

**Northeast  
State Wildlife Action Plan  
&  
Integrated Natural Resource  
Management Plan Workshop**

**Workshop Summary**

**June 3-4, 2008  
Boston, Massachusetts**



## Executive Summary

On June 3-4, 2008, the Office of the Deputy Under Secretary of Defense (Installations and Environment) (ODUSD(I&E)) and the Department of Defense (DoD) Legacy Program, with support from the Association of Fish and Wildlife Agencies (AFWA), sponsored a Northeast State Wildlife Action Plan (SWAP) and Integrated Natural Resource Management Plan (INRMP) Workshop at the John Hancock Hotel and Conference Center in Boston, Massachusetts. Approximately twenty-one natural resource and wildlife personnel attended from a variety of organizations, including: Connecticut Department of Environmental Protection Wildlife Division, Massachusetts Division of Fisheries & Wildlife, New York State Department of Environmental Conservation, U.S. Fish and Wildlife Service (USFWS), U.S. Geological Society (USGS), Federal Highway Administration (FHWA), Army, Navy, and Air Force (*Appendix A*). The purpose of this workshop was to unite participants and identify how DoD, state wildlife agencies, and other relevant agencies can work together to identify problems and solutions relating to SWAPs and INRMPs in the Northeast region. It is hoped that the connections established, the regional pilot projects crafted, and the issues discussed will improve overall natural resource management in the region.

Peter Boice (ODUSD(I&E)) welcomed participants and explained the purpose of the workshop on Day One. Opening remarks were also made by Wayne MacCallum, Director of Massachusetts Division of Fisheries & Wildlife. Presentations on the first day were given by Tom French (Massachusetts Division of Fisheries & Wildlife), Peter Boice, Ray Rainbolt (Fort Drum), Herb Bergquist (USFWS), and Kevin Moody (FHWA) describing their respective organizations and approaches to cooperative regional planning (*Appendices B—F*). The afternoon was spent in breakout groups working to answer some fundamental questions about integrating SWAPs and INRMPs (*Appendix G*). Following the breakout groups, participants came back together to brainstorm potential pilot projects that could be discussed further the following day, and later implemented.

On the second day, participants identified eight key projects and formed groups to determine a “way forward” for each project. Breakout group questions were provided to guide the discussion and to focus the groups on some key project issues, such as determining the next steps needed to ensure the implementation of the project (*Appendix I*). After the pilot project report-outs, the workshop concluded with the entire group identifying next steps for the group as a whole and closing remarks from Peter Boice.

# Table of Contents

Executive Summary _____	2
Table of Contents _____	4
Introduction _____	5
Day One— June 3, 2008 _____	7
Day Two—June 4, 2008 _____	12
Appendix A: List of Participants _____	15
Appendix B: Tom French’s Presentation _____	18
Appendix C: Peter Boice’s Presentation _____	33
Appendix D: Ray Rainbolt’s Presentation _____	48
Appendix E: Herb Bergquist’s Presentation _____	66
Appendix F: Kevin Moody’s Presentation _____	83
Appendix G: Breakout Questions—Day One _____	95
Appendix H: Potential Project Ideas _____	97
Appendix I: Breakout Questions—Day Two _____	100

# Introduction

The Department of Defense (DoD) is responsible for creating programs and implementing management strategies to conserve and protect biological resources on its land while helping to ensure long-term sustainability of its resources for military testing and training missions. DoD develops and implements Integrated Natural Resource Management Plans (INRMPs) at its installations to ensure military operations and natural resources are integrated and consistent with stewardship and legal requirements.

Similarly, state wildlife agencies are responsible for managing and conserving all resident fish and wildlife species. As part of that responsibility, and as a requirement of the federal State Wildlife Grants program, each state must complete a State Wildlife Action Plan (SWAP), technically known as a Comprehensive Wildlife Conservation Strategy. SWAPs outline actions needed to conserve wildlife and natural resources before both become too rare and costly to protect. The completion of the SWAPs was a historic first step forward in the management and protection of wildlife in the United States.

During INRMP development and implementation, an installation is required to consult with its state wildlife agency and the U.S. Fish and Wildlife Service (USFWS) to coordinate its planned course of action. Similarly, a state wildlife agency is required to consult with federal agencies and other stakeholders needs when creating its SWAP. However, the degree to which each organization involves the other varies according to a number of factors, including resources present on DoD land, availability of personnel and fiscal resources, and regional interests.

In addition to the requirements stated above, DoD, USFWS, and the Association of Fish and Wildlife Agencies (AFWA) signed a formal Memorandum of Understanding (MOU)

in January 2006. The MOU requires that the three parties enter into a cooperative program of INRMP development and implementation with mutually agreed upon fish and wildlife conservation objectives to satisfy the goals of the Sikes Act. Therefore, in order to support the overarching goals and objectives set forth by the MOU, as well as the specific goals and objectives of SWAPs and INRMPs to bring together key stakeholders in the region, the fifth in a series of workshops was held in the Northeast region. For purposes of this workshop, the Northeast region was defined as Maine, New Hampshire, Vermont, New York, Massachusetts, Rhode Island, and Connecticut. The primary focus of this series of workshops is to create ways to integrate SWAPs and INRMPs.

## Day One—May 8, 2007

The workshop opened with introductory remarks by Peter Boice (Office of the Deputy Under Secretary of Defense (Installations and Environment) [ODUSD(I&E)]). He described the purpose of the workshop—to bring together groups of people that are working *near* each other, but not necessarily *with* each other. Wayne MaCcallum (Director, Massachusetts Division of Fisheries & Wildlife) also made opening remarks, discussing the current partnerships in the region and sparking ideas for new initiatives.

The morning continued with Tom French (Massachusetts Division of Fisheries & Wildlife) presenting an overview of SWAPs and Massachusetts' SWAP as an example plan (*Appendix B*). In his overview of SWAPs, Tom French emphasized the need for collaboration and partnership across agencies, since wildlife issues cross both geographic and political boundaries. He encouraged participants to become familiar with and learn from each other to create partnerships that can meet mutual goals for regional wildlife and habitat. Tom French then transitioned to sharing an overview of Massachusetts's Wildlife Action Plan. The greatest challenge the state faces is loss of habitat, largely due to development. The action plan promotes conservation through biological information collection, environmental regulation, coordination and partnerships, education, and habitat restoration, protection, and management. Massachusetts is a leading example in partnering, having more land trusts than any other state.

Peter Boice followed Tom French's presentation, providing an overview of INRMPs (*Appendix C*). He described the Sikes Act, which requires installations to create and implement INRMPs, and also delineates the required elements that must be contained in the INRMP. The INRMP planning teams are required to involve USFWS and the appropriate state wildlife agency to ensure proper consideration of fish and wildlife. However, the degrees to which these and other agencies are consulted vary; for example, USFWS may only review INRMPs and may not be intimately involved in the

creation process. Peter Boice reiterated the hope that this workshop would promote increased communications and forge partnerships which extend into the future. He also informed the group of additional INRMP tools that are available to further enhance INRMP development, implementation, and best management practices. In his conclusion, Peter Boice gave a summary of prior SWAP/INRMP workshops and discussed various projects that resulted from these collaborative forums.

Ray Rainbolt (Fort Drum) followed Peter Boice's overview of INRMPs and presented Fort Drum's Draft INRMP as an example. He shared his experience in updating Fort Drum's INRMP in cooperation with the development of the DoD Legacy INRMP Template Project. This project brought together representatives from Military Services and DoD to create an INRMP template that would be easier for all stakeholders to develop, implement, and review. The template also aimed to facilitate the incorporation of SWAPs into INRMPs and vice versa. The project assisted Fort Drum in developing its INRMP so that it reflected the new DoD INRMP template. Ray Rainbolt described INRMPs as being an internal assessment for installations to see how they are doing and a justification for funds spent on natural resource management. He continued that INRMPs also provide an external assessment to the state and public, showcasing the work being done on a DoD installation. He stressed that no two installations are alike, and for a plan to be a success, natural resource managers need to tailor a plan that works for their installation.

Following Ray Rainbolt's presentation, Herb Bergquist (USFWS) spoke in detail about the National Wetlands Inventory Program. He discussed the USFWS partnership with military installations and the benefits of watershed management and planning.

Kevin Moody (Federal Highway Administration) gave the final presentation, describing the benefits of incorporating transportation plans with conservation plans. He sparked conversation as to how the Federal Highway Administration and state administrations can partner with installations, state fish and wildlife agencies, and USFWS to accomplish common goals and mitigate problems in the region.

Following the presentation by Kevin Moody, Kate Hutson (Booz Allen/ ODUSD(I&E)) reviewed the breakout session instructions and questions for Day One (*Appendix G*). Participants worked with their assigned groups to answer questions about the benefits and obstacles involved in integrating INRMP and SWAP processes/information.

Once breakout discussions were complete, each group reported out their top answers for each question. A group discussion was facilitated by Kate Hutson and Peter Boice.

**Table 1-1: Considerations When Integrating INRMPs and SWAPs**

<b>Breakout Question Presented to Groups</b>	<b>Ideas/Answers Generated During Breakout Session</b>
I. Identify benefits to integrating INRMPs and SWAPs processes/information	<ul style="list-style-type: none"> <li>• Contributes to the success of both plans</li> <li>• Provides opportunity for agencies to share expertise</li> <li>• Achieves national and international environmental policies at the state level</li> <li>• Sharing allows for quality information rather than contracting for the information individually</li> <li>• Helps justify projects to obtain funding, the plans justify each other</li> <li>• Creates consistency of methods and research to prevent overlap</li> <li>• Beneficial because natural resources don't observe geographical or political boundaries</li> </ul>
II. Identify communication barriers between states, installations and DoD	<ul style="list-style-type: none"> <li>• Personality conflicts between people at different agencies</li> <li>• Staff turnovers and cuts, insufficient staffing, limited funding, inconsistent staffing</li> <li>• Talent at municipal level, incorporating staff at this level</li> <li>• Agencies misunderstanding the missions of other agencies</li> <li>• Lack of GIS-type data to coordinate with other agencies, agencies keeping data secret or unable to share (i.e. "data sensitive species")</li> <li>• Don't know who to contact at different agencies</li> <li>• Poor infrastructure, can have problems working with contractors or central offices, need an MOU to create an infrastructure to identify POCs</li> </ul>

	<ul style="list-style-type: none"> <li>• Lack of compatibility in the administrative structure, simple things like fiscal years aren't the same</li> <li>• Moving money is difficult, military interoffice purchase request can be a barrier, challenging to move money from federal government to state</li> <li>• The new metric to quantify INRMP implementation is becoming a barrier within DoD, getting USFWS or State participation may be an even greater hurdle</li> <li>• Need more opportunities (like this workshop) for face-to-face contact</li> </ul>
<p>III. Identify actions/policies/guidance, from the field level, needed to overcome these barriers</p>	<ul style="list-style-type: none"> <li>• Hold a follow-up to this meeting at Region V USFWS headquarters at Hadley in one year to discuss regional issues</li> <li>• Build personal relationships to debunk bad attitudes, set up site visits, get to know one another and put names to faces</li> <li>• Come to an agreement about INRMP review schedules, annual or every five years?</li> <li>• Need to find "real" counterparts who can get answers to questions, not the "official" contact</li> <li>• Need to change the attitude that annual reviews are like the "annual trip to the dentist," partnerships need to be created and informal interaction needs to happen many times a year</li> <li>• Need funding to attend events with other agencies</li> <li>• Northeast is a small region with limited funding, states have almost all the same issues, so there should be more work across state boundaries to share resources and ideas and make more happen</li> </ul>
<p>IV. Identify actions/policies/guidance, from headquarters, needed to overcome these barriers</p>	<ul style="list-style-type: none"> <li>• Encourage interagency training and workshop opportunities, example—fire burn workshop or invasive species</li> <li>• Field level would like help with the cooperative agreement process, maybe headquarters could issue a template</li> <li>• Publish executive summaries of INRMPs and SWAPs that decision-makers can read to get funding</li> <li>• Need headquarters staff to have substantive background in the area they are overseeing</li> <li>• Establish an overarching document that would bypass having to write cooperative agreements to</li> </ul>

	<p>move money and streamline the process</p> <ul style="list-style-type: none"><li>• Explore cost effective ways to contract out the state to do work for installations when installations have the excess funding</li><li>• Explore workarounds to the travel ban that exists in many states</li><li>• Need to ID who we send INRMPs to, who to talk to at other agencies, discrepancy between installations and USFWS</li></ul>
--	---

Following the breakout session report out, the entire group reassembled to discuss potential project ideas. Peter Boice spent a few minutes describing the types of projects the Legacy Program is looking for, and provided example projects from past workshops. He encouraged the groups to think broadly and to brainstorm as many ideas as possible. At the end of the day participants were asked to continue thinking about possible project ideas as their “homework assignment.”

## Day Two—May 9, 2007

Day two began with a brief overview of the day's agenda by Kate Hutson (*Appendix I*), followed by an entire group brainstorming session on potential projects. The group identified projects ranging from cooperative conservation initiatives to species-specific projects to tackle current critical issues (*Appendix H*). After a break and an opportunity to talk with other participants one-on-one about project ideas, participants formed breakout groups based on their interests. Eight pilot projects were identified. Groups were then asked to begin filling out project templates to assist their project's development. Participants were encouraged to think of all possible questions that had to be answered—from potential partners to funding sources.

The eight potential pilot projects generated were:

### (1) **Blanding's Turtle Population Model and Management Options**

This group will develop a population model and management options to explore the best conservation options of Blanding's Turtle populations and reduce the need for species listing. The group will kickoff their project by holding a workshop with participation by all three parties (DoD, States, and USFWS), followed by the establishment of a population model and management guide.

### (2) **Early Successional Habitat Management**

The goal of this project is to determine optimal habitat management practices for whippoorwills, woodcock, and the New England cottontail. The group will accomplish this goal by establishing baseline data for target species and managing habitat. Through partnership, the group hopes to avoid endangerment to species while mitigating encroachment on military facilities.

### **(3) Predictive Model for Forest Bat Habitat in the Northeast**

This project will collect and use existing data to develop a predictive model for forest bats. With this data, the group proposes to create and implement forest management guidelines. The guidelines will first be implemented at Fort Drum, and then expanded to other installations and areas in the Northeast. Ultimately, this project will allow for intelligent forest management to continue, or to begin supporting various missions while conserving forest bat species.

### **(4) Northeast Regional Bat Conservation Partnership**

This group will work with partners to monitor the health of Northeast regional bat populations and develop actions to reduce the spread of white-nose syndrome (WNS). Group members will collect data by summer sampling and swarming surveys, and then incorporate this data, along with the recommendations from the June 2008 WNS Meeting, into management practices. The group also proposed creating an MOU or related conservation tool to assist in bat conservation.

### **(5) Expansion and Maintenance of Grasslands in Northeast**

The goal of this project is to increase grassland habitat usability by rare species in the Northeast. Grasslands are some of the rarest ecosystems in the Northeast and many grassland species could potentially become federally listed if habitat continues to decrease. The group will accomplish their goal of habitat creation, improvement, and maintenance by identifying potential grasslands on and off installations, listing actions necessary to make areas usable by target species, and assigning a POC for each grassland.

### **(6) DoD Natural Resource Program Friends Group Development Manual**

This group will develop an easy to use guide for natural resource managers to create and manage a friends group to support natural resource management

actions and outreach. This project will benefit installations by supplying the personnel or funding required to achieve INRMP goals that would otherwise not be completed.

#### **(7) Recreational Trails Demonstration Project**

This project will develop a DoD guideline manual to enable DoD natural resource managers to create recreational trails with non-DoD funding. The project will implement the guidelines at a specified Northeast DoD facility as a demonstration project, and then distribute the product to all natural resource managers. Benefits of this project include the implementation of recreation requirements of INRMPs and improvement of relationships with states by promoting outdoor recreation.

#### **(8) Northeast Habitat Database**

This project follows on from a project proposed at the Mid-Atlantic Workshop. The project will incorporate DoD lands data into the Northeast Terrestrial Habitat Classification System (NETHCS) by identifying ways to obtain and incorporate DoD natural resource data. Follow-on projects that this group anticipates includes mapping of fish passage needs and mapping of species locations.

After each group reported on their project ideas and goals, the group as a whole was asked to consider next steps for the entire group. The following are considerations and next steps<sup>1</sup>:

- Post workshop summary on DENIX and SWAP/INRMP Workshops websites
- Distribute copies of the RFP for FY2009 Legacy Funding to participants

After the discussion of follow-up actions and next steps, Peter Boice provided closing remarks and thanked all the attendees for their active participation.

---

<sup>1</sup> Some action items identified in this Summary may have already been completed. For up to date information, please visit: <https://www.swap-inrmpworkshops.net>

# **Appendix A: List of Participants**

## North East SWAP/INRMP Workshop - Boston, Massachusetts

Name	Organization	Address	Phone	Email
Lianne Ball	U.S. Geological Survey	12201 Sunrise Valley Dr Mail Stop 301 Reston, VA 20192	703-648-4028	lball@usgs.gov
Herb Bergquist	USFWS - MA	300 Westgate Drive Hadley, MA 01035	413-253-8621	h_bergquist@fws.gov
Dee Blanton	USFWS - MA	300 Westgate Drive Hadley, MA 01035	413-253-8513	dee_blanton@fws.gov
Peter Boice	DUSDIE	1225 S. Clark Street Suite 1500 Arlington, VA 20002	703-604-0524	peter.boice@osd.mil
Thomas Brandt	Rhode Island Army National Guard	645 New London Avenue Cranston, RI 02920	401-275-4033	tom.brandt@us.army.mil
Emmett Carawan	NAVFAC Mid-Atlantic	NAVFAC Mid-Atlantic 9792 Maryland Ave Norfolk, VA 23511	757-444-1552	emmett.carawan@navy.mil
Richard Conant	New London SUBASE	SUBASENLON ENV. DIV. B-439, Room 104, Box 39, Route 12 Groton, CT 06349	860-694-5649	richard.conant@navy.mil
Jenny Dickson	CT DEP Wildlife Division	341 Milford St PO Box 1550 Burlington, CT 06013	860-675-8130	jenny.dickson@ct.gov
Tom Eagle	USFWS - MA	73 Weir Hill RD Sudbury, MA 01776	978-443-4661	tom_eagle@fws.gov
Tom French	MA Division of Fisheries & Wildlife	One Rabbit Hill Rd. Westborough, MA 01518	508-389-6355	tom.french@state.ma.us
Lewis E. Gorman III	USFWS - Washington Office	4401 N. Fairfax Dr., MS 420 Arlington, VA 22201	703-358-1911	lewis_gorman@fws.gov
Laura Henze	USFWS - Washington Office	4401 N. Fairfax Drive, Room 840 Arlington, VA 22203	703-358-2398	laura_henze@fws.gov
Kate Hutson	DUSDIE - Booz Allen Hamilton	1550 Crystal Drive Suite 1100 Arlington, VA 22202	703-412-7532	hutson_kate@bah.com
John P. Kelly	Camp Edwards	Bldg 2808 Camp Edwards, MA 02542	508-968-5848	john.kelly19@us.army.mil

## North East SWAP/INRMP Workshop - Boston, Massachusetts

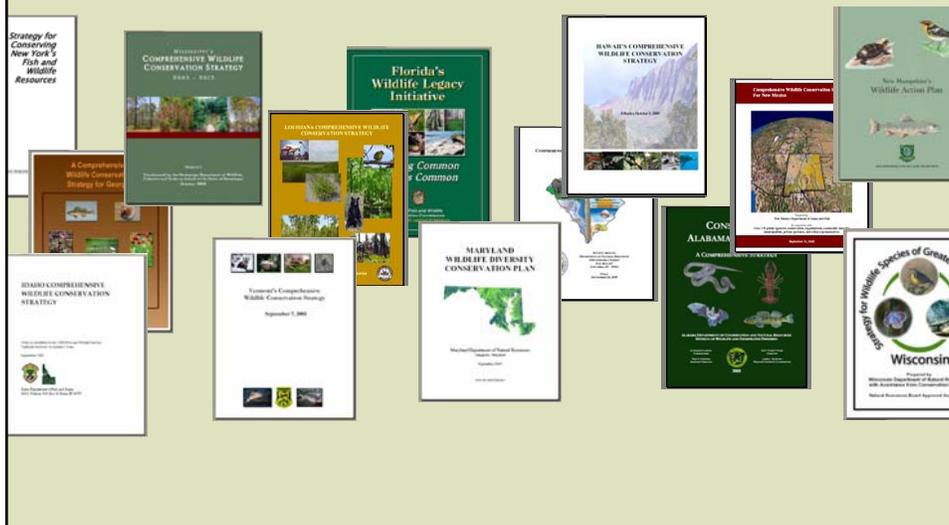
Name	Organization	Address	Phone	Email
Catherine Liller	USFWS - Washington Office	4401 North Fairfax Drive Ste 840 Arlington, VA 22203	703-358-2191	catherine_liller@fws.gov
Wayne MacCallum	MA Division of Fisheries & Wildlife	One Rabbit Hill Rd. Westborough, MA 01518	508-389-6340	wayne.maccallum@state.ma.us
Patty McKenna	DUSDIE - Booz Allen Hamilton	1550 Crystal Drive Suite 1100 Arlington, VA 22202	703-412-7482	mckenna_patricia@bah.com
Andrew Milroy	Westover Air Reserve Base	439 MSG/CEV 250 Patriot Ave, Box 35 Westover AFB, MA 01022	413-557-3760	andrew.milroy@westover.af.mil
Kevin Moody	Federal Highway Administration	61 Forsyth St., S.W. Suite 17T26 Atlanta, GA 30303	404-562-3618	kevin.moody@fhwa.dot.gov
Steve Najjar	New Boston Air Force Station	317 Chestnut Hill Road New Boston AFS, NH 03070	603-471- 2426	stephen.najjar@newboston.af.mil
Thomas Poole	Devens Air Force Base	30 Quebec Street, Box #10 FT Devens, MA 01434-4479	978-796-2747	thomas.poole1@us.army.mil
Raymond Rainbolt	Fort Drum	85 First St. W. IMNE-DRM-PWE Fort Drum, NY 13602	315-772-9636	raymond.e.rainbolt@us.army.mil
Tim Roettiger	USFWS - NH	151 Broad Street Nashua, NH 03063	603-595-3505	tim_roettiger@fws.gov
Agelena Ross	NY State Department of Environmental Conservation	317 Washington St. Watertown, NY 13601	315-785-2261	amross@gw.dec.state.ny.us

# **Appendix B: Tom French's Presentation**

# State Wildlife Action Plans: *Working Together to Prevent Wildlife From Becoming Endangered*



## Wildlife Action Plans for Every State







## State Wildlife Action Plans

*The Nation's Core Program for  
Preventing Wildlife from Becoming  
Endangered in Every State.*

# State Wildlife Grants

## How It Works:

- Allocated by formula to every state  
→ Population + Area
- Non-federal match  
25% for planning  
50% for implementation
- Annual appropriations



## Eight Required Elements

1. **Wildlife** distribution and abundance, focused on species of greatest need
2. **Habitat** extent and condition
3. **Problems** and research needs
4. **Conservation Actions** and priorities



## Eight Required Elements

5. Monitoring and Evaluation
6. Plans to **Review and Revise**
7. **Coordination** with other agencies, planning efforts
8. Broad **public participation**



## State Wildlife Action Plans

Structured For The Needs Of Each State



# State Wildlife Action Plans

Table 10. Prioritization of Bird Species

Species	Priority	Conservation Strategy	State	Federal	State	Local	Other	Notes
American Osprey	1	Conservation	CC, CO	SC	SC	SC	SC	MA, VT, NH, CT
Black Tern	1	Conservation	MA, NH	SC	SC	SC	SC	MA, NH, CT
Blue-winged Teal	1	Conservation	VT	SC	SC	SC	SC	MA, NH, CT
Least Tern	1	Conservation	CC, CO, NH	SC	SC	SC	SC	MA, NH, CT
Spotted Tattler	1	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
Wedge-tailed Shearwater	1	Conservation	CC, CO	SC	SC	SC	SC	MA, NH, CT
Red-tailed Tropicbird	1	Conservation	VT	SC	SC	SC	SC	MA, NH, CT
White-rumped Sandpiper	1	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
Sharp-shinned Owl	1	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
White-throated Sparrow	1	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
American Goldeneye	2	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
American Black Duck	2	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
American Woodcock	2	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
American Pipit	2	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
Blue Jay	2	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
Red-shouldered Hawk	2	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
Common Nighthawk	2	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
Common Raven	2	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
Common Grackle	2	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
Common Crow	2	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
Common Raven	2	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
Common Grackle	2	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
Common Crow	2	Conservation	MA	SC	SC	SC	SC	MA, NH, CT

Figure 11. Map of Southern Maine Ecoregion (South Coastal, Southwestern, and Southern Interior). (Source: Maine Office of GIS)

Table 10. Goals, Objectives, Threats, and Strategies for Priority Birds by Habitat. (Birds) Early Successional (incl. Regener. Forests) (ES)

**Associated Species:**

Species	Priority	Conservation Strategy	State	Federal	State	Local	Other	Notes
American Osprey	1	Conservation	CC, CO	SC	SC	SC	SC	MA, VT, NH, CT
Black Tern	1	Conservation	MA, NH	SC	SC	SC	SC	MA, NH, CT
Blue-winged Teal	1	Conservation	VT	SC	SC	SC	SC	MA, NH, CT
Least Tern	1	Conservation	CC, CO, NH	SC	SC	SC	SC	MA, NH, CT
Spotted Tattler	1	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
Wedge-tailed Shearwater	1	Conservation	CC, CO	SC	SC	SC	SC	MA, NH, CT
Red-tailed Tropicbird	1	Conservation	VT	SC	SC	SC	SC	MA, NH, CT
White-rumped Sandpiper	1	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
Sharp-shinned Owl	1	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
White-throated Sparrow	1	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
American Goldeneye	2	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
American Black Duck	2	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
American Woodcock	2	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
American Pipit	2	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
Blue Jay	2	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
Red-shouldered Hawk	2	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
Common Nighthawk	2	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
Common Raven	2	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
Common Grackle	2	Conservation	MA	SC	SC	SC	SC	MA, NH, CT
Common Crow	2	Conservation	MA	SC	SC	SC	SC	MA, NH, CT

**Threats:**

- Urban/suburban development
- Habitat fragmentation
- Lack of adequate disturbance events in remaining forested areas to keep in early successional condition
- Habitat loss or degradation and nearby grounds

**Goal:** Conserve, restore and enhance populations of focal species in shrub/early successional habitats to ensure the overall conservation of all native species within this habitat.

**General Objectives:**

1. Protect and maintain high priority habitats. (Refer to RFP Physiographic Area 3 plan for a comprehensive discussion on management and restoration strategies.)

**Strategy:**

Strategy	Task
Identify and protect high priority habitat.	Research best method of protection—acquire, fee or easements from willing sellers; identify areas to identify suitable areas/landmarks; identify and enhance suitable areas or high quality habitat to protect and restore population densities of associated species in Maine (RFP, Dispersed Property Management System); conduct habitat through acquisition and management of areas that already are subjected to logging.

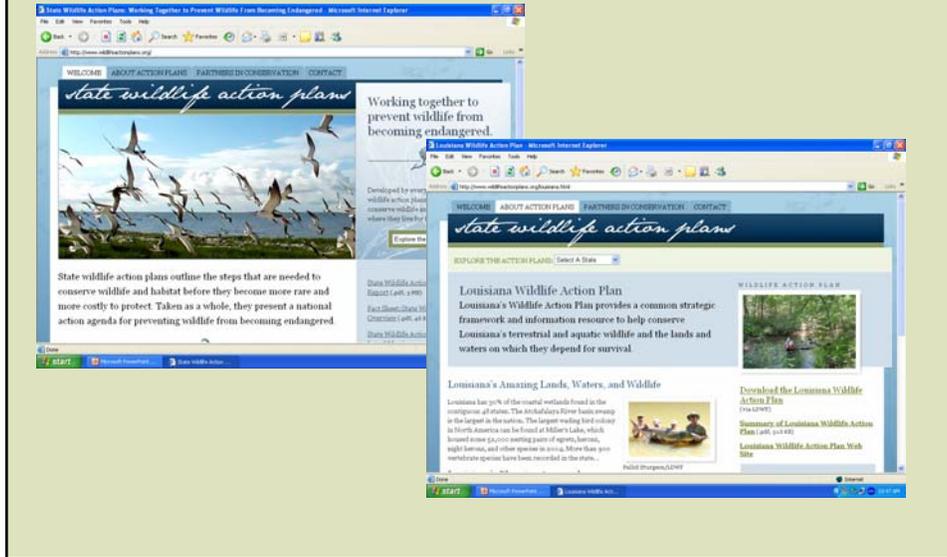
Chapter 1—Programs, Priority Research, and Survey Efforts  
Page 10

## What Now?

- Need secure funding
- Integration
- Partnerships



# Find Out More



[www.fishwildlife.org](http://www.fishwildlife.org)

[www.teaming.com](http://www.teaming.com)

[www.wildlifeactionplans.org](http://www.wildlifeactionplans.org)





## The Massachusetts Comprehensive Wildlife Conservation Strategy

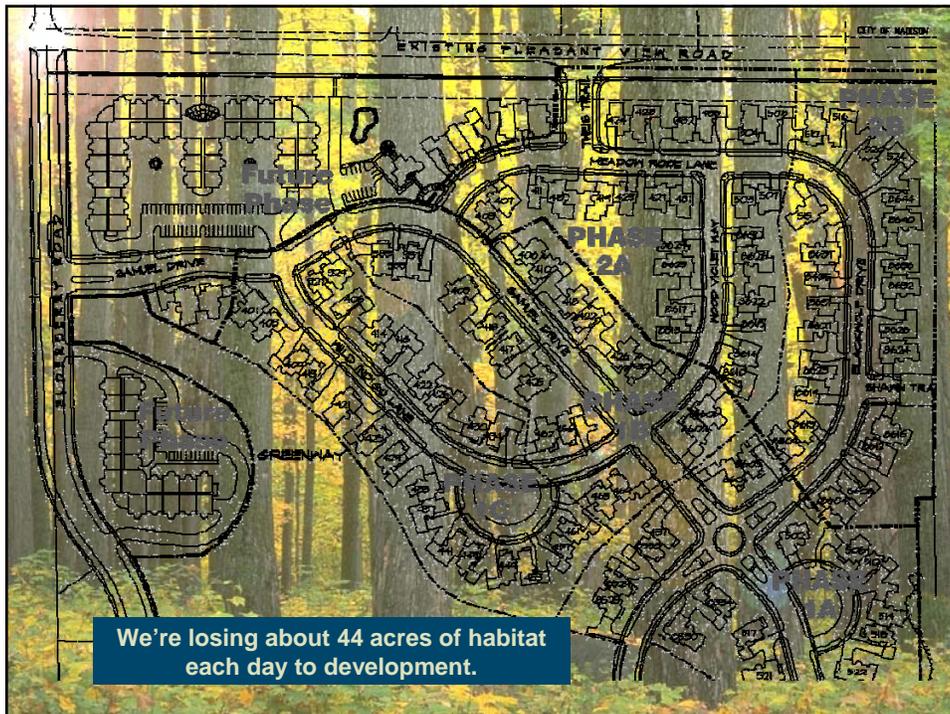
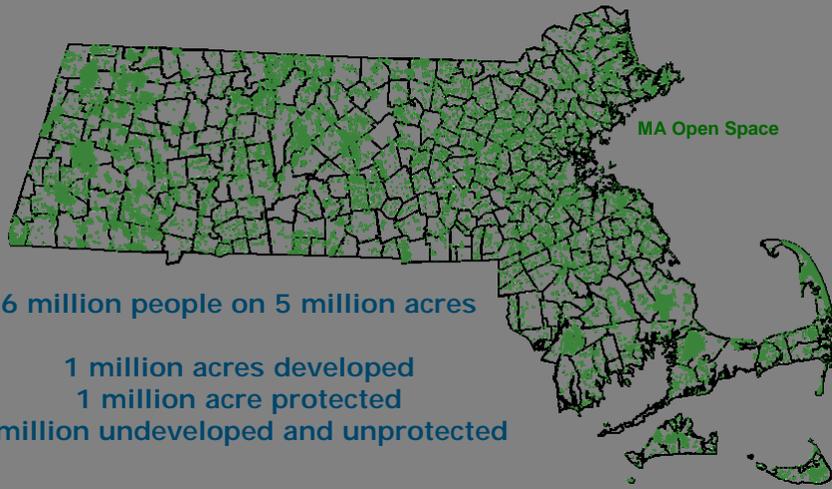


### Habitat-Based Management



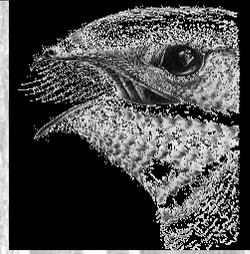
The CWCS is a *habitat-centered* set of strategies designed to protect the wildlife diversity of the Commonwealth.

# The Massachusetts Landscape



## Habitat Summaries

- 22 types of Habitat (scaled by size)
- Species in Greatest Need of Conservation (257)
  - state-listed wildlife species
  - species of regional concern
  - species of MA concern



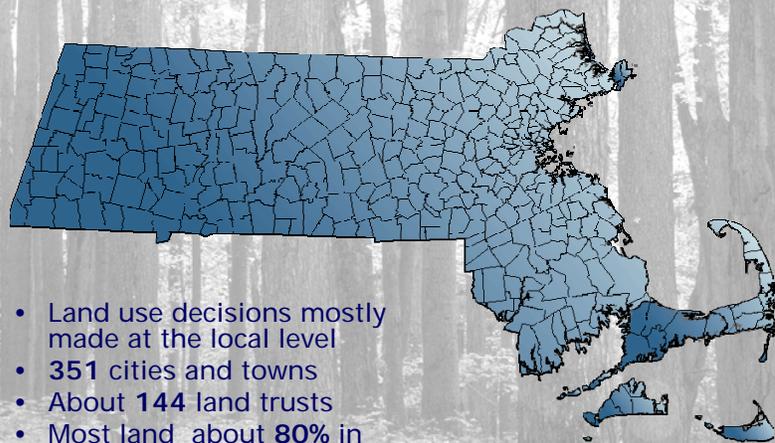
## Most Frequently Identified Threats

- Loss of Habitat due to Development
- Degradation of Habitat due to Poor Water Quality
- Degradation of Habitat due to Changes in Water level
- Loss of Habitat due to Fragmentation
- Loss of Habitat due to Invasives

# Conservation Strategies

- **Habitat Protection: (Acquisition in Fee, Easement, with Partners, by others)**
- **Biological Information: Surveys, Monitoring**
- **Conservation Planning for CWCS Habitats and Species**
- **Environmental Regulation**
- **Habitat Restoration and Management**
- **Coordination and Partnerships**
- **Education**

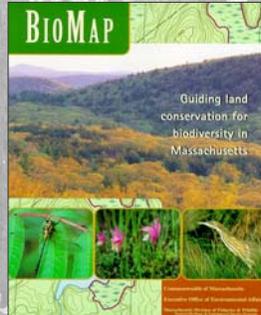
# The Massachusetts Landscape



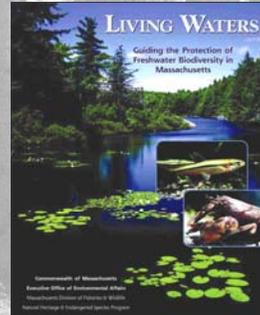
- Land use decisions mostly made at the local level
- **351** cities and towns
- About **144** land trusts
- Most land about **80%** in private ownership

# BioMap and Living Waters Projects

- Comprehensive review of Natural Heritage data
- Two complementary statewide conservation plans

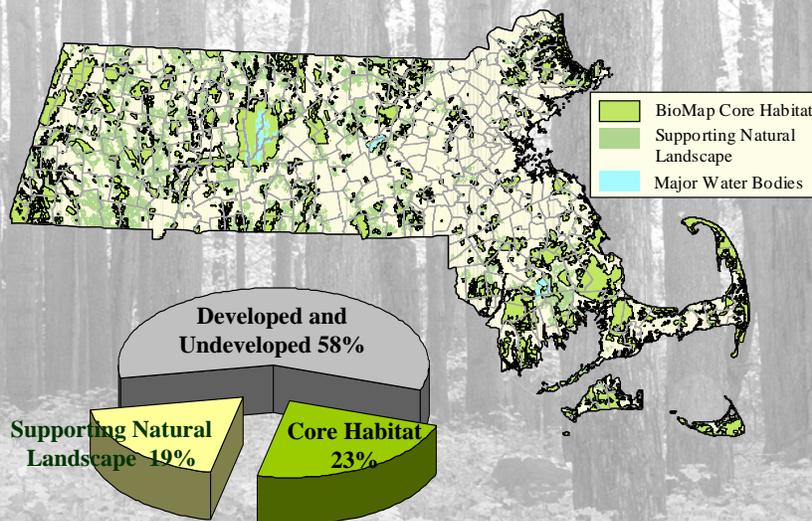


2001

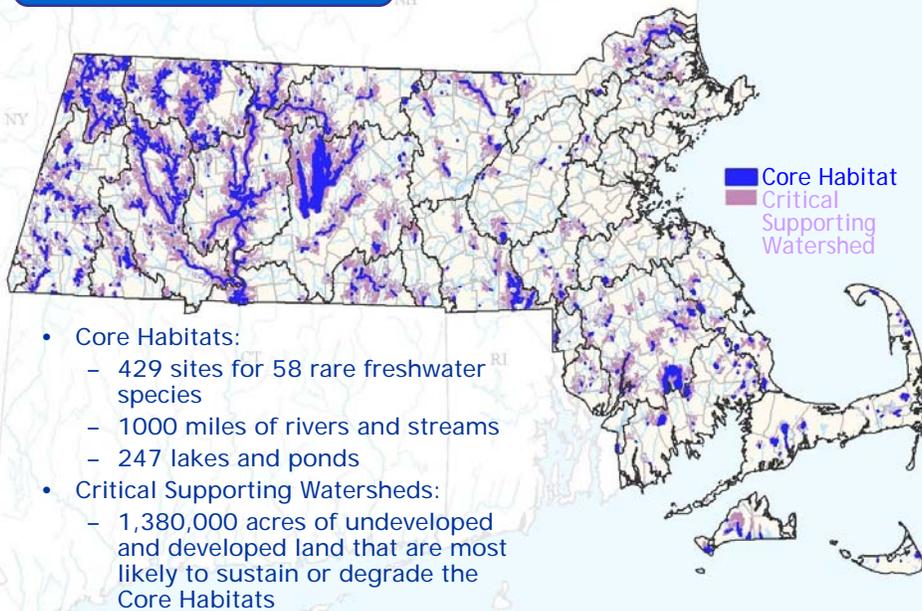


2003

## BioMap Core Habitat and Supporting Natural Landscape



## Living Waters

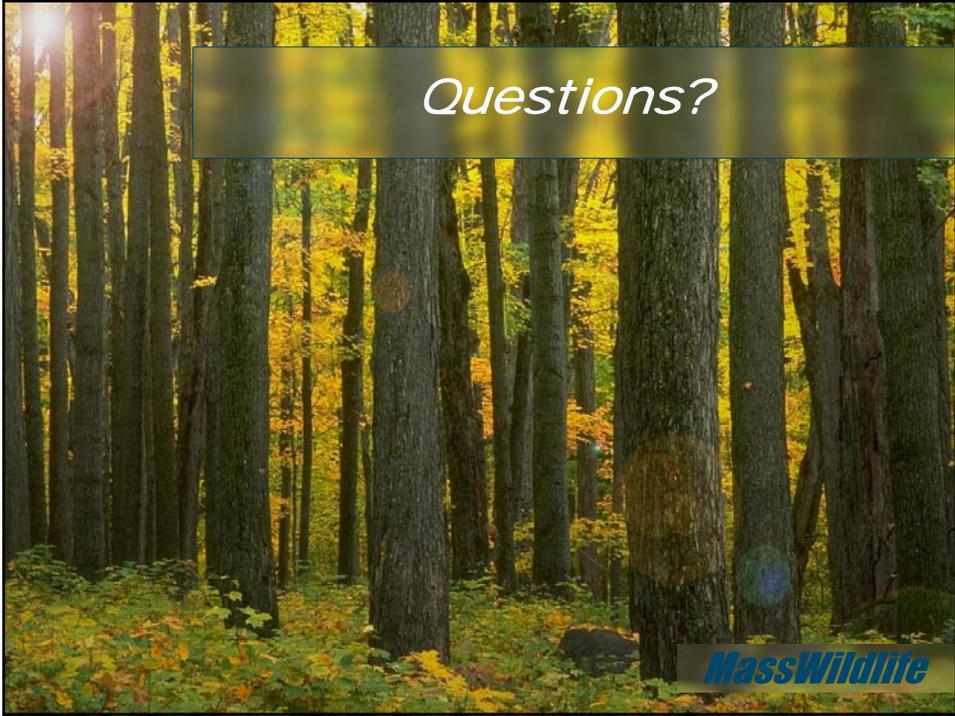


- Core Habitats:
  - 429 sites for 58 rare freshwater species
  - 1000 miles of rivers and streams
  - 247 lakes and ponds
- Critical Supporting Watersheds:
  - 1,380,000 acres of undeveloped and developed land that are most likely to sustain or degrade the Core Habitats

## Efforts aimed at protecting the Biodiversity

- **Massachusetts Land Acquisition Program**
- **Wildlands Stamp**
- **Openspace Bond Bill**
- **Massachusetts Endangered Species Act.**
  - Protects species and their habitats
  - Enacted in 1990 updated in 2005.
- **Natural Heritage and Endangered Species Program**
  - Part of the MDFW
  - Database is key
- **Upland Program**
  - Focused on, but not restricted to MDFW lands
- **Ecological Restoration**
  - Understanding the role fire plays in maintaining balanced ecosystems
- **Sustainable Forestry**
  - On all state owned forestlands
- **Landowner Incentive Program**
  - Private lands across the state targeting species-at-risk
- **Target Fish Community**
  - Setting Goals for
- **A**  
**P**





# **Appendix C: Peter Boice's Presentation**

# Integrated Natural Resource Management Plans (INRMPs) and the Sikes Act

L. Peter Boice  
DoD Conservation Team Leader

## History of the Sikes Act

- **Sikes Bill of 1949**
  - Limited to Eglin Field Reservation, Florida
  - Authorized issuing of hunting & fishing permits
    - May retain fees may for restocking
  - Directed management of fish & game in cooperation with USFWS
  - Required state hunting & fishing licenses

## History of the Sikes Act

- **Engle Act of 1958**
  - Required hunting and fishing on military installations to comply with state laws
  - Required that appropriate state licenses be obtained
  - Ensured access to installations by state fish and game officials

## History of the Sikes Act

- **Sikes Act of 1960**
  - Extended provisions of Sikes Bill to all military installations
  - Implemented Engle Act
  - Authorized tripartite cooperative plans
    - Voluntary, but mutually agreed upon
    - Focus on fish & game propagation
    - Funded through user fees, not appropriations

## History of the Sikes Act

- **Amendments to Sikes Act: 1968 – 1986**
- 1968:
  - Appropriations authorized for first time
  - Habitat enhancement and public outdoor recreation programs added
- 1974:
  - By 1974, DoD had 237 cooperative plans in effect
  - Habitat management, range rehabilitation, ORV control made mandatory
- 1982:
  - Scope expanded to include all T&E species
  - Congress expressed continued frustration over DoD's failure to request funds
- 1986:
  - Multiple-use natural resources management
  - Employ professionally trained natural resources management specialists
  - Regularly review fish and wildlife plans

## Sikes Act Improvement Act of 1997

- Enacted November 18, 1997
- **Authorizes** DoD to carry out a program for the conservation and rehabilitation of natural resources on military installations

## Key Elements of SAIA

- Military Departments required to prepare **and implement** INRMPs for relevant installation...unless an installation does not have **significant natural resources**
- Scope of plans enlarged
  - Previous program discretionary, self-imposed, and dictated by internal policy
  - Previous program focused on fish and game conservation
- Plans made mandatory
  - “Must fund” requirements

## Key Elements of SAIA

- Retained requirements for
  - Cooperative preparation with FWS and States
  - Mutual agreement on conservation measures
- Program and plans must
  - Be consistent with the use of installation natural resources to ensure military preparedness
  - Ensure no net loss in capability of installations to support the military mission



## Our Mutual Obligation

- Establish goals for INRMP development and implementation that:
  - Effectively contribute to conservation
  - In ways compatible with the mission
  - Ensure sustainable use of the installation
  - Maintain natural biodiversity
- All three Parties are expected to deconflict and balance two national imperatives
- Requires cooperative development, implementation and monitoring

## Cooperative Development: Partnering with USFWS and States

- Involvement and review includes:
  - Evaluating impacts on fish and wildlife
  - Ensuring consideration of fish and wildlife resources in installation planning activities
  - Identifying opportunities to enhance fish and wildlife while accomplishing other mission objectives
  - Providing technical assistance to ensure proper consideration of fish and wildlife



## Procedural Requirements

- Provide opportunity for public comment on INRMP
- Cooperative development
- 5-year reviews for operation and effect
- Annual performance reviews strongly recommended
- SECDEF annual Report to Congress

## Bottom Line

- **Congress** expects that:
  - Plans will be developed cooperatively;
  - Plans will be implemented; and
  - Public will have access to installations to enjoy natural resources...
  - But military preparedness **CANNOT** be compromised

## Other SAIA Features

- Ensures sufficient numbers of professionally trained natural resource managers
- Authorizes fee collection for hunting and fishing permits
- Authorizes cooperative agreements
- Authorizes conservation law enforcement
- 1998 amendment: Disabled Sportsmen's Access

## Required INRMP Elements

- Natural resources management
- Sustained **multi-purpose** use
- Habitat enhancement
- Integration of activities
- Public access and sustainable public use
- Specific goals and objectives
- Plus requirements from DoDI
  - Embrace principles of ecosystem mgmt

# INRMP Template

## Main Sections

1. Overview
  - Purpose, Scope, Responsibilities, Goal, Objectives
2. Installation Information
3. Natural Resources Management and Mission Sustainability
  - Program Integration, Encroachment, NEPA, Consultation, SWAPs
4. Management Actions
  - Forestry, Vegetation, T&E, Wetlands, Invasives, BASH.....
5. Implementation
  - Funding, Staffing, Cooperative Agreements/Partnerships, Metrics

## Appendices

# Related INRMP Tools

- DoD Implementing Guidance
- Sikes Act Tripartite MOU
- Handbook: DoD Resources for INRMP Implementation
- Report: Best Practices for INRMP Implementation
- Course: Developing and Maintaining Sustainable INRMPs
- Conservation Metrics
- Handbook: Conserving Biodiversity on Military Lands

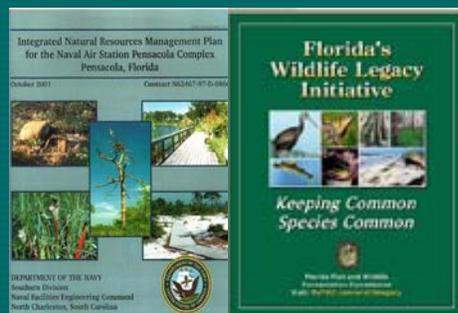


## Some DoD Priorities

- Emphasize regional or ecosystem-based projects
- Avoid future species listings
- Identify priority conservation areas
- Establish conservation easements
- Manage invasive species
- **In support of military readiness**

## INRMP-SWAP Integration

- Southeast
  - Atlanta (May 2006)
- Southwest
  - Phoenix (December 2006)
- Southern Plains
  - Albuquerque (May 2007)
- Mid-Atlantic Watershed
  - Arlington (November 2007)
- Northeast
  - Boston (June 2008)



## Projects from INRMP-SWAP Southeast Workshop

- Georgia Conservation Forum Project:  
Gopher Tortoise Support {05-78}
- A Web-based Tool Facilitating Interagency Plan  
Integration [Florida SWAP-INRMP Regional  
Coordination] {07-372}
- Carolina Species At Risk Project {07-348}
- Clear Zone Habitat Conservation on a South  
Carolina Airstrip (Invasives Control) {07-367}



## Potential Projects from INRMP-SWAP Southwest Workshop

- Partnering Workshop for Integrating SWAPs  
and INRMPs [Carlsbad Office] {07-378}
- Bonneville Basin Integration: A Regional  
INRMP {proposed}
- Assessment and Prioritized Restoration of  
Seeps, Springs and Riparian Systems
- SW Burrowing Owl Symposium



## Potential Projects from INRMP-SWAP Southern Plains Workshop

- Gray Vireo Coordination
- Current Bat Initiatives Coordination
- Wildlife Diversity Coordination
- Southern New Mexico Coordination
- Colorado Cooperative Conservation



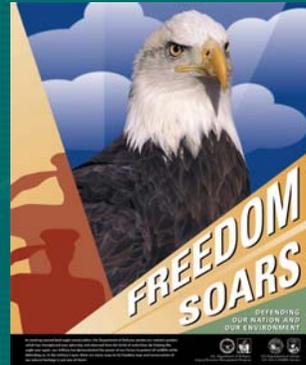
## Potential Projects from INRMP-SWAP Mid-Atlantic Workshop

- Aquatic Invertebrate Surveys
- Database Coordination and Development
- New Jersey Species at Risk
- New Jersey Pinelands Ecosystem Management for Fire Control
- Regional BASH Toolkit/SWAP Integration
- Significance of Fire-maintained Communities
- Species at Risk Assessment for the Chesapeake Bay Region



## TER-S Regional Workshops

- Pacific Islands
  - Honolulu: June 2006
- Southeast
  - Cocoa Beach: February 2007
- Southwest
  - Tucson: October 2007



## Projects from Pacific Islands TER-S Workshop



- Removal of Invasive Fire-prone Grass to Increase Training Lands in the Pacific {07-362}
- Hawaii Cooperative Conservation Project {07-383}
- Predator-proof Fencing for Invasive Species Control in Hawaii {07-339}
- Ten-Year Resurvey of Biodiversity of Marine Communities and Introduced Species in Oahu {07-343}
- Intensive Plant Conservation Training {07-364}

## Potential Projects from Southeast TER-S Workshop

- Conservation Targets, Wildlife Corridors and Military Base Buffers across GCPEP
- A Regional Planning Performance Assessment Model for a Sustainable Future in the Southeast
- Establishing Habitat and Resource Baselines in NW Florida
- Longleaf Pine Ecosystem Carbon Sequestration
- Effects of Debris on Nesting Sea Turtles
- Feral Hog Ecology
- Population Structure of Eastern Pine Snake



## Southwest TER-S Workshop Scientific White Papers

- Long-term precipitation variability
- Altered fire regimes
- Hydrology and ecology of intermittent stream and dry wash ecosystems
- Issues of spatial scale
- Matrix communities of SW deserts
- Emerging partnerships
- Military use of land

## Questions?



[Peter.Boice@osd.mil](mailto:Peter.Boice@osd.mil)

<http://www.osd.denix.mil> ⇨ DoD Conservation  
Program

<http://www.dodlegacy.org>

# **Appendix D: Ray Rainbolt's Presentation**

# FORT DRUM INRMP & NEW YORK STATE WILDLIFE ACTION PLAN

Raymond E. Rainbolt  
Fish & Wildlife Program Manager

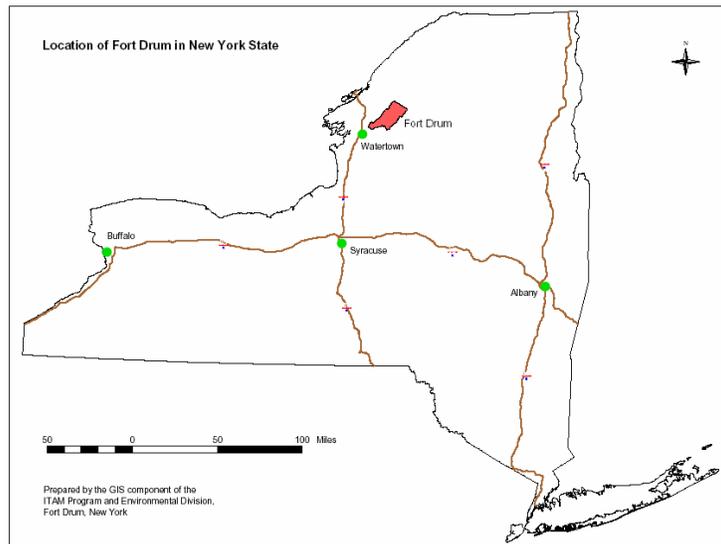


## FORT DRUM, NEW YORK



# FORT DRUM, NEW YORK

*Fort Drum is 107,000+ acres.*



## **BACKGROUND**

<b>Sikes Act Improvement Act</b>	<b>Nov 1997</b>
<b>Fort Drum INRMP 2001-2005</b>	<b>Nov 2001</b>
<b>New York State Wildlife Action Plan</b>	<b>May 2006</b>
<b>DoD INRMP Template Memo</b>	<b>Aug 2006</b>
<b>Fort Drum INRMP Revision begins</b>	<b>Jan 2007</b>
<b>Legacy Project for DoD Template</b>	<b>Apr 2007</b>

## **BACKGROUND**

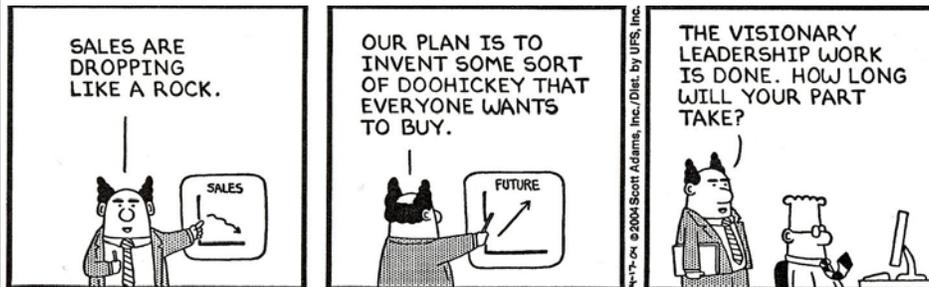
- **Installation Wildland Fire Management Plan**
- **NYSDEC SWAP**
- **Bird-Aircraft Strike Hazard (BASH) Standard Operating Procedures**
- **Installation Pest Management Plan**
- **Biological Assessment/Opinion re: Indiana Bat**
- **Fort Drum Revised INRMP**

# DoD INRMP TEMPLATE

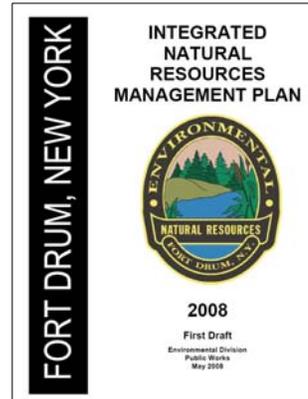
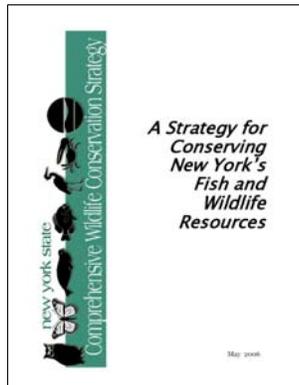
## 3. Environmental Management Strategy and Mission Sustainability

g. State Comprehensive Wildlife Plans (SCWP) – Discuss how components of the SCWP have been incorporated into the INRMP and how components of the INRMP have been incorporated into the SWCP

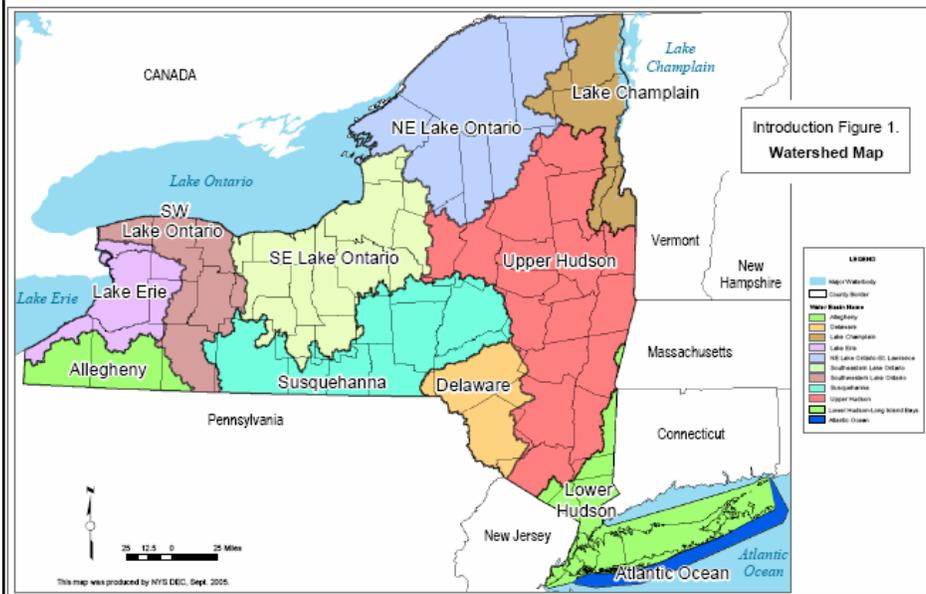
# DoD INRMP TEMPLATE



# DoD INRMP TEMPLATE

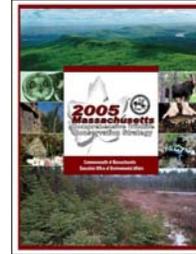


# New York State Wildlife Action Plan



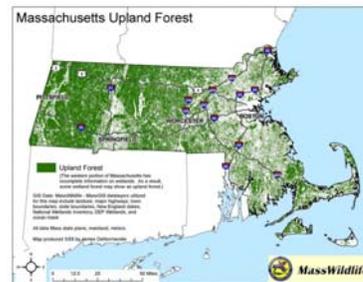
# Massachusetts State Wildlife Action Plan

## Habitat Types for the Species in Greatest Need of Conservation



### A. Large-scale Habitats

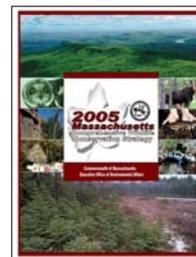
1. Connecticut River and Merrimack River Mainstems
2. Large and Mid-sized Rivers
3. Marine and Estuarine Habitats
4. Upland Forest
5. Large Unfragmented Landscape Mosaics
6. Pitch Pine/Scrub Oak



# Massachusetts State Wildlife Action Plan

### B. Medium-scale Habitats

1. Small Streams
2. Shrub Swamps
3. Forested Swamps
4. Lakes and Ponds
5. Salt Marsh
6. Coastal Dunes, Beaches and Small Islands
7. Grasslands
8. Young Forests and Shrublands
9. Riparian Forest



### C. Small-scale Habitats

1. Vernal Pools
2. Coastal Plain Ponds
3. Springs, Caves and Mines
4. Peatlands and Associated Habitats
5. Marshes and Wet Meadows
6. Rocky Coastlines
7. Rock Cliffs, Ridgetops, Talus Slopes and Similar Habitats

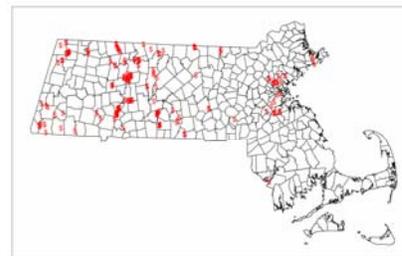
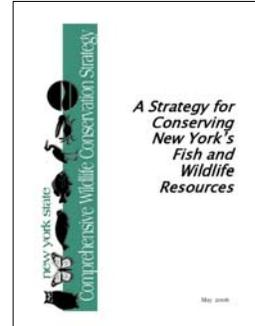


Figure 20. Locations of Some Rocky Cliffs, Ridgetops, Talus Slopes, and Similar Habitats in Massachusetts.

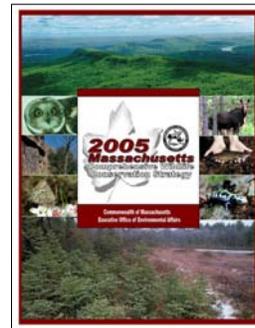
## New York State Wildlife Action Plan

- Description of the Basin
- Critical Habitats of the Basin and the Species That Use Them
- Overall Trends in the Basin
- Threats
- Priority Issues in the Basin
- Vision, Goals and Objectives for the Basin
- Priority Strategies and Actions for Basin-wide Implementation



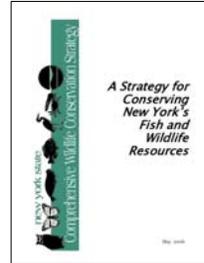
## Massachusetts State Wildlife Action Plan

- Habitat Description
- Species of Greatest Conservation Need in Habitat
- Threats to Habitat
- Proposed Conservation Actions
- Monitoring Conservation Action Effectiveness

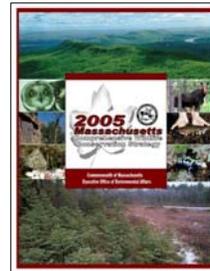


## State Wildlife Action Plans

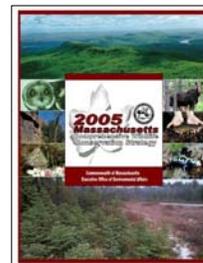
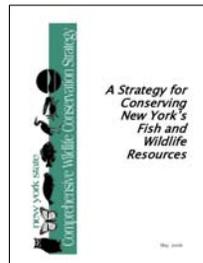
- Description of the Basin
- Priority Strategies and Actions for Basin-wide Implementation



- Habitat Description
- Proposed Conservation Actions



## Introduction – What is a State Comprehensive Wildlife Plan?



### 3.5 STATE COMPREHENSIVE WILDLIFE PLAN

In 2001, federal legislation established new funding for wildlife conservation through the State Wildlife Grants (SWG) program. These funds were to be used to address "species of greatest conservation need" (SGCN) in each state with the intent to maintain the biodiversity of wildlife in this country and prevent new listings of endangered species.

To be eligible to receive SWG funding, each state was required to prepare a Comprehensive Wildlife Conservation Strategy (CWCS) for the management of SGCN and associated habitats. Among the various elements of the CWCS, all States were required to include information on the distribution and abundance of wildlife species identified to be indicative of the diversity and health of the State's wildlife including priority surveys and monitoring, research projects and conservation actions for these species and their habitats. The CWCS is required to be reviewed in intervals not to exceed 10 years.

In New York, the New York State Department of Environmental Conservation (NYSDEC) is the sole agency eligible to receive SWG funds which are distributed through the U.S. Fish and Wildlife Service. NYSDEC completed the *New York State Comprehensive Wildlife Conservation Strategy* (NYS CWCS) in 2006.

## Where does the installation fit geographically into the Plan?

### 3.5.1 Northeast Lake Ontario-St. Lawrence River Basin

The New York State CWCS is organized by 11 basins throughout the state. Fort Drum is located in the Northeast Lake Ontario-St. Lawrence River (NELO-SLR) Basin. This is the second largest basin in New York State in terms of land area, covering about 4.9 million acres (7,600 square miles). Fort Drum makes up approximately 2% of the total area of the Basin.

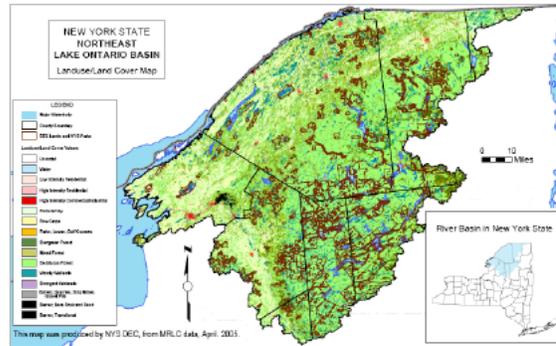


Figure 3.\_ The Northeast Lake Ontario Basin which includes Fort Drum in the New York State Comprehensive Wildlife Conservation Strategy.

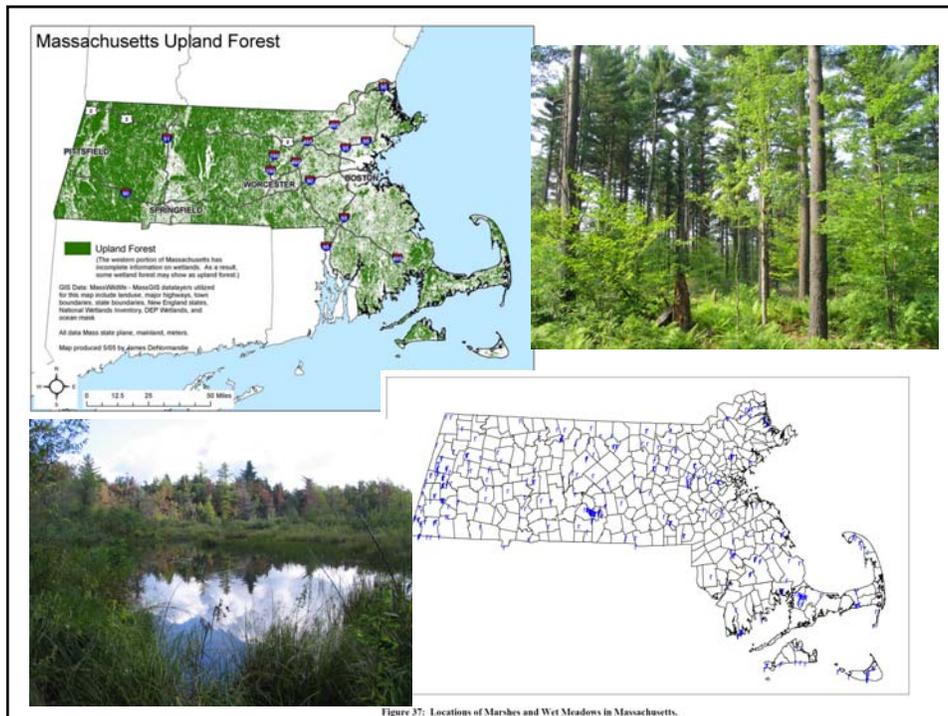
## Where does the installation fit ecologically into the Plan?

Based on general landcover classifications, Fort Drum is characteristic of the entire NELO-SLR Basin (see Table 3.2).

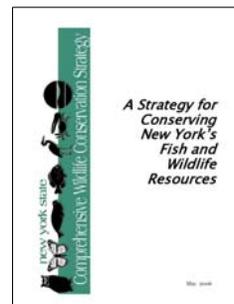
Table 3.2 Comparing percentages of general landcover types between Fort Drum and the entire Northeast Lake Ontario-St. Lawrence River Basin. NELO-SLR information taken from Northeast Lake Ontario-St. Lawrence Table 1 (page 395 of the NYSCWCS).

LANDCOVER CLASSIFICATION	% COVER IN BASIN	% COVER ON FORT DRUM
Deciduous Forest	52.0	38.8
Coniferous Forest	5.7	8.2
Mixed Forest	12.8	21.3
TOTAL Forest	70.5	68.3*
Shrubland/Grassland	0	13.0
Pasture/Hay	6.4	0
Row Crops	10.4	0
TOTAL "Shrub-Grassland-Agriculture"	16.8	13.0
Woody or Emergent Wetlands	8.0	8.2*
Water	3.5	4.3
Barren, Quarries, Strip Mines, & Gravel Pits	0.5	0.5
Commercial, Industrial & Residential Development	0.7	4.8
Parks, Lawns, & Golf Courses	0.1	2.4
	100.1	100.0

\* On Fort Drum, forested wetlands are included as "forests" and not "woody wetlands"



## Where does the installation fit physically into the Plan?

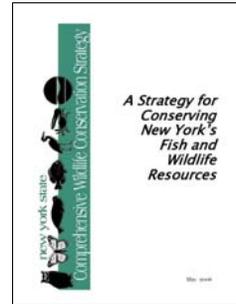


Description of the Basin Pg. 325: **Fort Drum**, a 107,000-acre (168 sq. mi.) military reservation, lies just outside the city [of Watertown].

Overall Trends in the Basin Pg. 336: **Growth in Fort Drum and the supporting area is going to be substantial. Current plans already call for a disruption of 120 acres of Fort Drum property. Fort Drum contains many unique habitats with significant bird diversity which may be affected by this base operation.**

Priority Strategies & Actions Pg. 351: **Common Nighthawk. Develop methodology to determine population trends...this species was observed in several blocks throughout the basin with a concentration of confirmed breeding observations in eastern Jefferson County (**Fort Drum**) and St. Lawrence County.**

## Where does the installation fit physically into the Plan?



Fort Drum is mentioned only sparingly in the NYS CWCS. Fort Drum is acknowledged to contain many unique habitats with significant bird diversity, but it is further stated that these resources may be affected by future actions affecting 120 acres of Fort Drum. In reality, Fort Drum is the largest federal land holding in the basin with over 107,000 contiguous acres. Fort Drum is in a transition zone between multiple ecoregions (see *Section 2.6.2 Ecoregions*), and the diversity of relatively undisturbed habitats makes Fort Drum a refugium for many species, particularly those dependent on grassland and shrubland/early successional forest habitats, many of which are listed as SGCNs.

## Where does the installation fit functionally (a.k.a. strategically) into the Plan?

### Priority Strategies and Actions for Basin-wide/Habitat-wide Implementation

**Beach & Island Ground-nesting Birds**  
**Boreal Forest Birds**  
**Breeding Waterfowl**  
**Deciduous/Mixed Forest Breeding Birds**  
**Early Successional Forest/Shrubland Birds**  
**Forest Breeding Birds**  
**Freshwater Marsh Nesting Birds**  
**High Altitude Conifer Forest Birds**  
**Pugnose Shiner**  
**Heritage-Strain Brook Trout**  
**Freshwater Bivalves**  
 .....

**Grassland Birds**  
**Common Loon**  
**Common Nighthawk**  
**Osprey**  
**Lake Sturgeon**  
**Herpetofauna**  
**Other Butterflies**  
**Odonates**  
**Furbearers**  
**Indiana Bat**  
**Tree Bats**  
 .....

**Where does the installation fit functionally (a.k.a. strategically) into the Plan?**

- **Recommendations Currently Implemented on Fort Drum**
- **Recommendations Partially Implemented or Planned on Fort Drum**
- **Recommendations That Could Be Implemented on Fort Drum**

**Recommendations Currently Implemented on Fort Drum**

---

1. **Indiana Bat**
2. **Other Bats**
3. **Grassland Birds**
4. **Common Loon**
5. **Common Nighthawk**
6. **Early Successional Forest/Shrubland Birds**
7. **Early Successional Forest/Shrubland Habitat**
8. **Outreach – Wildlife**
9. **Outreach – Habitat**

## **Recommendations Partially Implemented or Planned on Fort Drum**

---

- 10. Freshwater Marsh Nesting Birds**
- 11. Osprey**
- 12. Cerulean Warbler (Deciduous/Mixed Forest  
Breeding Birds)**
- 13. Dragonflies & Damselflies**
- 14. Freshwater Bivalves**
- 15. Invasive Species**

## **Recommendations That Could Be Implemented on Fort Drum**

---

- 16. River Otter**
- 17. Pond Turtles**
- 18. Wood Turtle**
- 19. Eastern Ribbonsnake**
- 20. Blue-spotted/Jefferson Salamanders**
- 21. Western Chorus Frog**
- 22. Butterflies**

## Where does the installation fit functionally (a.k.a. strategically) into the Plan?

### 3.5.2 Species of Greatest Conservation Need & Priority Actions

NYSDEC has identified 110 Species of Greatest Conservation Need (SGCN) in the NELO-SLR. This is approximately 21% of the 537 species designated as SGCN in New York State. The 110 species includes 5 mammals, 61 birds, 15 amphibians and reptiles, 9 freshwater fish, 1 marine fish, 15 insects, and 4 mollusks. On Fort Drum, 65 of these species have been recorded including 4 mammals, 51 birds, 4 amphibians, 4 reptiles, 1 freshwater fish, and 1 marine fish. See Appendix 9 for a listing of all SGCN in the basin and their status in New York State and Fort Drum.

Approximately 45% of the SGCNs are of "unknown" status. Likewise, there are many species on Fort Drum whose status is unknown. As such, surveys should be a priority throughout the NELO-SLR including Fort Drum. Of the 110 SGCNs in the NELO-SLR, 35% are declining. The majority (80%) of these are birds, with early successional forest/shrubland birds (29%) and grassland birds (23%) making up the largest shares of declining avifauna. In general, species on Fort Drum are doing better than within the region as a whole according to the NYSDEC assessment in the plan compared to an evaluation by Fort Drum natural resources professionals.

The NYS CWCS has a number of recommendations that are intended to be of high priority to implement in the NELO-SLR in the next 5-10 years for the benefit of the most critical SGCN. The NYS CWCS identifies data collection (research, surveys, and inventories) as a crucial first step for the majority of SGCN in the NELO-SLR Basin. While a number of priority actions are identified for the basin, Fort Drum has a role to implement and/or contribute to at least 22 priority areas.

The 22 priority areas are divided into three groups: (1) areas that are currently being implemented on Fort Drum; (2) areas that have been partially implemented or planning is currently underway to carry out on Fort Drum; and (3) areas that have the potential to be carried out on Fort Drum by NYSDEC or other entities (e.g., Fort Drum could serve as a study area.)

## Appendix 9. – List of Species of Greatest Conservation Need

SPECIES/SPECIES GROUP	NEW YORK STATUS	FORT DRUM STATUS
41. Common Nighthawk	Decreasing	Breeding – uncommon to locally common breeder; uncommon spring migrant, uncommon to occasionally very common early fall migrant

## **Why is this important?**

- 1. Internal Assessment**
  - ✓ **How am I [the installation] doing?**
- 2. Justification**
  - ✓ **Provides a rationale for efforts/funding**
- 3. External Assessment to State**
  - ✓ **Shows the State that SGCNs matter**
  - ✓ **Provides a status check of SGCNs**
- 4. External Assessment to Public**
  - ✓ **Showcase of a DoD installation**

## **DoD INRMP TEMPLATE**

### **3. Environmental Management Strategy and Mission Sustainability**

**g. State Comprehensive Wildlife Plans (SCWP) – Discuss how components of the SCWP have been incorporated into the INRMP and how components of the INRMP have been incorporated into the SWCP**

# FORT DRUM INRMP

## 3. Natural Resources Management & Mission Sustainability

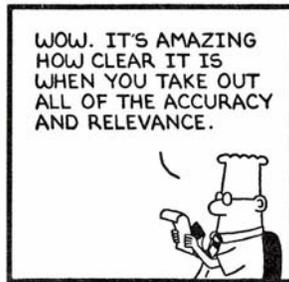
<b>3. Natural Resources Management &amp; Mission Sustainability</b>	<b>54</b>
3.1 Integrating Natural Resources Management & Military Mission .....	54
3.1.1 Operations Planning & Review .....	54
3.1.2 Natural Resources Management Actions .....	57
3.1.3 Environmental Awareness .....	60
3.1.4 Sustainability Challenges .....	61
3.2 Encroachment .....	67
3.2.1 Internal Encroachment .....	68
3.2.2 External Encroachment .....	71
3.2.3 Encroachment Management .....	72
3.3 National Environmental Policy Act .....	73
3.3.1 Levels of Documentation .....	74
3.3.2 Mitigation Measures .....	76
3.4 Consultation Requirements .....	76
3.5 State Comprehensive Wildlife Plans .....	77
3.5.1 Northeast Lake Ontario – St. Lawrence Basin .....	77
3.5.2 Species of Greatest Conservation Need & Priority Actions .....	77
3.6 Public Access & Outreach .....	82
3.6.1 Public Access & Outdoor Recreation .....	82
3.6.2 Public Outreach .....	83

## INRMP-SWAP INTEGRATION

- **Place the installation within the context of the state/region/basin**
  - Geographically
  - Ecologically
  - Physically
- **Place the installation within the function of the plan / provide for potential cooperation**
- **Evaluate the SGCN with species on installation**



# QUESTIONS?



11-28-03 © 2003 United Feature Syndicate, Inc.

# **Appendix E: Herb Bergquist's Presentation**

# Enhancing NWI Data for Wetland Function and Natural Habitat Integrity Assessments

Herb Bergquist  
U.S. Fish & Wildlife Service  
National Wetlands Inventory Program

## National Wetlands Inventory Program

- Created by USFWS in 1974
- Mapping Wetlands and Riparian Habitats
  - Wetland Trends
  - National, regional, and local reports



## Using Enhanced NWI For Watershed Management and Planning

- Increasing interest in watershed management
  - Water quality and aquatic biota
  - Disappearing wildlife habitat
  - Degraded fish and wildlife habitat
  - Opportunities to protect, enhance, and restore natural habitats

## Potential Uses of NWI Digital Data

- Predict wetland functions
  - Highlight wetlands of significance
- Monitor changes
  - Wetland trends
- Predict the effect of changes on wetland functions
  - Cumulative impact assessment
- Combine with other data
  - Watershed analyses

## Existing NWI Classification

- “Classification of Wetlands and Deepwater Habitats of the United States”  
Cowardin et al. (1979)
- Characteristics Emphasized
  - Vegetation
  - Hydrology
  - Salinity
  - Soils and substrates
  - Human impacts

## Two Major Uses of NWI Data for Watershed Planning and Management

- Preliminary Assessments of Wetland Functions
- Watershed Assessments of “Natural Habitat” Integrity

## Enhancing NWI Data for Wetland Functional Assessment

- Additional descriptors needed
  - Landscape position
  - Landform
  - Water Flow Path
  - Waterbody Type

## New Descriptors (LLWW)

- **Landscape Position** - relationship between a wetland and an adjacent waterbody or not (isolated).
- **Landform** - the shape or physical form of wetlands (e.g., basin, flat, slope, island, etc.).
- **Water Flow Path** – the directional flow of water
- **Waterbody Type**

## Functional Assessment Potential

- Preliminary Assessment
- Consider Possible Functions
  - Surface Water Detention
  - Streamflow Maintenance
  - Shoreline Stabilization
  - Nutrient Transformation
  - Coastal Storm Surge Detention
  - Sediment Retention
  - Fish and Wildlife Habitat

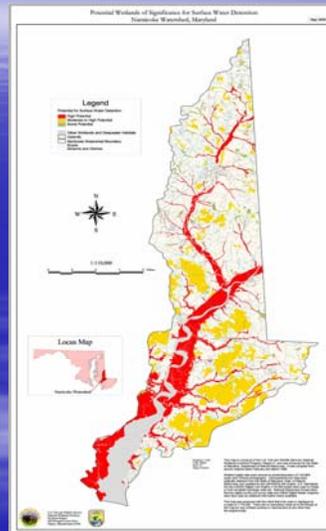
## Steps for Enhanced Classification and Functional Assessment

1. Update NWI digits
2. Field verification of updated NWI data
3. Build wetland database for study watershed
4. Classify LLWW
  -
5. Review and edit LLWW classifications
6. Apply functional correlations to database
7. Review stats/working maps
8. Produce draft report/maps (CD format)
9. Produce final report/maps (CD format)

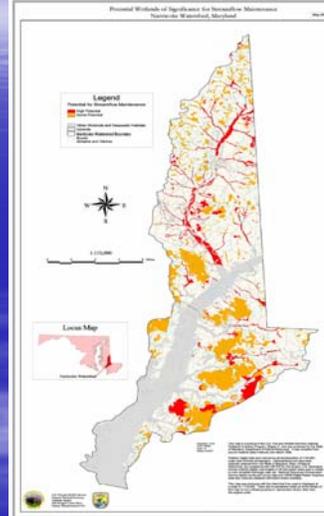
## Watershed Assessment Studies

- Casco Bay Watershed (ME)
- New York City Water Supply Watershed
- Coastal Bays Watershed (MD)
- Nanticoke River Watershed (MD/DE)
  - 1998 and Pre-settlement analyses
- Pennsylvania Coastal Zone
- Hackensack Meadowlands (NJ)

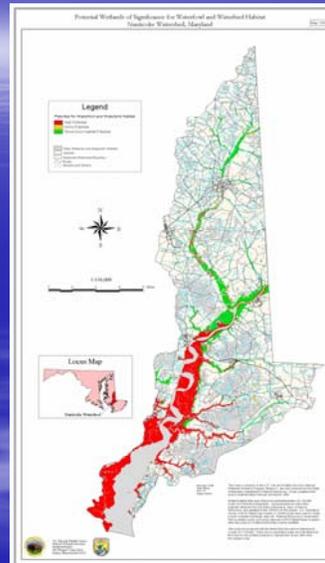
## Nanticoke Watershed - Surface Water



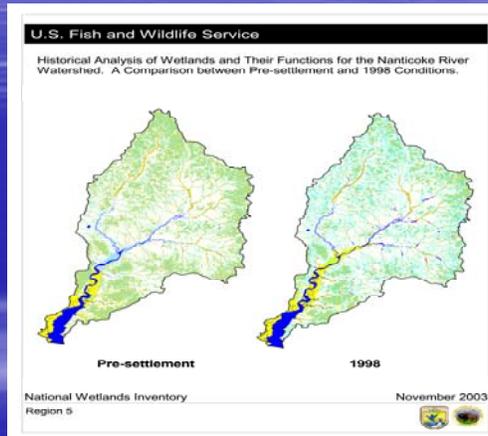
# Nanticoke Watershed - Streamflow Maintenance



# Nanticoke Watershed – Waterfowl & Waterbird Habitat



## Historical Analysis – Cumulative Impacts



## Functional Losses for Nanticoke

- Surface Water Detention -36%
- Streamflow Maintenance -64%
- Nutrient Transformation -47%
- Sediment Retention ■ -46%
- Cstl Storm Surge Detention -23%
- Fish/Shellfish Habitat -33%
- Waterfowl/Waterbird Habitat -34%
- Other Wildlife Habitat -41%

## Values of Enhancing NWI Data

- Produces a better characterization of wetlands
- Perform landscape-level wetland functional assessments
- Include functional loss assessment in wetland trend studies
- Use enhanced NWI data for restoration planning

## Expanding NWI Data for Natural Habitat Integrity Assessment

- Must look beyond wetlands
  - Buffers
  - Land use/cover in the watershed
  - Human disturbance to land and water resources
- Use GIS techniques for assessment

## Indices to Describe the Extent and Condition of “Natural Habitat” in the Watershed

■

### Habitat Extent Indices

- Natural Cover
- River-Stream Corridor Integrity
- Wetland Buffer Integrity
- Pond and Lake Buffer Integrity
- Wetland Extent
- Standing Waterbody Extent

## Habitat Disturbance Indices

- Dammed Stream Flowage
- Channelized Stream Length
- Wetland Disturbance
- Habitat Fragmentation by Roads
- (Drained Land)

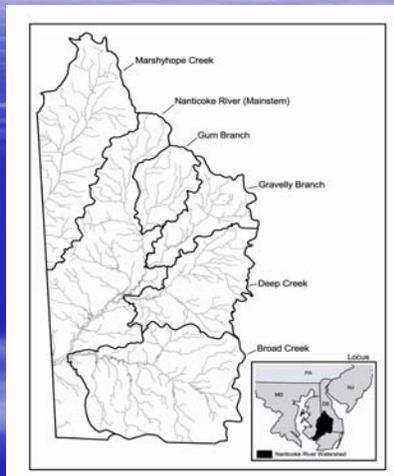
## Assessment - Products

- **Statistics**
  - Values between 1.0 and 0.0 (=%)
  - Extent Example: Natural Cover Index
    - 1.0 = undeveloped watershed (100% integrity)
    - ~ 0.0 = a major city
  - Disturbance Example: Channelized Stream Length
    - 1.0 = all streams channelized
    - 0.0 = all streams not channelized (100% integrity)
- **Maps and Report**
- **Database (for additional analyses)**

# Examples of Data derived from Natural Habitat Integrity Assessment

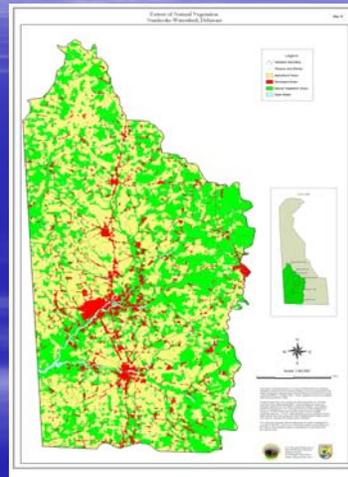
Nanticoke Watershed  
(Delaware)

## Nanticoke Watershed



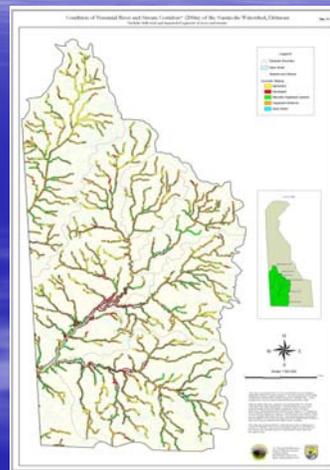
## Natural Cover Index

- Area of Natural Vegetation/Area in Watershed
- 51,813 ha/126,582 ha = 0.41



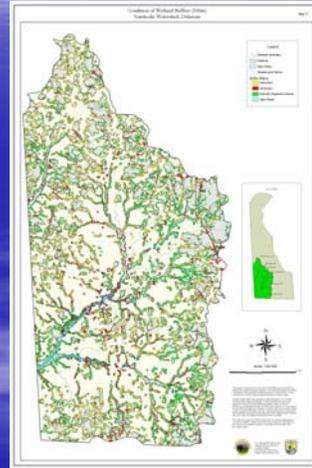
## River-Stream Corridor Integrity Index

- Area of Natural Vegetation within 100m/Area of Corridor in Watershed
- 11,369 ha/19,143 ha = 0.59



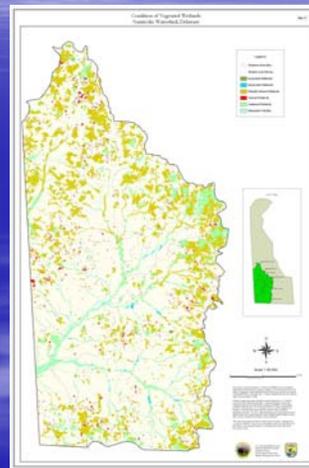
## Vegetated Wetland Buffer Index

- Area of Natural Vegetation in 100m Buffer/Area of Buffer in Watershed
- 11,647 ha/32,125 ha = 0.36



## Wetland Disturbance Index

- Area of altered wetlands/total wetland area
  - Excavated, impounded, farmed, ditched
- 22,076 ha/31,308 ha = 0.71



Wetlands Digital Data - Microsoft Internet Explorer

Address: http://wetlandsfws.er.usgs.gov/NWI/index.html

U.S. Fish & Wildlife Service  
Division of Habitat and Resource Conservation

**Wetlands Geodatabase**  
Providing Wetland Information to the American People

Wetlands Digital Data  
Wetlands Mapper  
Download Wetlands Data

Wetlands Mapper Information  
Introduction  
Layers and Metadata  
History and Changes  
Map Creation and Mapper  
Display  
Wetlands Codes  
OGC Web Map Service  
Disclaimer  
Supplemental Information  
MGD Info Quality Guidelines  
Attribution and Verification  
Tools

Mapping Information  
Product Summary  
Wetlands Definition and Classification  
Data Limitations and Used  
Contributed Wetlands Data

**Wetlands Digital Data**

Click here  
Go to  
Wetlands Mapper

**Build, search, query, and download custom digital maps and data in the area you choose:**

[Go to the Wetlands Mapper](#)

[Download Wetlands Digital Data](#)

**New!** Viewing Wetlands data layers with Google Earth

Digital data available on this site represent the latest, most accurate information available from the U.S. Fish and Wildlife Service's National Wetlands Inventory. These data are also available on [The National Map](#).

The National Map Geospatial One-Stop FIRST GOV

## For Additional Information

Contact:

Herb Bergquist

Region 5 National Wetlands Inventory

[h\\_bergquist@fws.gov](mailto:h_bergquist@fws.gov)

NWI Mapper Site:

<http://wetlandsfws.er.usgs.gov/NWI/>

# **Appendix F: Kevin Moody's Presentation**



# **Green and Gray Infrastructure The Eco-Logical Approach**

**Northeast State Wildlife Action Plan /  
Integrated Natural Resources Management  
Plan**

**June 3 & 4, 2008  
Boston, MA**

**Kevin Moody  
Federal Highway Administration**



## **U.S. DOT and FHWA**

- **USDOT has multiple modes**
  - air, rail, ports, pipelines, highways, etc.
- **FHWA does not own or manage highways**
  - provide funding to state, local agencies
  - acquisitions type oversight
- **Technical Expertise and Technology Transfer**



# FHWA

## Program Delivery:

- Federal Aid Highways – Interstates, essential links, etc.
- Federal Lands Highways - Defense Access Roads, National Forests, Refuges, etc.

## Societal Values:

- Safe & Reliable Roads
- Environmental and Military
  - Leverage our mitigation needs with buffer lands and more
  - We'll share expertise in safety, lighting, community health and aesthetics, visioning & communications
  - Project level design and alignments (easements and mitigation)
  - Integrated Planning (corridors and alignments)



# FHWA

- SAFETEA-LU Section 6001

**Transportation Plans should be coordinated with conservation, recovery, fishery, aquatic habitat, state wildlife, and other plans**

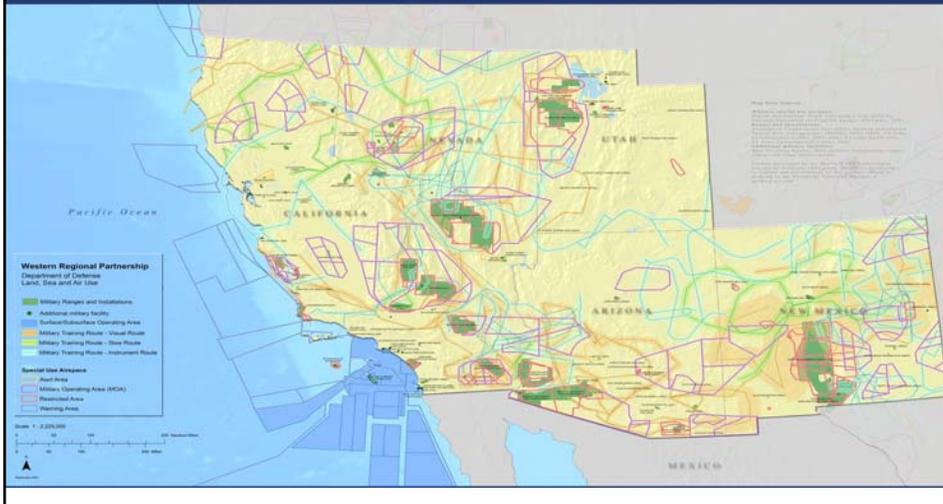
# Decision Makers are Generally Overwhelmed by Data but Underwhelmed by its' Utility

.....

## DATA DUMPS are not analyses

# Leveraging Resources

Department of Defense Land, Sea, and Air Use  
Western Regional Partnership





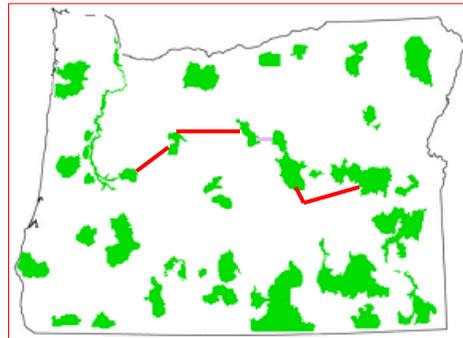
## Eco-Logical Approach

### Integrating

- Information
- People
- Decisions

### Examples

- Connecting Corridors
- Site Selection for Mitigation



## Eco-Logical Approach

### Collaborative Enterprise:

- Identify, protect, and restore:
  - ecosystem patterns and processes;
  - compatible infrastructure
  - appropriate land use mix
- Simultaneously address human and natural environments
- Design for flexibility/resilience

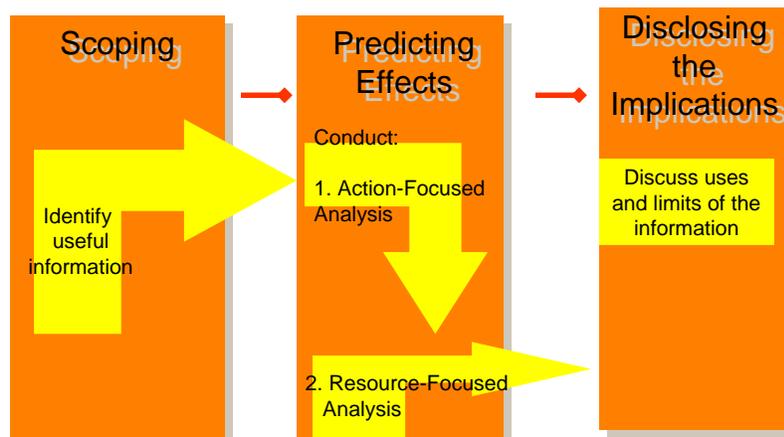
## Useful Information

### Resource Management Plans

#### Describe:

- How resource attribute “works”
- Trends and conditions (sustainability, resilience, and thresholds)
- Risk to resource attribute’s “sustainability”
- Assumptions and Uncertainties

## Useful Information



## Useful Information

### How can resource management plans facilitate better transportation decisions?

- Characterize ... [resource attributes in terms of] response to change and capacity to withstand stresses; and,
- Characterize the stresses affecting ... [the resource in] relation to ... thresholds.

## Integrating Plans

- Write resource plans for action agencies, not grant applicants
- Understanding is most important (consensus is over-rated)
- Facilitate probabilistic EIA and advanced accommodation

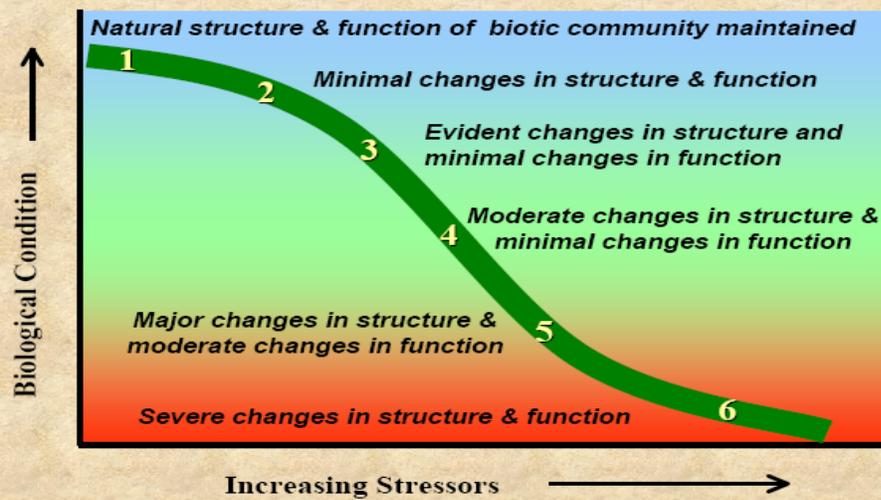
## Useful Information

### “Stationarity is Dead”

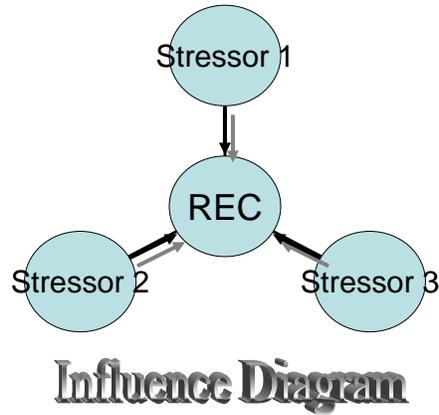
- Bulletin 17B update
- Self-organizing Behaviors
- Uncertainty and Coherence

## Useful Information

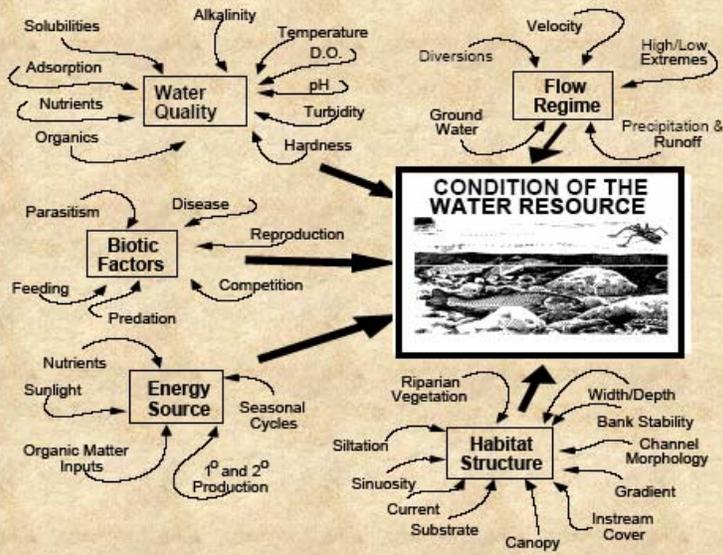
### The Biological Condition Gradient – Concept



# Useful Information

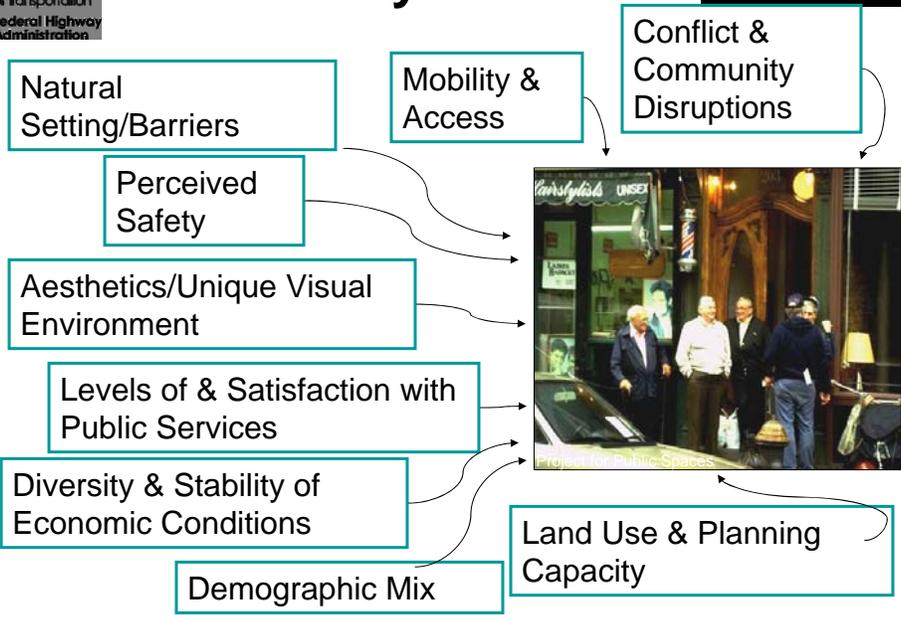


## Five major factors that determine the condition of aquatic resources



(modified from Karr et al. 1986).

# Community Cohesion



# Useful Information

Recommend Monitoring to ...

- Test Assumptions
- Adaptive Management (hypo driven)
- Environmental Management Systems
- Gives Statistical Power to Predictions
- Enhance body of knowledge



# **Green and Gray Infrastructure The Eco-Logical Approach**

*Thanks*

# **Appendix G: Breakout Questions—Day One**

# Break Out Group Instructions

## Day One

In your groups, consider the following questions and discuss various answers/approaches. Record all ideas and suggestions. Choose someone to be the reporter and be prepared to share your top 2 answers for each question with the group.

- Identify benefits to integrating INRMPs and State Wildlife Action Plans processes/information
- Identify barriers between states, USFWS and DoD
- Identify actions/policies/guidance, from the field level, needed to overcome these barriers
- Identify actions/policies/guidance, from headquarters, needed to overcome these barriers
- Identify other management plans that could be integrated into INRMPs/State Wildlife Action Plans

# **Appendix H: Potential Project Ideas**

# Potential Project Ideas

- Predator model for woodland bats with a tie into forest management to create and protect bat habitat and corridors
- Bat inventories, collect biological data through swarming surveys and build on existing efforts (to include all bat species)
- Connecticut river valley initiative for grasslands, with a focus on bird habitat creation, improvement, and sustainment
- Expand Air Force mowing research to include civilian airfields, establish best practices, as well as compare and contrast offsite mitigation
- Regional database development, create a map of comprehensive wildlife habitat which would include DoD installations, expand to fish habitat and species locations
- Dry land management plan
- Invasive species control, cooperative weed management, and establishing a “search and destroy” team
- Pool population management strategies, sharing information on the status of populations, establish best practices
- Early successional habitat and habitat enhancement for: woodcock, whippoorwills, New England cottontail
- Prescribed fire enhancement management plan, include identifying institutional barriers and partnership aspects
- Conservation law enforcement
- Volunteer management, establish a “how-to” on creating friends groups
- Aquatics issues, fish habitat actions plan, issues dealing with fresh water mussels, vernal pool, and non-game fisheries

- Recreations trails demonstration project, partner with highway administrations
- Greening initiatives, recycling and solid waste management projects

# **Appendix I: Breakout Questions—Day Two**

# Break Out Group Instructions

## Day Two

You are now in groups of your own choosing based on the pilot project ideas presented earlier today. First, identify a recorder for the group. Then discuss the logical “next steps” to move your pilot project forward. You will be provided a project template to help you think about the topics you’ll need to discuss. Please fill out the template as completely as possible. Keep in mind the overarching ideas discussed yesterday, as well as the following additional questions:

- Identify a recorder for the group
- Discuss project goals, objectives, milestones, potential partners and a general way forward
- Consider who else may need to be included in the group (other federal agencies, NGOs, state or local government agencies, etc.)
- Discuss Funding Options

**Complete the Project Template** found in the back of your workbook – one copy must be handed in at the conclusion of the workshop