesting Neotropical migrants, Federally listed and globally rare plants and invertebrates, anadromous fish species, and numerous species of mammals, amphibians, and reptiles. Some notable species include the small whorled pogonia (Federally threatened), northern parula warbler, cerulean warbler, prothonotary warbler, eastern spadefoot toad, ringed boghaunter (former candidate), regal fritillary butterfly (former candidate), spatterdock darter, eastern pearlshell mussel, pale green pinion moth, yellow fringed orchid, and New England blazing star.

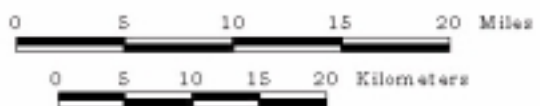
The extensive network of riverine systems in the Wood-Pawcatuck Rivers Focus Areas provide spawning and feeding habitats for anadromous fish species such as Atlantic salmon, American eel, alewife, American shad, and Atlantic and shortnose sturgeon.

# Areas of Biological Significance (ABS) in southern Rhode Island

## Rhode Island NWR Complex Comprehensive Conservation Plan



**Data Sources:**  
 RI015 state data (www.ecd.un.edu/igls-015).  
 ABS & four areas created by Southern New  
 England/New York Bight Coastal Program.  
 USFWS refuge boundaries.  
 Map prepared for Rhode Island NWR Complex  
 Comprehensive Conservation Plan,  
 December 2000.  
 Not to be used for legal purposes.

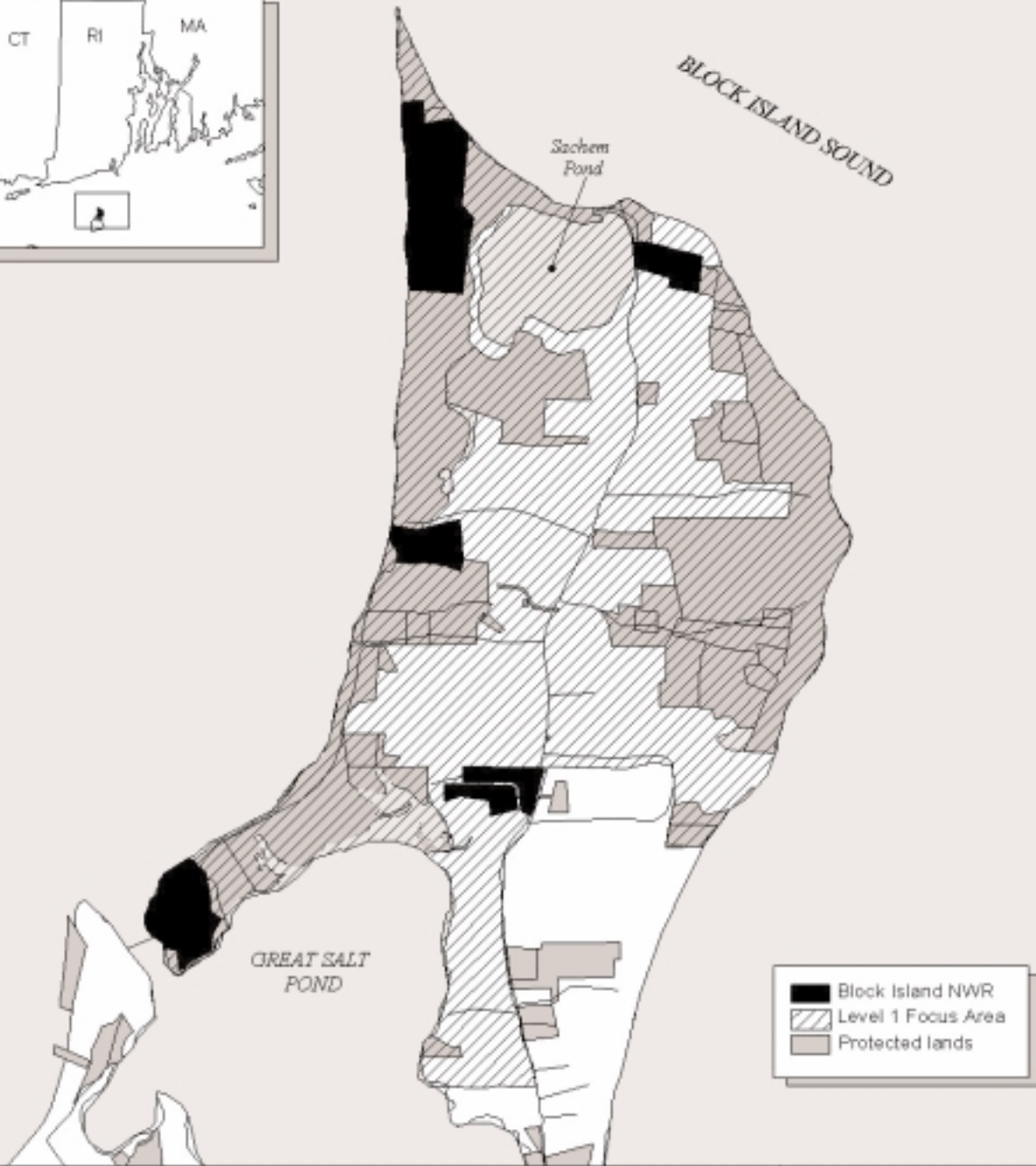


\* Refuge Boundary Represents  
 Current Service Ownership

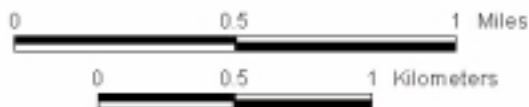


Scale: 1:550,000

## Land Protection Focus Areas Block Island NWR Expansion *Rhode Island NWR Complex Comprehensive Conservation Plan*



**Data Sources:**  
 RIGIS state data ([www.sdc.uri.edu/rigis-sprf/](http://www.sdc.uri.edu/rigis-sprf/));  
 USFWS refuge boundaries.  
 Map prepared for Rhode Island NWR Complex  
 Comprehensive Conservation Plan,  
 December 2020.  
 Not to be used for legal purposes.

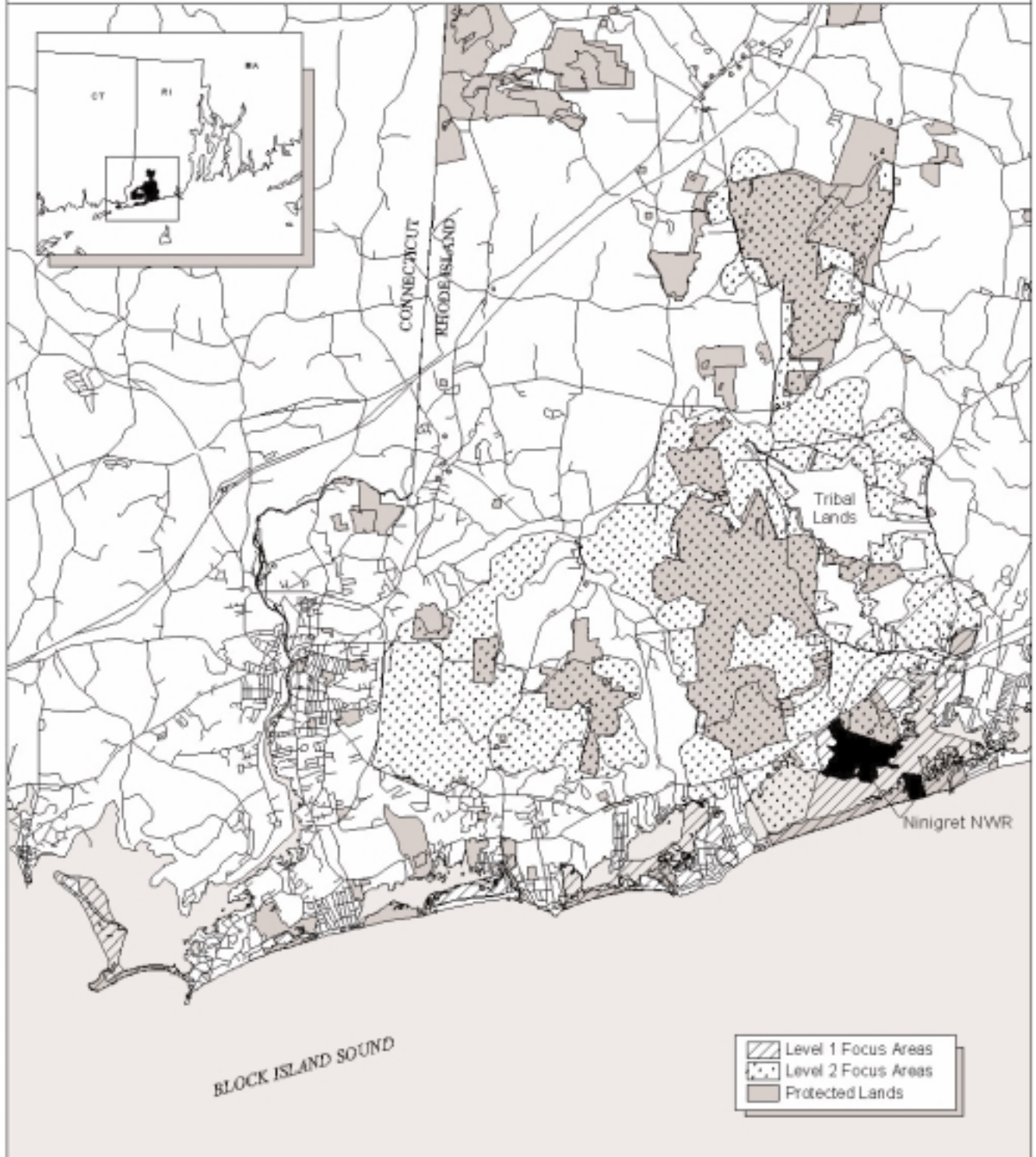




# Land Protection Focus Areas

## Ninigret NWR Expansion

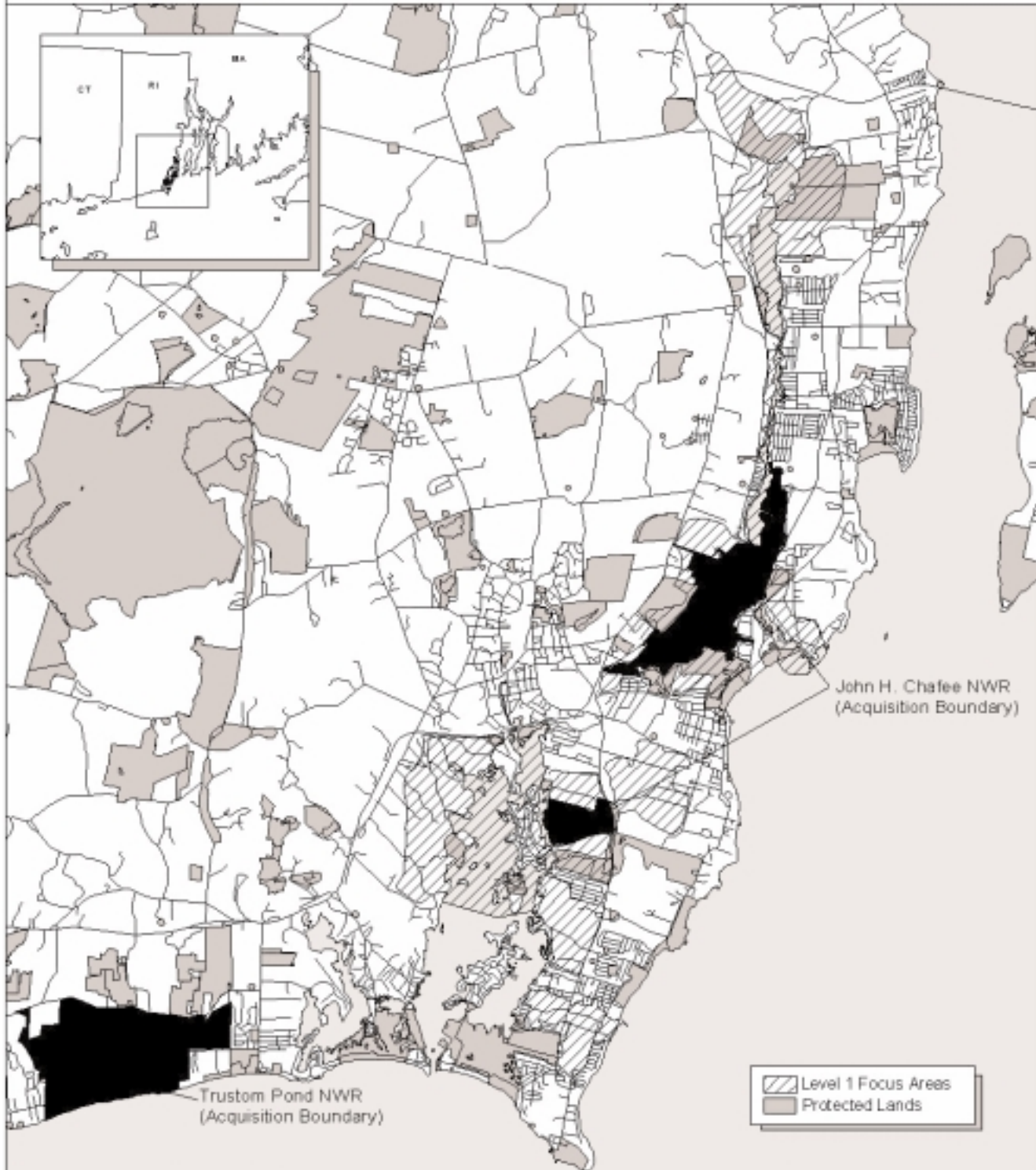
### *Rhode Island NWR Complex Comprehensive Conservation Plan*



**Data Sources:**  
 RIGIS state data (www.education.ri.gov)  
 ADE & focus areas created by Southern New  
 England/Northeast York Right Coastal Program.  
 USFWS refuge boundaries.  
 Map prepared for Rhode Island NWR Complex  
 Comprehensive Conservation Plan.  
 December 2000.  
 Not to be used for legal purposes.



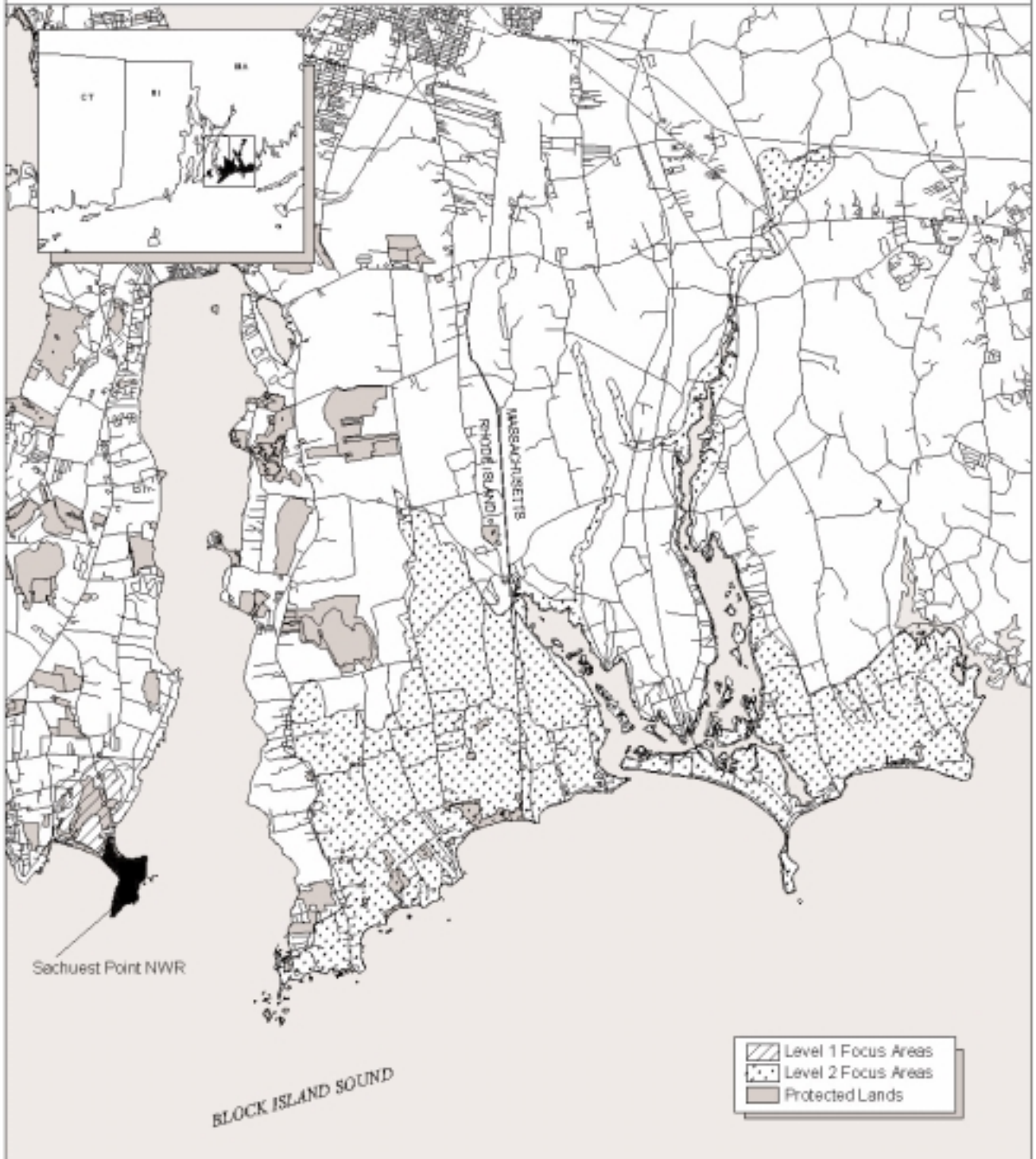
## Land Protection Focus Areas John H. Chafee NWR Expansion *Rhode Island NWR Complex Comprehensive Conservation Plan*



**Data Sources:**  
 RIDIS state data ([www.ado.state.ri.us/ado/ri-ado/](http://www.ado.state.ri.us/ado/ri-ado/)).  
 AFS & Isour areas created by Southern New England/New York Bight Coastal Program.  
 USFWS refuge boundaries.  
 Map prepared for Rhode Island NWR Complex Comprehensive Conservation Plan, December 2009.  
 Not to be used for legal purposes.



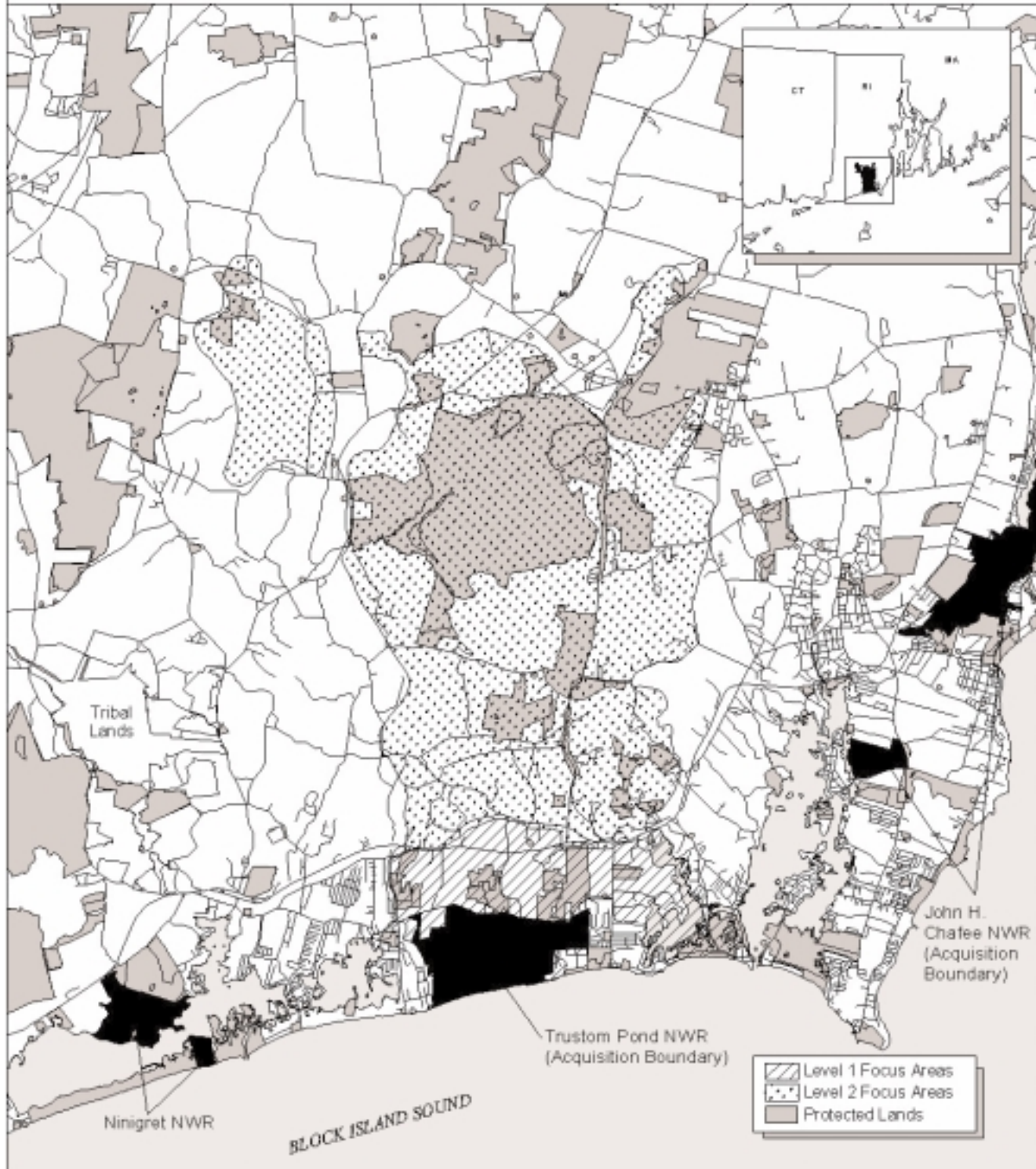
# Land Protection Focus Areas Sachuest Point NWR Expansion *Rhode Island NWR Complex Comprehensive Conservation Plan*



RI GIS state data ([www.ado.uri.edu/igis/](http://www.ado.uri.edu/igis/))  
 ARI & focus areas created by Southern New  
 England/New York State Coastal Program.  
 USFWS refuge boundaries.  
 Map prepared for Rhode Island NWR Complex  
 Comprehensive Conservation Plan,  
 December 2000.  
 Not to be used for legal purposes.



# Land Protection Focus Areas Trustum Pond NWR Expansion *Rhode Island NWR Complex Comprehensive Conservation Plan*



RI015 state data (www.eco.state.ri.us/ri015-010).  
 A95 & focus areas created by Southern New  
 England/New York Right Coastal Program.  
 USFWS refuge boundaries.  
 Map prepared for Rhode Island NWR Complex  
 Comprehensive Conservation Plan,  
 December 2000.  
 Not to be used for legal purposes.

