

New Jersey Invasive Species Strike Team
United States Forest Service Grant
New Jersey Priority Forest Focal Areas Report – March 2014

Introduction

The New Jersey Invasive Species Strike Team (“NJISST” or “Strike Team”) selected twenty priority forest focal areas to prioritize early detection / rapid response (“ED/RR”) efforts in New Jersey. This effort is intended to support the Strike Team and its partners, along with private forest landowners and their consulting foresters.

Methods

The Strike Team utilized the Landscape Project (version 3.1, product of the NJ Division of Fish & Wildlife, Endangered and Nongame Species Program – “ENSP”) as the basis of forest analyses. Peter Winkler (GIS specialist with ENSP) provided spatial data for all contiguous forest patches (including upland and wetland types). Attributes include: patch size, core patch size, core area index, Landscape Project patch rank, and Landscape Project rare animal species richness.

In addition, he performed analyses to incorporate additional data sources including the New Jersey Natural Heritage Program, New Jersey Audubon Society and The Nature Conservancy. For each of these sources, analyses were performed to determine the percentage of overlap with each forest patch. For Natural Heritage Program data, the percentage overlap of named Priority Sites was determined. In addition, rare plant species richness per forest patch was calculated utilizing their grid data. For New Jersey Audubon Society, the percentage overlap of Important Bird Areas (“IBA”) with each forest patch was calculated. For The Nature Conservancy, the percentage overlap of resilience category hexagons categorized as ‘Far Above Average’ and ‘Above Average’ with each forest patch was calculated.

Based upon the above, the ten largest forest patches from each of the five Landscape Regions (i.e., Atlantic Coastal, Delaware Bay, Piedmont Plains, Pinelands and Skylands) were selected for comparison within their respective Landscape Region (See Appendix A). For each forest patch, each measured attribute value was converted to the relative percentage of the maximum value across all fifty forest patches (See Appendix A). The sum of each relative attribute value was summed across all attributes to provide each forest patch with an overall score. [Note: For simplicity, each attribute was provided equal weight. It is recognized that some attributes are partially correlated, but there was no effort to remove this correlation from the analyses.]

Results

Forest patches with the top five overall scores within each Landscape Region were designated as the core of each priority forest focal area. In some cases, adjacent highly ranked patches were grouped to form a single focal area. Table 1 summarizes selected priority forest focal areas and Map 1 depicts each focal area. A total of over 525,000 acres of forest habitat were selected across 25 focal areas (includes 34 contiguous forest patches). The approximate total forest acreage by region was: Atlantic Coast (7,000), acres, Delaware Bay (74,000), Piedmont Plains (36,000), Pinelands (242,000), Skylands (166,000).

The majority of these forest patches are located within public lands (Table 1), but significant portions are found on private lands creating ample opportunities to partner with Federal, state, county, and municipal governments along with private land trusts and private landowners.

Table 1. Summary of Priority Forest Focal Areas

Landscape Project Region	Priority Forest Focal Area ID	Priority Forest Focal Area Name	PCID(s)	Total Relative Score (Maximum value = 800)	Priority Forest Focal Area Acreage	Public Lands
1. Atlantic Coastal Landscape	1	Hartshorne Woods	1685	314	855	Hartshorne Woods (Monmouth County)
1. Atlantic Coastal Landscape	2	Forsythe North	875	329	467	Eno's Pond Park (Ocean County), Forsythe National Wildlife Refuge
1. Atlantic Coastal Landscape	3	Manahawkin	734	378	3,549	Forsythe National Wildlife Refuge, Manahawkin Wildlife Management Area
1. Atlantic Coastal Landscape	4	Forsythe South	683	292	800	Forsythe National Wildlife Refuge
1. Atlantic Coastal Landscape	5	Bass River South	607	342	1,193	Bass River State Forest, Forsythe National Wildlife Refuge
2. Delaware Bay Landscape	6	Millville	1931	377	8,104	Millville Wildlife Management Area
2. Delaware Bay Landscape	7	Peaslee	2619, 2726	410	26,464	Peaslee Wildlife Management Area
2. Delaware Bay Landscape	8	Belleplain	1896, 1187, 1475	398	22,358	Belleplain State Forest
2. Delaware Bay Landscape	9	Maple Lake	2753, 2876	352	11,179	Maple Lake Wildlife Management Area
2. Delaware Bay Landscape	10	Tuckahoe	2617	379	6,333	Estell Manor Park (Atlantic County), Great Egg Harbor Wildlife Management Area, Tuckahoe Wildlife Management Area
3. Piedmont Plains Landscape	11	Sourlands	14339, 12887, 12610	328	18,626	Alexauken Creek Wildlife Management Area, Highfields Preserve (NLT), Sourland Mountain Preserve (Hunterdon County), Sourland Mountain Preserve (Somerset County), Washington Crossing State Park. Multiple municipal and land trust properties.
3. Piedmont Plains Landscape	12	Baldpate	11230	285	5,034	D&R Canal State Park, Ted Stiles Preserve at Baldpate Mountain (Mercer County), Washington Crossing State Park
3. Piedmont Plains Landscape	13	Assunpink	7833	322	2,781	Assunpink Wildlife Management Area
3. Piedmont Plains Landscape	14	Earle	8918	218	4,243	Earle Naval Weapons Base
3. Piedmont Plains Landscape	15	Thundergut Pond	216, 222	352	4,886	Thundergut Pond Wildlife Management Area
4. Pinelands Landscape	16	Byrne	4734	503	41,281	Byrne State Forest, Greenwood Forest Wildlife Management Area
4. Pinelands Landscape	17	Greenwood	4657	565	35,148	Double Trouble State Park, Forked River Wildlife Management Area, Greenwood Forest Wildlife Management Area,
4. Pinelands Landscape	18	Wharton West	3236	425	17,458	Wharton State Forest
4. Pinelands Landscape	19	Wharton East	3515	607	81,075	Wharton State Forest
4. Pinelands Landscape	20	Bass River North	3459	648	67,451	Bass River State Forest, Bass River North State Forest, Byrne State Forest, Penn State Forest, Stafford Forest Wildlife Management Area, West Pine Plains Natural Area
5. Skylands Landscape	21	High Point	12469, 12578	487	31,717	Hainsville Wildlife Management Area, High Point State Park, Masphipacong Bogs Preserve (TNC), Reinhardt Preserve (NLT), Stokes State Forest
5. Skylands Landscape	22	Delaware Water Gap	11896	601	47,891	Blair Creek Preserve (NLT), Delaware Water Gap National Recreation Area, Dunfield Creek Natural Area, Flatbrook Roy Wildlife Management Area, Stokes State Forest, Sunfish Pond Natural Area, Tillmans Ravine Natural Area, Trout Brook Wildlife Management Area, Walpack Wildlife Management Area, White Lake Wildlife Management Area, Worthington State Park
5. Skylands Landscape	23	Wawayanda	12204	473	35,558	Bearfort Mountain Natural Area, Hewitt State Forest, Wawayanda State Park, Wawayanda Hemlock Glen Natural Area, Wawayanda Swamp Natural Area. Private - Newark Watershed lands
5. Skylands Landscape	24	Sparta	11090	485	23,675	Mahlon Dickerson Reservation (Morris County), Rockaway River Wildlife Management Area, Sparta Mountain Wildlife Management Area, Weldon Brook Wildlife Management Area
5. Skylands Landscape	25	Wildcat Ridge	10089, 10209	457	27,113	Buck Mountain Preserve (NLT), Buck Mountain State Park, Farney State Park, Mount Hope Park (Morris County), Picatinny Arsenal, Silas Condict Park (Morris County), Wildcate Ridge Wildlife Management Area
Totals					525,241	



NJ Invasive Species
Strike Team

Priority Forest Focal Areas

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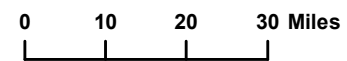
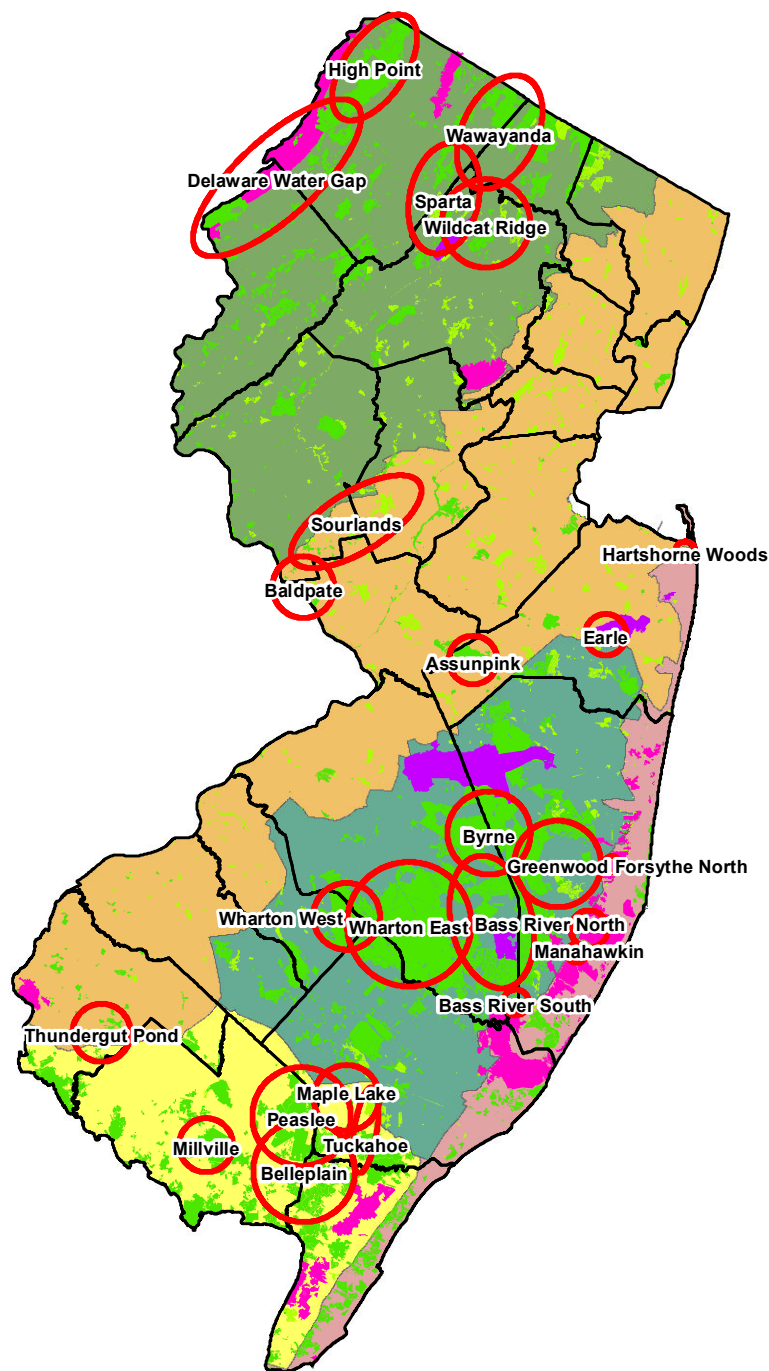
USFS Grant



Map prepared by Michael Van Clef, Ph.D.
Science Director

Legend

- Priority Forest Focal Areas
 - Federal Lands - Military Bases
 - Federal Lands - USFWS/NPS
 - State Open Space
 - County Open Space
- Landscape Regions**
- (1) Atlantic Coastal Landscape
 - (2) Delaware Bay Landscape
 - (3) Piedmont Plains Landscape
 - (4) Pinelands Landscape
 - (5) Skylands Landscape



Landscape Project Region	PCID	Raw Values									Scores - Relative to Maximum Values									Total Relative Score
		Total Hectares	Core Hectares	Core Area Index	LP Patch Rank	LP Patch Richness	Rare Plant Richness	Heritage Priority Site Overlap (%)	IBA Overlap (%)	TNC Resilience Category Overlap (%)	Core Hectares	Core Area Index	LP Patch Rank	LP Patch Richness	Rare Plant Richness	Heritage Priority Site Overlap (%)	IBA Overlap (%)	TNC Resilience Category Overlap (%)		
1. Atlantic Coastal Landscape	734	1,437	1,102	77	4	15	11	0	100	72	4	88	80	24	8	0	100	73	378	
1. Atlantic Coastal Landscape	875	189	85	45	4	12	13	66	100	0	0	52	80	19	10	68	100	0	329	
1. Atlantic Coastal Landscape	607	484	317	66	4	11	12	7	100	51	1	75	80	18	9	7	100	52	342	
1. Atlantic Coastal Landscape	1685	346	177	51	3	3	1	0	100	87	1	59	60	5	1	0	100	89	314	
1. Atlantic Coastal Landscape	683	324	187	58	5	12	7	0	100	0	1	66	100	19	5	0	100	0	292	
1. Atlantic Coastal Landscape	474	311	112	36	4	15	4	0	40	98	0	41	80	24	3	0	40	100	289	
1. Atlantic Coastal Landscape	657	483	299	62	4	12	11	0	100	0	1	71	80	19	8	0	100	0	280	
1. Atlantic Coastal Landscape	686	151	62	41	5	11	5	0	100	0	0	47	100	18	4	0	100	0	269	
1. Atlantic Coastal Landscape	1093	297	135	45	4	11	2	0	100	0	1	52	80	18	1	0	100	0	252	
1. Atlantic Coastal Landscape	892	146	55	38	4	10	1	0	100	0	0	44	80	16	1	0	100	0	241	
2. Delaware Bay Landscape	2726	8,737	6,236	71	4	23	40	1	100	56	24	82	80	37	29	1	100	57	411	
2. Delaware Bay Landscape	1896	4,058	3,309	82	4	19	31	2	100	55	13	94	80	31	23	2	100	56	398	
2. Delaware Bay Landscape	1931	3,281	2,582	79	4	18	6	17	100	45	10	90	80	29	4	18	100	46	377	
2. Delaware Bay Landscape	2617	2,564	1,726	67	4	16	10	0	100	80	7	77	80	26	7	0	100	82	379	
2. Delaware Bay Landscape	2619	1,977	1,411	71	4	12	22	0	100	60	6	82	80	19	16	0	100	61	364	

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2. Delaware Bay Landscape	2753	2,462	1,852	75	4	7	5	0	100	62	7	86	80	11	4	0	100	63	352	
2. Delaware Bay Landscape	1564	4,195	3,359	80	4	15	24	1	100	19	13	92	80	24	18	1	100	19	347	
2. Delaware Bay Landscape	1475	2,607	1,930	74	4	10	21	28	100	0	8	85	80	16	15	29	100	0	333	
2. Delaware Bay Landscape	1187	2,387	1,745	73	4	14	16	0	100	17	7	84	80	23	12	0	100	17	322	
2. Delaware Bay Landscape	2876	2,064	1,309	63	3	6	6	1	100	1	5	73	60	10	4	1	100	1	254	
3. Piedmont Plains Landscape	222	1,066	516	48	4	5	10	38	100	59	2	56	80	8	7	39	100	60	352	
3. Piedmont Plains Landscape	216	911	416	46	4	3	8	4	100	87	2	52	80	5	6	4	100	89	338	
3. Piedmont Plains Landscape	14339	5,495	2,556	47	4	21	8	0	100	44	10	53	80	34	6	0	100	45	328	
3. Piedmont Plains Landscape	7833	1,126	335	30	5	17	2	0	100	56	1	34	100	27	1	0	100	57	321	
3. Piedmont Plains Landscape	11230	2,038	863	42	4	8	22	16	100	7	3	49	80	13	16	16	100	7	285	
3. Piedmont Plains Landscape	12610	878	306	35	4	4	4	0	100	0	1	40	80	6	3	0	100	0	231	
3. Piedmont Plains Landscape	12887	1,167	386	33	3	12	6	0	100	0	2	38	60	19	4	0	100	0	223	
3. Piedmont Plains Landscape	8918	1,719	906	53	4	6	6	0	0	59	4	61	80	10	4	0	0	60	218	
3. Piedmont Plains Landscape	12304	1,129	339	30	4	4	2	7	0	28	1	34	80	6	1	7	0	29	159	
3. Piedmont Plains Landscape	12222	1,436	286	20	4	10	8	0	0	0	1	23	80	16	6	0	0	0	126	

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4. Pinelands Landscape	3459	27,308	23,312	85	4	29	54	97	100	91	91	98	80	47	40	100	100	93	648	
4. Pinelands Landscape	3515	32,824	25,626	78	4	28	58	60	100	86	100	90	80	45	43	62	100	88	607	
4. Pinelands Landscape	4657	14,230	12,400	87	4	31	33	79	95	84	48	100	80	50	24	81	95	86	565	
4. Pinelands Landscape	4734	16,714	13,871	83	4	22	31	29	100	84	54	95	80	35	23	30	100	86	503	
4. Pinelands Landscape	3236	7,068	5,598	79	4	18	28	15	100	66	22	91	80	29	21	15	100	67	425	
4. Pinelands Landscape	5994	7,111	5,205	73	5	30	14	2	100	57	20	84	100	48	10	2	100	58	423	
4. Pinelands Landscape	4062	7,864	5,324	68	4	17	14	1	100	75	21	78	80	27	10	1	100	77	394	
4. Pinelands Landscape	5633	9,430	5,482	58	4	18	18	1	100	60	21	67	80	29	13	1	100	61	373	
4. Pinelands Landscape	1301	7,542	5,169	69	4	16	15	0	100	23	20	79	80	26	11	0	100	23	339	
4. Pinelands Landscape	3745	6,388	3,356	53	4	12	11	0	66	87	13	60	80	19	8	0	66	89	336	
5. Skylands Landscape	11896	19,389	13,198	68	5	62	136	6	100	64	52	78	100	100	100	6	100	65	601	
5. Skylands Landscape	11090	9,585	7,038	73	5	34	51	15	100	64	27	84	100	55	38	15	100	65	485	
5. Skylands Landscape	12469	7,469	5,356	72	5	46	48	3	100	70	21	82	100	74	35	3	100	71	487	
5. Skylands Landscape	12578	5,371	3,893	72	5	34	45	18	100	69	15	83	100	55	33	19	100	70	475	
5. Skylands Landscape	12204	14,396	10,951	76	4	30	42	10	100	72	43	87	80	48	31	10	100	73	473	
5. Skylands Landscape	10089	6,597	3,648	55	5	34	69	8	100	64	14	63	100	55	51	8	100	65	457	
5. Skylands Landscape	10209	4,380	2,696	62	5	33	25	32	98	51	11	71	100	53	18	33	98	52	436	
5. Skylands Landscape	11334	7,295	4,475	61	4	22	3	0	100	77	17	70	80	35	2	0	100	79	384	
5. Skylands Landscape	11373	5,064	3,881	77	4	20	4	3	0	98	15	88	80	32	3	3	0	100	321	
5. Skylands Landscape	5499	5,189	1,655	32	5	14	9	0	100	10	6	37	100	23	7	0	100	10	282	