

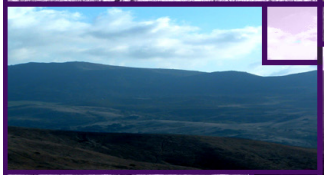





Resources for INRMP Implementation

A Handbook for the DoD Natural Resources Manager

To Print Your Own Copy of the Handbook

The .pdf file containing the handbook can be read onscreen. It can also be printed. Each handbook page occupies half of a sheet of letter-size paper, landscape orientation (8-1/2 inches wide by 5-1/2 inches deep).

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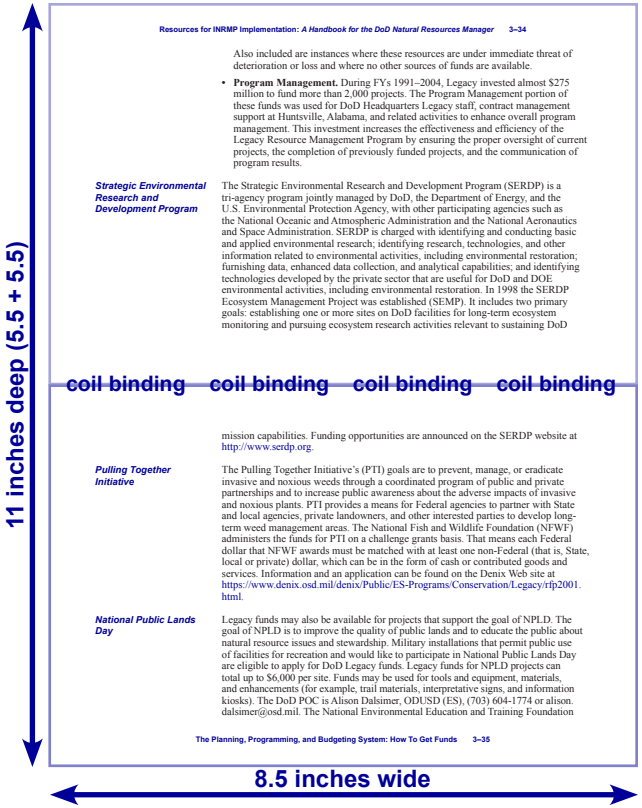

Also included are instances where these resources are under immediate threat of deterioration or loss and where no other sources of funds are available.

- **Program Management.** During FYs 1991–2004, Legacy invested almost $275 million to fund more than 2,000 projects. The Program Management portion of these funds was used for DoD Headquarters Legacy staff, contract management support at Huntsville, Alabama, and related activities to enhance overall program management. This investment increases the effectiveness and efficiency of the Legacy Resource Management Program by ensuring the proper oversight of current projects, the completion of previously funded projects, and the communication of program results.

Strategic Environmental Research and Development Program

The Strategic Environmental Research and Development Program (SERDP) is a tri-agency program jointly managed by DoD, the Department of Energy, and the U.S. Environmental Protection Agency, with other participating agencies such as the National Oceanic and Atmospheric Administration and the National Aeronautics and Space Administration. SERDP is charged with identifying and conducting basic and applied environmental research; identifying research, technologies, and other information related to environmental activities, including environmental restoration; furnishing data, enhanced data collection, and analytical capabilities; and identifying technologies developed by the private sector that are useful for DoD and DOE environmental activities, including environmental restoration. In 1998 the SERDP Ecosystem Management Project was established (SEMP). It includes two primary goals: establishing one or more sites on DoD facilities for long-term ecosystem monitoring and pursuing ecosystem research activities relevant to sustaining DoD mission capabilities. Funding opportunities are announced on the SERDP website at http://www.serdp.org.

Pulling Together Initiative

The Pulling Together Initiative's (PTI) goals are to prevent, manage, or eradicate invasive and noxious weeds through a coordinated program of public and private partnerships and to increase public awareness about the adverse impacts of invasive and noxious plants. PTI provides a means for Federal agencies to partner with State and local agencies, private landowners, and other interested parties to develop long-term weed management areas. The National Fish and Wildlife Foundation (NFWF) administers the funds for PTI on a challenge grants basis. That means each Federal dollar that NFWF awards must be matched with at least one non-Federal (that is, State, local or private) dollar, which can be in the form of cash or contributed goods and services. Information and an application can be found on the Denix Web site at https://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Legacy/rfp2001.html.

National Public Lands Day

Legacy funds may also be available for projects that support the goal of NPLD. The goal of NPLD is to improve the quality of public lands and to educate the public about natural resource issues and stewardship. Military installations that permit public use of facilities for recreation and would like to participate in National Public Lands Day are eligible to apply for DoD Legacy funds. Legacy funds for NPLD projects can total up to $6,000 per site. Funds may be used for tools and equipment, materials, and enhancements (for example, trail materials, interpretative signs, and information kiosks). The DoD POC is Alison Dalsimer, ODUSD (ES), (703) 604-1774 or alison.dalsimer@osd.mil. The National Environmental Education and Training Foundation

Resources for INRMP Implementation:
A Handbook for the DoD Natural Resources Manager
UPDATED SEPTEMBER 2005
from the
The Legacy Resource Management Program

Using the Handbook

This handbook is available as a .pdf file that can be read using Adobe Acrobat Reader or printed. To access an electronic copy of the file, go to www.denix.osd.mil/inrmp or you can conduct a search using the DENIX search engine. For best results when printing, please see the information on the previous page.

The handbook layout allows you to read each entire page on screen with no scrolling required. Specific sections of the handbook can be located using its Contents section or by using Bookmarks (Windows, Bookmarks). Internal cross-references within the document are linked as well.

Web Links

Links to Web pages occur throughout the handbook and are indicated in contrasting color. All of the Internet links included in the handbook were active at the time of publication. If you are unable to access a link or if a Web site has moved and there is no forwarding address, try to locate the Web site using a browser search.

Additional Files

Three separate printable forms are associated with the handbook: a briefing checklist, an INRMP master update list, and an INRMP update report. Examples of these forms are found in the Appendix, and electronic copies of these forms (in Microsoft Word) can be downloaded from http://www.denix.osd.mil/inrmp.

Questions or Comments

Direct questions or comments to the Office of the Under Secretary of Defense, Conservation Team Leader, Peter.Boice@osd.mil. If you have a specific question for the authors, you can e-mail Dorothy Gibb at dgibb@HORNE.COM. For general environmental information, visit http://www.denix.osd.mil.

Cover Photos	
Photo on right:	Morey Pond, McChord Air Force Base, Washington
Photos on left, clockwise from top left:	Prescribed burn at Fort Stewart, Fort Stewart and Hunter Army Airfield, Georgia Pitcher plants in bloom, Marine Corps Base Camp Lejeune, North Carolina Mountain region in the environs of Marine Corps Base Camp Pendleton, California Pond, Fort Custer Training Center, Michigan Beach landing exercises at Marine Corps Base Camp Lejeune, North Carolina Soil horizons in road cut, Marine Corps Base Camp Pendleton, California

Contents

Preface ix

Acknowledgments xi

Acronyms xv

Chapter 1. Background
Integrated Natural Resource Management Plans 1–1
General DoD Documents 1–3
Service-Specific Documents 1–6
Other Relevant Publications 1–8
Reference Notes 1–9
Exhibit
1–1. Specific Contents of an INRMP 1–4

Chapter 2. The Role of Command in INRMP Implementation
DoD Command Structure and Ecosystem Management 2–1
Responsibilities of the Natural Resources Manager . . 2–2
Key Installation Personnel and the Natural Resources Manager 2–5
Installation Commander 2–6
Chief of Staff 2–7
Garrison Commander (or Service-Equivalent Designee) 2–8
Public Works Center 2–8
The Director of Plans, Training, and Mobilization (DPTM) 2–10
Flight Safety 2–11
Public Affairs 2–13
Provost Marshal (or Service-Equivalent) 2–13
Communications With Key Installation Staff 2–15
Reference Notes 2–16
Exhibits
2–1. Flight Safety Resources 2–12
2–2. Tips on Maintaining Communications 2–15

Chapter 3. The Planning, Programming, and Budgeting System: How To Get Funds
INRMPs and the Budget Process 3–1
Integrating Budget Development and INRMP Implementation 3–3
The Department of Defense Budget Development Process 3–6
The Planning, Programming, and Budgeting System for the Department of Defense 3–8
Collecting and Reviewing Environmental Requirements and Costs 3–15
The Environmental Program Requirements Module 3–17
Service-Specific Guidance 3–20
Funding Under the National Defense Appropriations Act 3–21
Alternative Sources of Funds 3–23
Forest Products and Timber Sales 3–24
Agricultural Outleasing 3–25
Hunting, Fishing and Trapping Fees 3–26
The Legacy Resource Management Program . . 3–27
Strategic Environmental Research and Development Program 3–34
Pulling Together Initiative 3–35
National Public Lands Day. 3–35
Non-DoD Funding Sources. 3–36
Reference Notes 3–41
Exhibits
3–1. Maintaining and Updating the INRMP 3–2
3–2. The PPBS and INRMP Implementation 3–4
3–3. Department of Defense Environmental Responsibilities 3–7
3–4. Major Actions for Budget Development 3–9
3–5. Component Environmental Quality Budget Summaries by Program 3–16
3–6. Sources for Help With Writing Grant Proposals or Funding Requests 3–37
3–7. Funding Sources Used by the Commonwealth of Massachusetts to Support Statewide and Community Wetland Restoration Projects 3–40

Chapter 4. Using the Funds: Contracts and Agreements 101
Procuring Services and Obligating Funds. 4–1
Privatization and Outsourcing. 4–4
Support Provided by Other Military Services. 4–5
Interagency Agreements 4–6
Cooperative Agreements. 4–10
Reference Notes 4–15

Exhibits
4–1. Basic Steps To Obligate Funds 4–3
4–2. Personnel Assistance Mechanisms 4–7
4–3. How and When To Use a Cooperative Agreement 4–11

Chapter 5. Effective Communications
Communication Information and Assistance 5–1
Establishing an Internal Communications Network . . 5–3
Natural Resources/Land Management Review Committee 5–3
Installation Communications for NEPA Issues . . 5–5
Briefing Fundamentals 5–8
Electronic Communications Guidance 5–11
Maintaining an Internal Communications Network 5–12
The Importance of External Communications 5–13
Integrated Natural Resources Management and NEPA 5–15
INRMP Review Processes 5–16
Reference Notes 5–17
Exhibit
5–1. The NEPA Process 5–6

Chapter 6. Partnering
Why Partner? 6–1
The Partnership Concept 6–3
How to Get Started 6–9
Partners For Research And Resource Management On Military Installations 6–9
Toward a Volunteer Research Internship Program at Dare County Air Force Range . . . 6–11
Toward a Resources Management Volunteer Partnership Program at Little Rock Air Force Base 6–16
Using Memorandums of Understanding and Agreement 6–18
Reference Notes 6–19
Exhibits
6–1. The Benefits of Partnership 6–2
6–2. Choosing and Keeping Partners 6–6
6–3. Characteristics of Successful and Failed Partnerships 6–7
6–4. Basic Tenets for Effective Partnerships 6–12
6–5. Master List of Agreements 6–20

Chapter 7. Outreach, Education, and Training
The Social Components of INRMP Implementation 7–1
What Is Outreach? 7–1
Your Outreach Strategy 7–3
Determine Who Is Your Public 7–3
Establish the Message 7–4
Communicating Your Message 7–5
Finding and Nurturing Volunteers 7–7
National Environmental Policy Act and Public Participation 7–9
Outreach Information Sources 7–12
Hands-On Participation in Outreach Activities 7–13
Professional Education and Training 7–14
Training for the Natural Resources Manager . . . 7–16
Specialized Training Centers 7–19
Training for Natural Resources Law Enforcement 7–23
Training for a Crisis 7–24
Reference Notes 7–26
Exhibits
7–1. Public Education and Outreach at Fort Belvoir, Virginia 7–2
7–2. Outreach Media Tools 7–6
7–3. Volunteers and Liability Issues 7–10
7–4. Fort Stewart, GA, A Model Installation for Employee Training 7–16
7–5. Examples of Disciplines and Areas for Conservation Law Enforcement Officer Training 7–25

Chapter 8. Monitoring Progress and Measuring Success
Monitoring and Ecosystem Management 8–1
Why Monitor? 8–2
Types of Monitoring 8–5
Priorities and Objectives for Monitoring 8–6
Monitoring Indicators 8–10
Developing Thresholds 8–12
Data Collection and Management 8–16
Using Existing Data 8–16
Data Collection and Management Protocols . . . 8–17
Data Collection and Management Resources . . . 8–22
Data Analysis and Management Adjustment 8–23
Program Success 8–26
Different Perspectives on Success 8–27
Conservation Measures of Merit 8–28
Reference Notes 8–31

Exhibits
8–1. Adaptive Management 8–3
8–2. Developing a Monitoring Program 8–8
8–3. Examples of INRMP Conservation Goals and Associated Monitoring Objectives 8–10
8–4. Highlights of Yakima Training Center's Monitoring Program and INRMP Implementation 8–14
8–5. Sample Monitoring Objectives, Monitoring Indicators, Management Thresholds, and Management Actions 8–15
8–6. Forest Health Monitoring 8–19
8–7. Data Collection and Data Management Standards 8–20
8–8. Adaptive Management Scenarios 8–24
8–9. Department of Defense Conservation Measures of Merit 8–29

Chapter 9. Implement, Update, and COORDINATE
Where Do You Go From Here? 9–1
Using an INRMP Should Be Habit-Forming 9–1
Launching an INRMP 9–4
Defining INRMP Implementation 9–5
INRMP Reporting Requirements 9–6
Coordination with the U.S. Fish and Wildlife Service and State Fish and Wildlife Agencies 9–6
Coordination for Preparing or Revising an INRMP 9–8
The INRMP as a Substitute for Critical Habitat Designation 9–9
Updating an INRMP 9–14
The Low-Tech Approach 9–14
The Higher-Tech Approach 9–15
A Fully Internet-Based Approach 9–15
Additional Resources for Implementation 9–18
Successful INRMP Implementation 9–18
Reference Notes 9–19
Exhibits
9–1. Coordination Procedure When Updating an INRMP 9–10
9–2. Steps to Submitting Electronic Updates to the INRMP 9–16

Appendix. Natural Resources Manager Toolbox
Exhibits
A–1. Briefing Checklist A–3
A–2. INRMP Master Update List A–7
A–3. INRMP Update Report A–9
A–4. Useful Web Sites for Natural Resources Managers A–12

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Preface

This handbook is intended to assist you, the installation natural resources manager (NRM), in implementing your installation's integrated natural resources management plan (INRMP). This book is the product of intensive research of numerous Department of Defense (DoD) information sources and other groups involved in land management. It incorporates information from regulations, instructions, memoranda, and guides, as well as from interviews with natural resources managers. Its purpose is to provide you with easy-to-read guidance, tips, and strategies to help you implement your plans, track your progress, and achieve success.

This version has been updated to include active hyperlinks to Web-published resources, current guidance and regulations, and a revised and expanded chapter on maintaining and updating INRMPs.

While this handbook is intended as a reference guide for NRMs at the installation level, its scope is limited to dealing with administrative, procedural, and broad-based management issues. Specific field practices, methodologies, data analyses, and other scientifically based topics are not the subject of the handbook.

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Acronyms

ADC	Animal Damage Control
AEC	Army Environmental Center
AFB	Air Force Base
AFCEE	Air Force Center for Environmental Excellence
AFI	Air Force Instruction
AF/ILEV	Air Force Environmental Division
AFPC	Air Force Personnel Center
AFR	Air Force Range
AHAS	Avian Hazard Advisory System
APHIS	Animal and Plant Health Inspection Service
AR	Army Regulation
BAM	Bird Avoidance Model
BASH	Bird Aircraft Strike Hazard
BIRD	Breeding Biological Research and Monitoring Database
BLM	Bureau of Land Management
BRAC	Base Realignment and Closure
CA	Cooperative Agreement
CECOS	Civil Engineer Corps Officer School
CFDA	Catalog of Federal Domestic Assistance
CNRMP	Cultural and Natural Resources Management Plan
DERP	Defense Environmental Restoration Program
DESCIM	Defense Environmental Security Corporate Information Management
DFAR	Defense Federal Acquisition Regulation

DFAS	Defense Finance and Accounting Service
DFC	Desired Future Condition
DLA	Defense Logistics Agency
DLP	Distance Learning Program
DoD	Department of Defense
DoDGARs	DoD General Regulations for the Award and Administration of Grants and Agreements
DoDI	Department of Defense Instruction
DOE	Department of Energy
DPG	Defense Planning Guidance
DPTM	Director of Plans, Training, and Mobilization
EA	Environmental Assessment
EFA	Engineering Field Activity
EFC	Environmental Finance Center
EFD	Engineering Field Division
EIS	Environmental Impact Statement
EMAP	Environmental Monitoring and Assessment Program
EPA	Environmental Protection Agency
EPRM	Environmental Program Requirements Module
EQC	Environmental Quality Control
EQR	Environmental Quality Reporting
FAR	Federal Acquisition Regulation
FGDC	Federal Geospatial Data Committee
FLETC	Federal Law Enforcement Training Center
FONSI	Finding of No Significant Impact
FY	Fiscal Year
FYDP	Future Year Defense Plan
GIS	Geographic Information System
HQ	Headquarters
IAG	Interagency Agreement
ICRMP	Integrated Cultural Resources Management Plan
ID/IQ	Indefinite Deliver/Indefinite Quantity

INRMP	Integrated Natural Resources Management Plan
IPA	Intergovernmental Personnel Act
IPR	In-Progress Review
IPT	Integrated Product Team
ITAM	Integrated Training Area Management
MCCS	Marine Corps Community Services
MILCON	Military Construction
MIPR	Military Interdepartmental Purchase Request
MOA	Memorandum of Agreement
MOM	Measure of Merit
MOU	Memorandum of Understanding
MWR	Morale, Welfare, and Recreation
NABCI	North American Bird Conservation Initiative
NAGPRA	Native American Graves Protection and Repatriation Act
NBII	National Biological Information Infrastructure
NCTC	National Conservation Training Center
NEDI	National Environmental Data Index
NEPA	National Environmental Policy Act
NPLD	National Public Lands Day
NOAA	National Oceanic and Atmospheric Administration
NRCS	National Resources Conservation Service
NRM	Natural Resources Manager
NSDI	National Spatial Data Infrastructure
NTC	National Training Center
NTIS	National Technical Information Service
NWR	National Wildlife Refuge
O&M	Operations and Maintenance
OMB	Office of Management and Budget
ORAU	Oak Ridge Associated Universities
ORISE	Oak Ridge Institute of Science and Education
OSD	Office of the Secretary of Defense
PAO	Public Affairs Office
PAQ	PALACE Acquire Intern Program
PIF	Partners in Flight

POC	Point of Contact
POM	Program Objectives Memorandum
PPBS	Planning, Programming, and Budgeting System
PR&C	Purchase Request and Commitment
PWC	Public Works Center
RDT&E	Research, Development, Testing, and Evaluation
ROD	Record of Decision
SAIA	Sikes Act Improvement Act
SCA	Student Conservation Association
SERDP	Strategic Environmental Research and Development Program
SOW	Statement of Work
TNC	The Nature Conservancy
USACE	U.S. Army Corps of Engineers
USAEC	U.S. Army Environmental Center
USAMRAA	U.S. Army Medical Acquisition Activity
USDA	U.S. Department of Agriculture
USDI	U.S. Department of the Interior
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
WDW	Washington Department of Wildlife
WES	Waterways Experiment Station
WIMS	Work Information Management System
YTC	Yakima Training Center

Chapter 1
Background

Integrated Natural Resource Management Plans

Integrated Natural Resources Management Plans (INRMPs) are the means by which the Department of Defense (DoD) is fulfilling its responsibility as a steward of public lands while maintaining full support of the military mission. The plans are mandated under the Sikes Act as amended by the Sikes Act Improvement Act (SAIA) of 1997.[1] The Sikes Act requires the Secretary of Defense to carry out a program to provide for the conservation and rehabilitation of natural resources on lands used for military mission activities. INRMPs are used to implement this program.

Under the Sikes Act, an INRMP must be prepared and implemented for every military installation, regardless of size, except those installations lacking significant natural resources. Based on the DoD Memorandum, "Implementation of Sikes Act Improvement Act: Updated Guidance,"[2] an INRMP typically is required if an installation undertakes **more than one** of the following:

- Fish and wildlife management
- Land management

- Forest management
- Natural resources-based outdoor recreation
- On-the-ground military mission operations
- Threatened and endangered species management
- Hunting and fishing management.

The passage of the SAIA in 1997[3] modified sections of the Sikes Act. Key changes include the following:

- Replacing the term "cooperative plan" with "integrated natural resources management plan" and specifying the required elements of INRMPs
- Emphasizing natural resources versus "fish and wildlife"
- Requiring both preparation and implementation of an INRMP
- Requiring establishment of specific natural resources management goals, objectives, and time frames
- Requiring regular review of the INRMP not less than every 5 years
- Eliminating cost sharing and matching requirements of cooperative agreements
- Allowing funds under cooperative agreements to be expended over an 18-month period as opposed to within a given fiscal year
- Requiring that the public have an opportunity to comment on an installation INRMP

- Requiring cooperative preparation with U.S. Fish and Wildlife Service and the fish and wildlife agency of the State in which the military installation is located.

General DoD Documents

Over the last several years various guidance documents have been prepared on interpretation of the SAIA and on INRMP preparation. In preparing revisions or updates to your INRMP, you are encouraged to refer to other Services' INRMP guidance so that you may apply pertinent and current information to your INRMP. Below are listed key DoD documents relevant to natural resources management, INRMP preparation/revision, and INRMPs.[4]

- **Memorandum on Implementation of Ecosystem Management in DoD**. This Memorandum issued by the Deputy Under Secretary of Defense (Sherri Goodman), on 8 August 1994, was the first formal statement of an ecosystem management approach to land management in the DoD. Ecosystem management is to be achieved through developing and implementing INRMPs. This Memorandum contains DoD's 10 principles of ecosystem management as an attachment, which were later included as an enclosure in DoDI 4715.3 (see below).
- **Department of Defense Instruction 4715.3, *Environmental Conservation Program,* 3 May 1996.** This Department of Defense Instruction (DoDI) pertains to both natural and cultural resources management on DoD lands. It includes budgeting classifications for funding priorities and detailed information on the intent of INRMPs. Exhibit 1–1 lists the specific contents required in an INRMP document, as listed in the DoDI 4715.3.[5]

Exhibit 1–1. Specific Contents of an INRMP

1. A summary of known natural resources information.
2. Analysis of the sufficiency of the existing information on natural resources and associated contexts to meet compliance requirements.
3. Information on areas that have not been inventoried and a plan for completion of the inventory.
4. Identification and prioritization of actions required to implement goals and objectives of the plan.
5. Identification of the type and location of actions that may affect natural resources.
6. Procedures to ensure that actions of the installation and its tenants are planned and carried out in ways that protect and enhance its natural resources.
7. Identification of unique natural resource issues confronting the installation.
8. Conservation and mitigation strategies for threatened natural resources.
9. Coordination processes between the installation, regulatory agencies and the public that help to ensure proper management of an installation's natural resources.
10. Provisions for sharing appropriate natural resources information with Federal and State Agencies, nongovernmental organizations, researchers, and the general public.
11. Standard operating procedures tailored for the particular conditions at the installation for routine occurrences, for repetitive ecosystem maintenance and enhancement, (where blanket statements can coordinate a process such as inventories), and for spill responses where natural resources are involved.
12. Procedures for consultation with all interested groups and individuals that represent an interest in natural resources.
13. Provisions for enforcement of natural resource laws and regulations by professionally trained personnel.
14. Provisions for public access to natural resources, as appropriate.

Source: Department of Defense, DoDI 4715.3, *Environmental Conservation Program,* Enclosure 7 (May 3, 1996).[7]

- ***Memorandum on Implementation of Sikes Act Improvement Act: Updated Guidance.***[6] This Memorandum of the Under Secretary of Defense, issued on 10 October 2002, provides guidance for implementing the requirements of the Sikes Act in a consistent manner throughout DoD and replaces the 21 September 1998 guidance Implementation of the Sikes Act Improvement Amendments. The October 2002 memorandum and its supplement issued in November 2004[8] emphasize implementing and improving the overall INRMP coordination process and focus on coordinating with stakeholders, reporting requirements and metrics, budgeting for INRMP projects, using the INRMP as a substitute for critical habitat designation, supporting military training and testing needs, and the INRMP review process.
- ***The Implementation of Sikes Act Improvement Amendment: Supplemental Guidance Concerning Leased Lands,* 17 May 2005.**[9] This document provides supplemental guidance for implementing SAIA requirements consistently throughout the Department of Defense. The guidance covers lands occupied by tenants or lessees or being used by others pursuant to a permit, license, right of way, or any other form of permission. INRMPs must address the resource management on all lands for which the subject installation has real property accountability, including leased lands. Installation commanders may require tenants to accept responsibility for performing appropriate natural resource management actions as a condition of their occupancy or use, but this does not preclude the requirement to address the natural resource management needs of these lands in the installation INRMP.

Service-Specific Documents

- **Army Regulation 200–3, *Natural Resources—Land, Forest and Wildlife Management,* 28 February 1995.**[10] This Army Regulation (AR) states the current Army policies, procedures, and standards for the conservation, management, and restoration of land and renewable natural resources consistent with and in support of the military mission and national policy. It identifies the responsibilities for INRMP preparation, content, coordination requirements, revision, and approval. This regulation is being superseded by a new AR 200–1 that combines natural and cultural resources regulations into one updated regulation. AR 200–3 will remain in effect until the new AR 200–1 is issued (estimated January–February 2006). For information on AR 200–1, contact Steve Sekscienski, U.S. Army Environmental Center, (410) 436-1560, e-mail steven.sekscienski@aec.apgea.army.mil.
- ***Guidelines to Prepare Integrated Natural Resources Management Plans for Army Installations and Activities,* April 1997.**[11] Army installations are required by Army regulations to prepare and implement an INRMP. This document is provided to help installations meet this requirement. It gives guidance on INRMP format, the approval process, and coordination and review. It also gives guidance on the types of issues that need to be included in a plan, such as setting priorities for implementing projects, implementation strategies, and funding.
- **National Guard Bureau All States Letter P00–0039, *Integrated Natural Resources Management Plans,* 15 June 2000.**[12] This memorandum provides National Guard policy and guidance on INRMPs. It includes items such as how to incorporate Integrated Training Area Management (ITAM), the approval process, and natural resource issues to be covered in the INRMP.

- **Department of the Navy, OPNAVINST 5090.1B, Chapter 22, "Natural Resources Management," revised 9 September 1999.**[13] This revised chapter of the Navy *Environmental and Natural Resources Program Manual* addresses INRMP preparation and implementation and the requirements of the Sikes Act, as amended (SAIA 1997).
- **Department of the Navy, NAVFAC P–73 Vol. II, *Real Estate Operations and Natural Resources Management Procedural Manual,* May 1987.**[14] This manual addresses Chief of Naval Operations natural resources program requirements, guidelines, and standards.
- ***Guidelines for Preparing Integrated Natural Resources Management Plans for Navy Installations,* September 1998.**[15] This guidance provides natural resources managers at Navy installations with an interpretation of what processes are needed to prepare INRMPs. This document is divided into three sections. The first section suggests a process to develop an INRMP. The second section addresses traditional technical areas to be included in the INRMP. The third section includes a discussion on implementing the INRMP. The Navy is developing updated INRMP guidance, including an INRMP template. This guidance may be issued in 2005. For information on the updated guidance, contact Lorri Schwartz, NAVFAC HQ, (202) 685-9332, e-mail lorri.schwartz@navy.mil.
- **Air Force Instruction 32–7064, 17 September 2004.**[16] This updated Air Force Instruction (AFI) has been extensively revised and supersedes AF 32–7064 of 1 August 1997. The updated AFI includes chapters on INRMP implementation; wetlands; floodplains; coastal and marine resources; resources management (fish and wildlife, threatened and endangered species, forest, outdoor recreation, land,

wildland fire, and invasive species); agricultural outgrants; bird/wildlife aircraft strike hazard; public relations; budgeting; and training, research, and development.

- ***Marine Corps Handbook for Preparing, Revising and Implementing Integrated Natural Resources Management Plans on Marine Corps Installations,* May 2004.**[17] This updated handbook provides guidance on preparing INRMPs at Marine Corps installations in compliance with the SAIA. It includes discussion of DoD's 2002 updated SAIA guidance; preparing, revising, and updating INRMPs; and funding INRMP implementation. It addresses the need for Marine Corps installations to apply NEPA to the INRMP update process.
- **Marine Corps MCO P5090.2A, *Environmental Compliance and Protection Manual,* July 1998, Chapter 11: "Natural Resources Management Program."**[18] This regulation establishes Marine Corps policy and responsibilities for compliance with procedural and statutory requirements for managing natural resources at Marine Corps installations.
- **Marine Corps MCO 5090.4, *Conservation Law Enforcement Program,* 6 October 2003.**[19] This regulation describes the sustainable use of military lands for readiness activities by enforcement of applicable federal and state laws for the protection of sensitive natural and cultural resources.

Other Relevant Publications

- ***Conserving Biodiversity on Military Lands: A Handbook for Natural Resources Managers,* 1996.**[20] This handbook presents background information and practical guidance on implementation of biodiversity conservation and ecosystem management. It is the product of the ideas and recommendations that came out of

the Keystone Dialogue, a DoD-sponsored biodiversity initiative between DoD, The Nature Conservancy, and the Keystone Center. Although not specifically geared towards INRMP implementation, the publication contains much useful information specifically targeted to the installation natural resources manager, including discussions of biodiversity and conservation, funding and staffing, goals and objectives, monitoring, and management tools.

- ***Ecological Stewardship: A Common Reference for Ecosystem Management,* 1999.**[21] This comprehensive publication is intended as a "practical reference for scientists and resources managers." The introductory sections include discussions of the ecosystem management approach. Also included are the topics of diversity, scale, ecosystem processes and function, sustainability, restoration, cultural issues, legal perspectives, risk assessment, adaptive management, assessment and monitoring methods, monitoring and data management, and much more. The volumes deal with not only the environmental sciences but also the social and economic aspects of natural resources decision making and management.

Reference Notes

1. The Sikes Act Improvement Act of 1997, Public Law 105–85, Div. B. Title XXIX, Nov. 18, 1997; and codified at 16 U.S.C. § 670a et seq. (1998) (amending The Sikes Act of 1960, 16 U.S.C. § 670a et seq. (1996)). Full text can be found at http://thomas.loc.gov/home/thomas2.html or http://www4.law.cornell.edu/uscode/16/670a.html.
2. Department of Defense, Memorandum of the Deputy Under Secretary of Defense (Installations and Environment), 10 October 2002, *Implementation of Sikes Act*

Improvement Act: Updated Guidance. Available at https://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Legacy/Sikes/max0002.pdf.

3. See Note 1 above.
4. Copies of the text of the documents may be retrieved from the following internet web pages: Washington Headquarters Services Directives and Records Branch at http://www.dtic.mil/whs/directives; DoD and Component Policy Index at http://www.denix.osd.mil/denix/Public/Policy/pol-index.html; or http://thomas.loc.gov/home/thomas2.html.
5. Department of Defense, DoDI 4715.3, *Environmental Conservation Program* (May 3, 1996). Available at http://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Policy/note1.html.
6. See Note 2 above.
7. See Note 5 above.
8. Department of Defense, Memorandum of 1 November 2004 regarding supplemental guidance to the October 2002 implementing guidance on the Sikes Act Improvement Act, *Supplemental Guidance for Implementation of the Sikes Act Improvement Act: Additional Guidance Concerning INRMP Reviews.* Text available at http://www.denix.osd.mil/denix/Public/Library/NCR/Documents/Supplemental-Sikes-signed-2004.pdf.
9. Department of Defense, The Implementation of Sikes Act Improvement Amendment: Supplemental Guidance Concerning Leased Lands (17 May 2005).

Available at https://www.denix.osd.mil/denix/Public/Library/NCR/Partnerships/SikesGuidance_LeasedLands.pdf.

10. AR 200–3, *Natural Resources—Land, Forest, and Wildlife Management,* 28 February 1995 (effective 28 March 1995). Text available at http://www.denix.osd.mil/denix/Public/Policy/Army/ar200-3.html.

11. *Guidelines to Prepare Integrated Natural Resources Management Plans for Army Installations and Activities*. April 1997. Document is available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161. U.S. Army Environmental Center (AEC) Report No. SFIM-AEC-EQ-TR-97019. For further information, contact AEC at ATTN: SFIM-AEC-EQN, Aberdeen Proving Ground, MD 21010-5401 or (410) 671-1559, DSN 584-1559. Also available through the AEC website (http://www.aec.army.mil) at Natural Resources Program, Guidance and Regulation Documents.

12. National Guard Bureau All States Letter (P00-0039), *Integrated Natural Resources Management Plans,* 15 June 2000. This All States Letter supersedes National Guard Bureau All States Letter (P97-0046), *Integrated Natural Resources Management Plans,* 30 June 1997.

13. OPNAVINST 5090.1B (Change 2), *Environmental and Natural Resources Program Manual,* Department of the Navy, Office of the Chief of Naval Operations, Washington, DC. Chapter 22: "Natural Resources Management," revised 9 September 1999. Available at http://neds.nebt.daps.mil/Directives/5090_1bc.pdf.

14. NAVFAC P–73 Vol. II, *Real Estate Operations and Natural Resources Management Procedural Manual,* May 1987.

15. *Guidelines for Preparing Integrated Natural Resources Management Plans for Navy Installations,* September 1998.

16. AFI 32–7064, *Integrated Natural Resources Management,* 17 September 2004. Available at http://www.e-publishing.af.mil/pubs/publist.asp?puborg=AF&series=32&page=2.

17. *Handbook for Preparing, Revising and Implementing Integrated Natural Resources Management Plans on Marine Corps Installations.* May 2004. For a copy of this guidance, contact Heidi Hirsh, HQMC, at (703) 695-8240, e-mail hirshh@hqmc.usmc.mil, http://hqinet001.hqmc.usmc.mil/i&L/index.htm.

18. MCO P5090.2A, *Environmental Compliance and Protection Manual,* Chapter 11: "Natural Resources Management Program," July 1998. Available at http://www.denix.osd.mil/denix/Public/Policy/Marine/5090.2A/contents.html.

19. MCO 5090.4, *Conservation Law Enforcement Program,* 6 October 2003. Available at http://www.hqmc.usmc.mil, select Marine Corps Publications, Orders/Directives.

20. *Conserving Biodiversity on Military Lands: A Handbook for Natural Resources Managers.* 1996. M. Leslie, G.K. Meffe, J.L. Hardesty, and D.L. Adams. The Nature Conservancy, Arlington, VA. Available at http://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Biodiversity/biodiversity.html.

21. *Ecological Stewardship: A Common Reference for Ecosystem Management.* 1999. Three-volume set and CD by Elsevier Science Ltd., The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, UK. ISBN: 0-08-042816-9 (Volume I), 0-08-043206-9 (Set: Volumes I–III). Cooperating agencies included the USDA Forest

Service, USDI National Oceanic and Atmospheric Administration, USDI Bureau of Land Management, USDI Fish and Wildlife Service, USDI Biological Survey and USDI National Biological Service, USDI National Park Service, and the World Resources Institute. Volume I: *Key Findings,* edited by N.C. Johnson, A.J. Malk, R.C. Szaro, and W.T. Sexton. Volume II: *Biological and Ecological Dimensions; and Humans as Agents of Ecological Change,* edited by R.C. Szaro, N.C. Johnson, W.T. Sexton, and A.J. Malk. Volume III: *Public Expectations, Values and Law; Social and Cultural Dimensions; Economic Dimensions; and Information and Data Management,* edited by W.T. Sexton, A.J. Malk, R.C. Szaro and N.C. Johnson.

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Chapter 2
The Role of Command in INRMP Implementation

DoD Command Structure and Ecosystem Management

The INRMP essentially is the installation commander's plan of action for the installation's natural resources program. The commander and all key persons within the chain of command play an important role in the INRMP implementation process. Effective communication and interaction between you, the natural resources manager (NRM), and command personnel are vital for ensuring that installation activities are implemented as planned under the INRMP.

However, successful INRMP implementation is not solely dependent upon the NRM and command personnel. The implementation of ecosystem management in the DoD and the subsequent adoption of an ecosystem approach to natural resources management grew out of the need to look "beyond the fence" and sometimes far out into the surrounding regions. The 1994 announcement of the ecosystem management principles by the Deputy Under Secretary of Defense (Environmental Security) was the first formal statement of an ecosystem management policy in the DoD.[1] Beyond the fence are myriad environmental, social, and economic issues that can significantly affect installation natural resources management but over which an installation may have little control or impact.

An ecosystem management approach not only involves a need to consider issues covering a greater region (increased spatial scale), but also issues spanning many years (increased time scale). Further, implementation of an ecosystem approach requires decision making on a whole host of issues both local and regional, short- and long-term, and involving participation by many different groups operating at many different organizational levels. The chain of command in DoD elements does not readily lend itself to this type of decision making. Nor does the DoD command structure readily fit with the levels of interaction necessary to successfully deal with the broad scales or diverse hierarchies involved in ecosystem management.

Responsibilities of the Natural Resources Manager

Holding the position of the NRM requires you to manage a great diversity of issues, groups, and individuals that may be involved in INRMP implementation. This responsibility for coordination, communication, and skilled management frequently goes unnoticed by command. The following is a partial list of groups external to the installation but with which an installation NRM may need to coordinate or communicate on a regular basis concerning INRMP implementation.

- Water/wetland/threatened and endangered species compliance groups and agencies (State wetland and State water quality groups, U.S. Army Corps of Engineers (USACE) Regulatory Branches, U.S. Environmental Protection Agency (USEPA), U.S. Fish and Wildlife Service (USFWS))
- State and Federal natural resource agencies (for example, State fish and game agencies, State natural heritage programs, USFWS, Natural Heritage Network)

- Special interest programs/groups (for example, Partners in Flight (PIF), Audubon Society, The Nature Conservancy (TNC), Ducks Unlimited, Chesapeake Bay Program, Mohave Desert Ecosystem Initiative, Watchable Wildlife Inc.)
- Local and regional planners (county, water district, State, regional)
- State and Federal land management agencies (State forestry programs, Federal agencies such as the U.S. Department of Agriculture (USDA), U.S. Forest Service (USFS), Bureau of Land Management (BLM))
- Technical support/assistance groups (agricultural extension agencies, National Resources Conservation Service, USACE Waterways Experiment Station, individual military services headquarters natural resources groups)
- Contracting and management support groups (various USACE contracting offices, various USACE Planning offices, Legacy Resources Management Program, private contractors and service providers)
- Private and citizens groups, and individuals (education groups, scientists, volunteers, rod and gun groups, local community groups, scout troops, 4-H Wildlife and Fisheries groups, media reporters including television, radio and print)
- Professional organizations and peer groups (National Military Fish and Wildlife Association, Ecological Society of America, The Wildlife Society, Society of American Foresters, Society of Range Management).

It is critical that the installation commander understands the potential contributions that the NRM provides to the overall image and the successful operation of the

installation through interactions with these groups and organizations. Effective communication with such diverse groups greatly improves the success of the natural resources program and benefits the overall status of the installation.

The NRM needs the full support of the command if you are to be successful in communication and coordination with both installation and off-post groups. Installation commanders, supported by their environmental, natural resources, and public affairs staff, are finding that, to succeed in the mission, the command organization must adapt to these new issues. Installations must become more directly involved in local and regional issues and take an active role in addressing them.

The extension of an installation's interest beyond the fence, however, is not a one-way street. In many areas, especially where there is urban encroachment and development around military installations, there is often an equal pressure from neighboring communities to become more aware of land management issues "within the fence." Local governments, groups, and interested citizens are taking a more active role in natural resources issues. There is also an increasing interest in military lands from researchers, scientists, academicians, and the general public. This is frequently because of the extent and quality of the natural resources that may occur within installation boundaries, in contrast to surrounding areas that may be highly developed or under intensive agriculture.

Many of these fence-crossing and regional issues fall squarely on the shoulders of the NRM: wildfire control, prescribed burning, rangeland and agricultural outleasing, access for fishing and hunting, access for passive recreation, control of invasive

species, protection of sensitive habitat, bird aircraft strike hazard management, and so on. These are long-term issues that certainly persist beyond the tenure of most installation commanders and many installation staff, both military and civilian.

The availability of funds and of adequately trained staff will affect the ability of the NRM to effectively implement the INRMP. But changes to natural resources initiatives identified and prioritized in the INRMP should not occur as a result of command decisions to reallocate funds and support to other programs. Ideally, changes to prioritized INRMP initiatives should be reserved for instances of adaptive management where a particular course of action identified in the INRMP may be found to be not the best option as a result of monitoring and reevaluation of objectives (see Chapter 8). Reliance on a solid INRMP that clearly identifies roles and responsibilities, goals and objectives, prioritized projects, and that is updated regularly will allow the installation to operate successfully as an integral and contributing part of the region. Effective internal communications within the command structure and external communications with the local community and other interested groups are critical to successful INRMP implementation and support. Chapter 5 provides guidance on effective communications.

Key Installation Personnel and the Natural Resources Manager

Below are key installation personnel, their roles, and their interactive roles with you, the NRM. Your communication with these groups and individuals is key to implementing the INRMP. Because these groups have a role to play in its implementation, they must be fully on board with the INRMP. This means that they must be briefed on it and have their roles identified to them. They should be directed

to include their support effort on the INRMP in their fiscal budgeting process. If these individuals or groups are not clearly identified in your current INRMP, then you should consider updating the INRMP to identify their roles and responsibilities and the specific projects or actions that will require their support.

This list of key personnel provides the most generic titles. However, the individual military services may have unique titles for their individual command structures.

Installation Commander

The installation commander holds the highest-ranking position at an installation and ultimately is responsible for all aspects of the installation and its many functions. This includes ensuring that the INRMP is developed, implemented, and fully supported. At some locations, a garrison commander (Army) or other designated official (see below) may be given responsibility for the function equivalent of the installation commander, and he or she will then have responsibility for the day-to-day operation of the installation.

The installation commander can facilitate the implementation of the INRMP by encouraging support down the chain of command. The commander has to ensure that a process is established for early coordination between the NRM and key installation staff. The commander must also ensure that natural resources management is integrated with other installation management activities, as well as with military training and testing activities. He or she also must establish funding priorities and assign funds for the INRMP requirements. Professionally trained staff must be available and assigned to natural resources management. Therefore, you should make

the installation commander knowledgeable about the INRMP and the environmental program through periodic briefings.

Commanders may be reassigned every 2 or 3 years or more frequently. It is important that you brief each installation commander early in his or her tour to ensure a long-term commitment to the INRMP process and its funding needs. You need to judge how frequently you should brief your commander. Certainly, you should provide a briefing soon after the arrival of a new commander and if key issues, especially success stories, arise. Depending on the structure of your installation, more frequent briefings may be appropriate for the installation chief of staff or garrison commander or equivalent. (See Chapter 5 for guidance on briefings. Exhibit A–1 in the Appendix contains a briefing checklist.)

When briefing the commander or designees, you should emphasize that implementation of the INRMP is an ongoing, long-term process. Implementation of the INRMP may have been initiated before the arrival of the current commander and will continue to be implemented well beyond the tenure of the current installation commander. Although many individual natural resources initiatives may not seem critical, funding and support for INRMP implementation is required by law and individual service instructions, and its successful implementation has a direct effect on the current and future mission, as well as on stewardship of military lands.

Chief of Staff

The installation chief of staff is responsible to the installation commander for managing the daily business of the installation. The chief of staff has immediate access to the commander and must be advised regularly of the status of your program and the

implementation of the INRMP. At a minimum, the chief of staff should be invited to sit in on any briefings to the installation commander.

Garrison Commander (or Service-Equivalent Designee)

If designated, the Army garrison commander (or other Service-equivalent designee) directs the overall day-to-day management of installation facilities including public works, the motor pool, and logistics. Just as for installation commanders, you need to judge how frequently you should brief your garrison commander or the Service equivalent. You should provide a briefing soon after the arrival of a new garrison commander or Service-equivalent designee and again, if key issues, especially success stories, arise. Maintaining regular communication with the garrison commander or the Service-equivalent designee is vital because he or she issues the orders necessary to coordinate the implementation of projects, including the INRMP. Also, many projects under the direction of the garrison commander or the Service-equivalent, may directly affect natural resources (for example, grounds maintenance, new building construction).

Public Works Center

This office is usually the primary entity on the installation that is responsible for implementing the INRMP. An environmental management office within the Public Works Center (PWC) or Service equivalent usually houses the natural resources staff and is responsible for managing natural resources. Depending upon the size and needs of the installation, natural resources management may be a separate division within environmental management. At some installations, the environmental management office may be a separate entity from the PWC and may report directly to the installation commander. Installation game wardens or natural resources law enforcement professionals may also be located within the environmental office of

PWC (see the discussion of natural resources law enforcement below under "Provost Marshal").

Communications between the NRMs, environmental managers, planners, and engineers within public works is important because there often are opportunities to work together on related projects. The support and involvement of many individuals within the public works group is critical to INRMP implementation. Individuals with key INRMP responsibilities should be kept appraised of their roles in INRMP implementation so that they may plan and budget their time and resources. For example, the NRM should work with master planning to identify anticipated mapping or geographic information system (GIS) needs — both already available GIS and mapping information, and any new maps or needs identified in the INRMP. It is equally important that the public works staff inform the NRM of any anticipated support that they may require from the NRM, such as assistance with natural resource issues for National Environmental Policy Act (NEPA) evaluations or wetland permitting for construction activities.

The INRMP should be fully integrated with the installation master plan. The installation master planner, who is usually located within public works, should be very familiar with the INRMP because he or she designates land use. Master plans typically extend to a 20- to 30-year period whereas the INRMP is a recently developed plan that typically covers a 5-year period. The INRMP may identify designated sensitive, preservation, conservation, or other areas with land use restrictions. It is imperative that the NRM coordinate such restricted areas with the master planners so that, at a minimum, they can be incorporated into the master planners' maps or GIS.

The environmental management office or public works group may have responsibility for ensuring that the appropriate level of NEPA documentation is prepared for new projects or actions. (See Chapter 5.) The public works staff responsible for NEPA compliance must coordinate with the NRM early in the NEPA process so that the appropriate natural resources issues are considered. Proposed actions such as construction of new ranges, roads, or buildings usually involve considerable effort in assessing impacts to natural resources. For particularly lengthy or potentially contentious projects, the NRM must be given sufficient time to be able to provide the level of support needed to address the natural resources issues. (See the section on communications for NEPA issues in Chapter 5.)

The Director of Plans, Training, and Mobilization (DPTM)

The director of plans, training, and mobilization (DPTM) or the Service operations and training equivalent is the link between the INRMP and soldiers training in the field. Regular communication between the NRM and the DPTM is critical. As the NRM, you should regularly brief the DPTM, either formally or informally, on the status of INRMP implementation. The purpose of the briefings could be to alert the DPTM of any new or pending compliance requirements (for example, Endangered Species Act issues), to report on successes or failures of land restoration efforts, or to learn of changes to the training schedules or missions that may impact INRMP implementation.

For those installations with major field training or testing missions, the DPTM has the highest potential to affect or to be affected by environmental management. It is the DPTM that grants the various environmental managers, including the NRM, access to the training areas. A line of communication should always be open between environmental management staff and the DPTM. Ideally, a primary point-of-contact

(POC) should be designated in the office of the DPTM to regularly inform the director on the status of current and future natural resources management projects or issues. The POC working with the NRM will ensure that planned projects or compliance issues related to natural resources do not conflict with current and planned training exercises. The NRM should also interact with the DPTM on planning future training and testing activities. The NRM can suggest appropriate sites for training exercises based on training requirements, the land condition, the anticipated intensity of use, and potential need for cleanup or restoration for a given site. The DPTM also is responsible for developing training regulations that include environmental protection requirements. The DPTM is responsible for enforcing compliance with the regulations for the soldiers training in the field.

Flight Safety

The installation flight safety program typically has responsibility for reducing aircraft interactions with wildlife that may adversely affect flight operations and training activities. Collisions of aircraft with wildlife are a major safety concern and cause millions of dollars in damage each year. Air Force facilities with flight operations are required to establish a Bird Aircraft Strike Hazard (BASH) program and develop a BASH plan.[2] A BASH plan defines the nature and extent of hazards and outlines implementation activities. Implementation often involves environmental control, bird dispersal techniques, habitat manipulation, and operation procedures. Other installations have coordinated with DoD's Partners in Flight Program (PIF) to prepare Bird Conservation Plans. Whether it's a BASH plan or a Bird Conservation Plan, all installations with flight operations should consider developing a flight safety plan. Exhibit 2–1 lists several resources that will provide guidance and assistance on flight safety issues.

Exhibit 2–1. Flight Safety Resources

The USAF Bird Aircraft Strike Hazard (BASH) Team assists Air Force organizations worldwide to reduce damage caused by bird strikes and collisions with other wildlife. The BASH Team provides technical assistance, guidance, and data. They have developed a Bird Avoidance Model (BAM) and Avian Hazard Advisory System (AHAS) to predict hazards and guide avoidance measures.

Send requests for BASH Team assistance on airfield wildlife control issues through your major command to HQ Air Force Safety Agency, Flight Safety Wildlife (AFSA/SEFW), 9700 Avenue G, Suite 2794, Building 24499, Kirtland AFB, NM 87117-5671.

For guidance on establishing and maintaining a bird aircraft strike hazard program, consult AFI 91-202, *U.S. Air Force Mishap Prevention Program,*[3] and AFPAM 91-212, *BASH Management Techniques*.[4]

Flight safety issues concern not only safety, but also involve wildlife management. Coordination between NRMs and flight safety is essential so that flight safety plans and INRMPs are complimentary, not contradictory. NRMs should provide input in developing the BASH plan or other service equivalent. NRMs may provide effective alternatives for management and long-term maintenance. Depending on the size of the flight operations, it may be appropriate to designate a Flight Safety POC who would be responsible for coordination with the NRM. The Flight Safety POC would seek input from NRMs when developing flight safety plans; brief NRMs on management

concerns and management activities; participate in the update of the INRMP; and update the flight safety plan accordingly.

Public Affairs

The Public Affairs Office (PAO) can be a significant link between the INRMP and the on- and off-post communities. The PAO can help foster support for the INRMP by informing the communities about the importance of environmental management initiatives. It also can facilitate communication between offices at the headquarters and across the installation. The PAO may be relied upon heavily to initiate communications in instances where no previous histories of communications exist. However, many public affairs offices operate on a very limited staff and so the NRM must carefully select areas where the PAO can provide the most support for INRMP implementation.

Provost Marshal (or Service-Equivalent)

The provost marshal or Service-equivalent security designee enforces Federal and State laws and military regulations on the installation. This security group may play an important role in enforcing or helping to enforce any trespass, hunting, fishing, endangered species, or other environmental or cultural resources restrictions. Some installations may have military personnel assigned to the natural resources program to provide law enforcement support.

Because of the training needed for natural resources law enforcement (see Exhibit 7–5 and the section on Training for Natural Resources Law Enforcement in Chapter 7), it may be more efficient and cost effective to identify a civilian game warden or law enforcement position within the natural resources program rather than a military person assigned to natural resources by the provost marshal office (or Service equivalent). A permanent civilian position within the natural resources program

would reduce the training requirements and costs associated with using military personnel who are at the installation only for a limited time. Also, this game warden or law enforcement professional within a natural resources program is more likely to have the necessary technical expertise and background training than an enforcement officer within the provost marshal or Service-equivalent office. This natural resources game warden or law enforcement professional can work with USFWS and State law enforcement personnel on joint initiatives when it is to the benefit of the installation. Military personnel reporting to the provost marshal would not be available to participate in such joint ventures.

In some very specific cases, an installation may use a Memorandum of Agreement (MOA) with the regional office of the USFWS for cooperative law enforcement. Such an MOA provides law enforcement authority to specific civilian professionals at an installation. Without this authority, law enforcement at an installation remains the sole responsibility of the provost marshal or Service equivalent. These MOAs have been established by installations where there are specific challenges to law enforcement (for example, extensive waterfront, coastal, or other difficult bordering terrain; multistate jurisdictions; increased trespass in increasingly developed suburban areas). Depending upon the specifics of the MOA, the law enforcement professional may have the authority, when requested, to assist other local installations with natural resources law enforcement. The law enforcement professional identified in the MOA works with a designated agent within the USFWS, and there is typically close communication between the USFWS and the installation natural resources program concerning law enforcement.

Communications With Key Installation Staff

The installation commander, through the chain of command, is responsible for providing sufficient staff, both military and civilian, to establish and maintain the integrated natural resources program. The commander must ensure that all employees are properly trained and knowledgeable about the installation's natural resources and any impacting military activities. You and your experienced staff, in turn, must ensure that communications are established and maintained with the commander and the installation support staff, as provided above. Chapter 5 presents the topic of communications, both internal and external. However, Exhibit 2–2 lists a few tips for maintaining communications with key staff.

Exhibit 2–2. Tips on Maintaining Communications

- Call, e-mail, or write a letter to your installation points-of-contact (POCs)
- Volunteer to assist other offices with their projects
- Work with POCs who are transferring or leaving their positions to brief their replacements. If there will be no replacement, coordinate with the POC to identify and brief another person who can serve as a new POC
- Establish an environmental review committee using key members of staff. Set regular meeting dates to review projects that could impact natural resources or natural resources management activities (see Chapter 5). The committee meetings not only will allow you to discuss important matters, but will allow continuing communications among the members.

The roles of the command personnel combined with your diligent efforts to establish and maintain communications with them are vital for the successful implementation of INRMP projects. However, the command's interactive role with you is equally important with regards to budgeting and obtaining funds for your INRMP projects, as shown in the next chapters. With tight budgets and fewer staff, each member within the environmental organization must make a deliberate effort to keep others within the overall command informed of their future needs. Those needs can then be incorporated into future planning mechanisms.

Reference Notes

1. Sherri Goodman, Deputy Undersecretary of Defense, 8 August 1994. Memorandum on Implementation of Ecosystem Management in the DoD. Available at http://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Statements/note3.html.
2. AFI 91-202 (Chapter 7.11), *U.S. Air Force Mishap Prevention Program,* 1 August 1998. Available at http://afsafety.af.mil/AFSC/Bash/guide.html.
3. See Note 2 above.
4. AFPAM 91-212, *BASH Management Techniques,* 1 August 1997. Available at http://afsafety.af.mil/AFSC/Bash/guide.html.

Chapter 3
The Planning, Programming, and Budgeting System: How To Get Funds

To implement INRMP requirements and activities, adequate funds must be available. The amount of money needed to obtain equipment, provide training, perform services, or conduct specific projects under the INRMP must be carefully estimated and planned into the entire installation budget. Regardless of how the budget process is implemented at your installation and regardless of who may have ultimate responsibility for budget development, it is imperative that you, the natural resources manager, are involved in the Planning, Programming, and Budgeting System (PPBS) at your installation and that you are knowledgeable of this process at all levels.

INRMPs and the Budget Process

Your INRMP should be set up to cover a minimum 5-year period and should include a prioritization of projects and initiatives, as well as the schedules and costs for implementation. The INRMP should be reviewed at least annually to reassess and reprioritize projects (Exhibit 3–1). Tracking and monitoring progress toward INRMP goals and objectives and applying adaptive management in response to feedback from monitoring efforts will require that projects be reprioritized. Monitoring data

Exhibit 3–1. Maintaining and Updating the INRMP

The natural resources manager (NRM) and others should assess project prioritization annually and should regularly reallocate priorities as needed. Many issues can cause an initiative not to be implemented. Lack of funds or staff can be a factor, but changes in training missions and in use of training lands and ranges can prevent the NRM from implementing a given action. Even climate or weather conditions can adversely affect project and initiative implementation. For example, it may have been too dry or too wet in a given season to conduct prescribed burns as scheduled and budgeted in the INRMP. Review of monitoring data may indicate that a particular objective has not yet been met and so follow-on steps should not be initiated as had been scheduled in the INRMP.

Evaluating your management actions and using monitoring to readjust project priorities and initiatives is simply *adaptive management.* (See Chapter 8 for a fuller discussion of monitoring and adaptive management.) This is exactly what ecosystem management is about and why there should be inherent flexibility in an INRMP. Most goals and objectives may be relatively set, but how one achieves them and in what time period are subject to many internal and external forces. Keeping an updated list of priorities in the INRMP helps new commanders, staff, and others to see quickly the current status of the natural resources program. An updated priority list also feeds directly into the planning and budget development process and helps the NRM identify successes as well as impediments to full success. If you do not have a Web-based or electronic INRMP that can be used to track progress or changes, then consider using the INRMP master update list (Exhibit A–2) and the INRMP update report (Exhibit A–3), provided in the Appendix.

may indicate that some initiatives be allocated to subsequent funding years, some be put on accelerated schedules, and some be shelved indefinitely. External issues such as increases in the numbers and types of training units, reprogramming of funds, or new compliance requirements may also mean that you have to reprioritize projects and adjust your budget information. See Exhibit 3–2 for more information about the PPBS process and INRMP implementation. Refer to Chapter 8 for a discussion on monitoring and adaptive management.

Integrating Budget Development and INRMP Implementation

Budget development and INRMP implementation are both continuing processes. Rather than having two separate ongoing tasks—providing project input for budget development and tracking INRMP implementation—you should try to combine these two activities so that one supports the other. Although INRMP implementation involves much more project detail, you should try to incorporate the required reporting for the budget development into your tracking of INRMP implementation, and vice versa.

The time scale of an INRMP fits well into the DoD Planning, Programming, and Budgeting System (PPBS) forecasting process. One full cycle of the DoD budget process includes the next budgeted fiscal year and projections for the following 5 fiscal years. One full cycle of the INRMP, between upper command reapproval, covers a 5-year period. This means that by relying on an INRMP that is updated regularly, you should be able to project relatively accurate funding requirements for natural resources management for 5-year periods, at a minimum.

Exhibit 3–2. The PPBS and INRMP Implementation

An INRMP is not a commitment to complete specific projects. It is a commitment to achieve specific goals and objectives and to proceed towards these goals and objectives as effectively and efficiently as possible under the prevailing circumstances.

Some managers may not want to include project priorities or budget information in the INRMP because they cannot ensure that even the highest priority projects and initiatives will be funded. There is a concern that resource agencies, conservation groups, or members of the public may point out how little of an INRMP may have been achieved. However, the NRM's ability to secure funding is going to be far more strongly supported when a given initiative is identified and referenced in the INRMP and, as the INRMP should show, is an integral component of overall installation management and compliance.

If a particular initiative is a compliance requirement or is identified elsewhere as a mitigation requirement, the NRM genuinely may have a concern when that initiative is not successfully implemented. Mitigation actions identified in National Environmental Policy Act (NEPA) documentation and stated in a Finding of No Significant Impact are in this category. Implementation in this circumstance is a compliance issue. If mitigation or similarly legally binding initiatives are included in the INRMP, then they should be clearly identified as such and should be given the appropriate prioritization and funding support.

Your ability to combine budgeting and tracking INRMP implementation, or at least tier the one requirement off the other, will be limited by the level of detail that is included in your budget forecasting and reporting. The INRMPs for installations with major natural resources management responsibilities will likely include many detailed projects and initiatives. A single goal or objective may involve several projects, each comprised of several subprojects implemented over a period of time. This level of detail will not be identified in or be required by your specific Service's reporting system. But each INRMP initiative, project, or subproject that has a funding requirement must be included as part of a larger project or initiative that is identified in your budget tracking and reporting system (for example, the Army's Environmental Program Requirements Module or the Marine Corps' CompTRAK).

Although not all priority projects identified in an INRMP will be individually tracked and reported, your up-to-date INRMP can be used to support funding requests. You should consider including specific references, down to the INRMP page, section and line number, in the narrative or equivalent sections of your budget reporting modules. As funds become more and more limited and as requirements are put under increasing scrutiny, it is essential that your funding requests are accurate, defensible, and fully supported by your INRMP. Natural resources staff at Major Command and headquarters levels do refer to detailed referencing of the INRMP in their efforts to petition for funds on your behalf.

The Department of Defense Budget Development Process

The following information is presented as a guide to the overall DoD budget development process. Exhibit 3–3 presents a graphic look at the division of major environmental responsibilities in the DoD from the highest levels of command to the installation level. The organizations in each tier have certain responsibilities and perform corresponding actions. Basically, a budget is an action plan for accomplishing an installation's objectives. It is an instrument resulting from planning, decisionmaking, and management control, and it is ultimately the installation's statement of priorities for activities planned for the upcoming fiscal year and future years.

The budget process is a continuing activity involving review and reallocation for the next fiscal year's budget and for budget development for future years. Depending upon the military service and how each identifies the various budget years, NRMs and other environmental managers may be projecting budget requirements for a minimum of 6 years, in addition to reviewing the budget that has been assigned for the upcoming fiscal year. Because the budget received is always less than that requested, the managers must review the projects planned for the upcoming fiscal year and determine which of these may be delayed to the following year. The ability to delay certain projects to subsequent fiscal years depends to a great extent on whether delaying the project will result in a potential compliance issue.

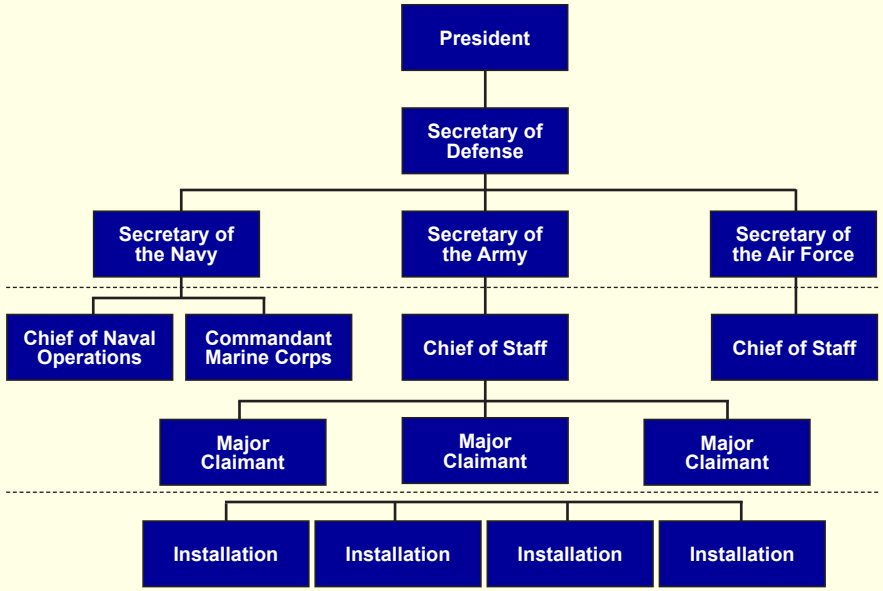
Exhibit 3–3. Department of Defense Environmental Responsibilities

DoD's environmental organization is divided into three tiers that correspond to its major environmental responsibilities.

The **first tier** is the responsibility of the Office of the Secretary of Defense (OSD), the Military Department Secretariats, and the Defense Agencies. This tier addresses policy development, budget advocacy and guidance, and oversight of program execution.

The **second tier** is the responsibility of the DoD Component headquarters and operational Major Claimants. It includes policy development, program planning, determination of budgetary requirements, and oversight of program execution.

The **third tier** is the responsibility of the individual installation commanders and includes program management and execution.



Source: Defense Environmental Quality Program. *2003 Annual Report to Congress.*

The Planning, Programming, and Budgeting System for the Department of Defense

The DoD budget process is called the Planning, Programming, and Budgeting System (PPBS). It is an ongoing process that is continuously reviewed and refined. The process can be summarized as follows:[1]

- The PPBS process consists of long-range planning to anticipate and secure requirements to meet security threats and accomplish program goals.
- Resources to meet these requirements are estimated and programmed by program managers in the Future Year Defense Plan (FYDP). The FYDP is a list of resource requirements for the next 6 years. Specifically, the FYDP comprises the subsequent fiscal year budget and funding requirements projected out 5 years.
- The FYDP resources next are analyzed via the Programming Process. In the Programming Process, program managers reassess their requirements, reprioritize planned activity, reevaluate existing funding guidance, and estimate their funding needs for the next budget year, plus the subsequent 5 fiscal years (referred to as POMs 1–5).
- The Program Objectives Memorandum (POM) process takes place within Defense Components beginning in the fall of each year. Then each DoD Component submits the POM in the spring to OSD. The OSD reviews the budget submissions and develops the President's budget that will be submitted to Congress. At the installation level, data submissions to support this are made to the Major Commands twice annually, in fall and spring.
- Based on POM decisions of each Component, budget controls are issued to the field commands for budget preparation.

Exhibit 3–4 summarizes the budget preparation process, using FY 08 as an example. This was derived in part from the DoD Environmental Security Budget Guide.[2] It has been adapted to include budget development actions conducted by the NRM at the installation level.

Exhibit 3–4. Major Actions for Budget Development (page 1)

As an example, actions on development of the FY 08 DoD budget (in **bold/color**) are tracked through the schedule.

At the Installation	*Calendar Yr. Schedule*	*At Command (Major Claimant) and Headquarters*
	Feb. 2005	President sends FY 06 Federal budget to Congress.
NRMs estimate funding needs for the FYDP (FY 07–12), which comprises the next budget year (FY 07) and the following 5-year POM projections (FYs 08–12). NRMs follow HQ program requirements and budget controls sent to installations by Major Commands. Installations include review of current fiscal year (FY 05) and prior year in the specific Service budget reporting system (for example, EPRM, CompTRAK).	Feb.–March 2005	
	March–May 2005	**Major Commands and then Component HQs review POM issues (for example, need for funding increases) and make POM (FY 08–12) decisions (that is, reprioritize planned projects to be within fiscal controls before next budget is prepared).** FY 07 budget controls are issued to the field.
	April 2005	Midyear review of FY 05 budget.

Exhibit 3–4. Major Actions for Budget Development (page 2)

As an example, actions on development of the FY 08 DoD budget (in **bold/color**) are tracked through the schedule.

At the Installation	*Calendar Yr. Schedule*	*At Command (Major Claimant) and Headquarters*
	March–Sept. 2005	Congress reviews the FY 06 budget and holds hearings.
Proposed installation budgets for FYDP (includes FY 07 budget and POMs 08–12) are reviewed and approved by installation commanders prior to sending to Major Commands.	Summer 2005	FY 07 budget submissions are received (June–July) from installations based on budget controls.
	July–Aug. 2005	**OSD review of Component POM (FY 08–12) decisions.**
	Aug.–Sept. 2005	FY 07 DoD budget prepared by Components and sent to OSD in Sept. 2005.
	Sept. 2005	Congress passes FY 06 appropriation bills.
FISCAL YEAR 06 BEGINS		
NRMs are— 1) Starting FY 06 execution (current budget) 2) Completing FY 07 budget year (review the President's next budget to Congress) **3) Completing POM development for FY 08–12.**	Oct. 2005	
Requirements for FYs 08–12 are sent from installations to Major Commands.	Nov.–Dec. 2005	**Requirements for FYs 08–12 are sent from Major Commands to Component headquarters for subsequent analysis and POM issue development (ongoing through Feb. 2006).**
	Dec. 2005	FY 07 DoD budget sent from OSD to OMB.

Exhibit 3–4. Major Actions for Budget Development (page 3) As an example, actions on development of the FY 08 DoD budget (in **bold/color**) are tracked through the schedule.		
At the Installation	***Calendar Yr. Schedule***	***At Command (Major Claimant) and Headquarters***
	Feb. 2006	President sends FY 07 Federal budget to Congress.
NRMs estimate funding needs for the FYDP (FY 08–13), which comprises the next budget year (FY 08) and the following 5-year POM projections (FYs 09–13). NRMs follow HQ program requirements and budget controls sent to installations by Major Commands.	Feb.–March 2006	
	March–May 2006	Major Commands and then Component HQs review POM issues (for example, need for funding increases) and make POM (FY 09–13) decisions (that is, reprioritize planned projects to be within fiscal controls before next budget is prepared). **FY 08 budget controls are issued to the field.**
	April 2006	Midyear review of FY 06 budget.
	March–Sept. 2006	Congress reviews the FY 07 budget and holds hearings.
Proposed installation budgets for FYDP (includes FY 08 budget and POMs 09–13) are reviewed and approved by installation commanders prior to sending to Major Commands.	Summer 2006	**FY 08 budget submissions are received from field based on budget controls.**
	July–Aug. 2006	OSD review of Component POM (FY 09–13) decisions.
	Aug.–Sept. 2006	**FY 08 budget prepared by Components.**

Exhibit 3–4. Major Actions for Budget Development (page 4)

As an example, actions on development of the FY 08 DoD budget (in **bold/color**) are tracked through the schedule.

At the Installation	*Calendar Yr. Schedule*	*At Command (Major Claimant) and Headquarters*
	Sept. 2006	Congress passes FY 07 appropriation bills.
FISCAL YEAR 07 BEGINS		
NRMs are— 1) Starting FY 07 execution (current budget) **2) Completing FY 08 budget year (the President's next budget to Congress)** 3) Completing POM development for FY 09–13.	Oct. 2006	
Requirements for FYs 09–13 are sent from installations to Major Commands.	Nov.–Dec. 2006	Requirements for FYs 09–13 are sent from Major Commands to Component headquarters for subsequent analysis and POM issue development (ongoing through Feb. 2007).
	Dec. 2006	**FY 08 DoD budget sent from OSD to OMB.**
	Feb. 2007	**President sends FY 08 Federal budget to Congress.**
NRMs estimate funding needs for the FYDP (FY 09–13), which comprises the next budget year (FY 09) and the following 5-year projections for the POM (FYs 10–14). NRMs follow HQ program requirements and budget controls sent to installations by Major Commands.	Feb.–March 2007	

Exhibit 3–4. Major Actions for Budget Development (page 5) As an example, actions on development of the FY 08 DoD budget (in **bold/color**) are tracked through the schedule.		
At the Installation	***Calendar Yr. Schedule***	***At Command (Major Claimant) and Headquarters***
	March–May 2007	Major Commands and then Component HQs review POM issues (for example, need for funding increases) and make POM (FY 10–14) decisions (that is, reprioritize planned projects to be within fiscal controls before next budget is prepared). FY 09 budget controls are issued to the field.
	April 2007	Midyear review of FY 07 budget.
	March–Sept. 2007	**Congress reviews the FY 08 budget and holds hearings.**
Proposed installation budgets for the FYDP (includes FY 09 budget and POMs 10–14) are reviewed and approved by installation commanders prior to sending to Major Commands.	Summer 2007	FY 09 budget submissions are received from installations based on budget controls.
	July–Aug. 2007	OSD review of Component POM (FY 10–14) decisions.
	Aug.–Sept. 2007	FY 09 DoD budget prepared by Components and sent to OSD in September 2007.
	Sept. 2007	Congress passes FY 08 appropriation bills.

Exhibit 3–4. Major Actions for Budget Development (page 6)

As an example, actions on development of the FY 08 DoD budget (in **bold/color**) are tracked through the schedule.

At the Installation	*Calendar Yr. Schedule*	*At Command (Major Claimant) and Headquarters*
FISCAL YEAR 08 BEGINS		
NRMs are— **1) Starting FY 08 execution (current budget)** 2) Completing FY 09 budget year review (the President's next budget to Congress) 3) Completing POM development for FY 10–14.	Oct. 2007	
Requirements for FYs 10–14 are sent from installations to Major Commands.	Nov.–Dec. 2007	Requirements for FYs 10–14 are sent from Major Commands to Component headquarters for subsequent analysis and POM issue development (ongoing through Feb. 2008).
	Dec. 2007	FY 09 DoD budget sent from OSD to OMB.
	Feb. 2008	President sends FY 09 Federal budget to Congress.
	March–Sept. 2008	Congress reviews the FY 09 budget and holds hearings.
NRMs estimate funding needs for the FYDP (FY 10–14), which comprises the next budget year (FY 09) and the following 5-year projections for the POM (FYs 10–14). NRMs follow HQ program requirements and budget controls sent to installations by Major Commands.	Feb.–March 2008	

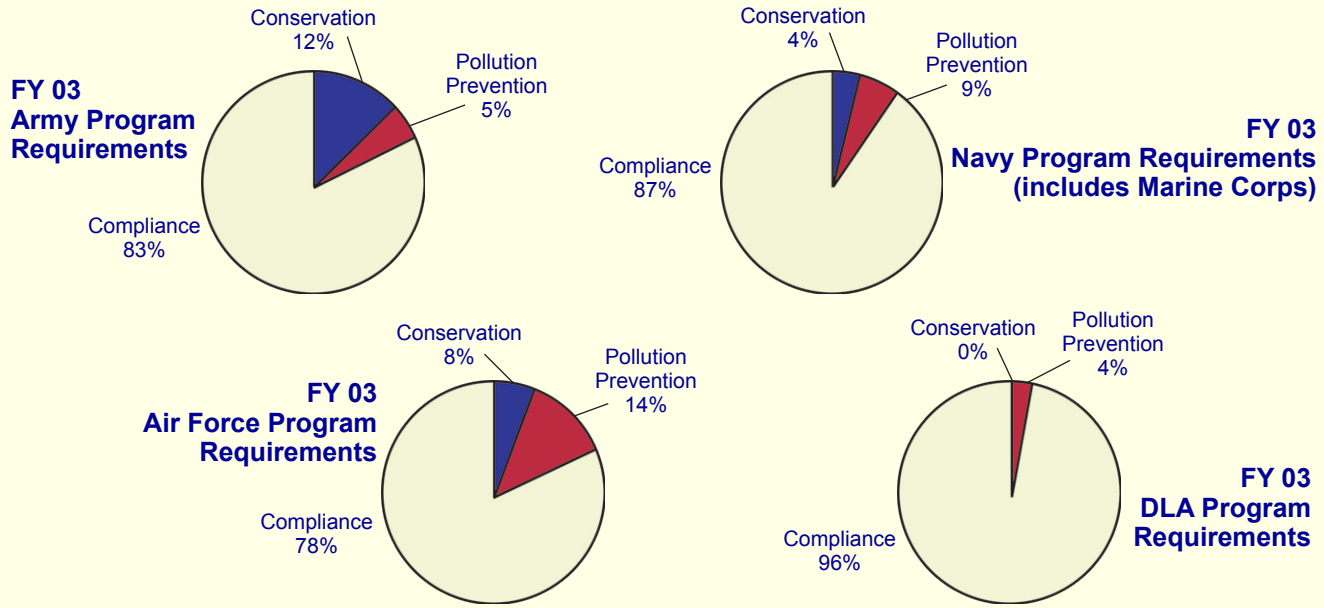
Exhibit 3–4. Major Actions for Budget Development (page 7) As an example, actions on development of the FY 08 DoD budget (in **bold/color**) are tracked through the schedule.		
At the Installation	***Calendar Yr. Schedule***	***At Command (Major Claimant) and Headquarters***
	March–May 2008	Major Commands and then Components make POM decisions (for example, reprioritize planned projects to be within fiscal controls before next budget is prepared). FY 09 budget controls are issued to the field.
	April 2008	**Midyear review of FY 08 budget.**

Collecting and Reviewing Environmental Requirements and Costs

In FY 03, DoD spent approximately $179 million dollars to support conservation efforts. Of those funds, approximately $66 million supported recurring costs such as monitoring and mitigation efforts involving habitat and fire protection, and general maintenance. Approximately $113 million was spent on nonrecurring conservation projects involving natural and cultural resources. Of the total budget for nonrecurring conservation projects, $73 million went to fund natural resource initiatives. Approximately $15 million of the $73 million funded threatened and endangered species initiatives, and $9 million addressed wetlands issues. The funds remaining (approximately $48 million) were used for protection of other natural resources. The graphs in Exhibit 3–5 contain budget summaries for each Component's conservation, pollution prevention, and compliance programs.[3]

As already stated, it is important that you ensure that adequate funds are planned, programmed, and budgeted to meet the needs for implementing the INRMP. You must

Exhibit 3–5. Component Environmental Quality Budget Summaries by Program



Source: Defense Environmental Quality Program, *2003 Annual Report to Congress.*

be actively involved in the development of the environmental requirements to be included in POM submittals. You must be knowledgeable of all INRMP requirements and be able to estimate the associated costs and schedules. This section discusses some tools that will assist you.

The Environmental Program Requirements Module

The Environmental Program Requirements Module[4] (EPRM), developed by the Defense Environmental Security Corporate Information Management (DESCIM), can be a helpful tool for collecting and reviewing environmental requirements and costs. The EPRM, formerly known as the A-106 module, is the DoD standard and uniform tracking system designed to replace the current systems used by the different Component Services, such as the Air Force WIMS A-106 module[5] or the Marine Corps CompTRAK. The term A–106 refers to Office of Management and Budget (OMB) Circular A–106, which together with Executive Order 12088, requires all Federal agencies to control and monitor environmental pollution at their facilities. The USEPA's FEDPLAN guidance requires annual submission of an environmental plan that identifies and describes regulatory areas for upcoming installation projects. Although initially designed to be an aid in maintaining compliance, DoD enhanced the EPRM system (formerly A–106) to assist in overall management of their environmental programs and in monitoring progress in environmental stewardship.

The EPRM is a personal computer program into which environmental requirements are entered and maintained as current information and data become available. The program is set up so that installation environmental coordinators may plan, program, budget, and forecast costs to manage environmental requirements. The EPRM can track installation project data such as local and Major Command priorities, legal and

regulatory requirements, compliance status, required dollars to fund the project, and funds that have been budgeted.

Environmental requirements eventually are funded depending on the class of each requirement. The DoD classes of environmental requirements range from Class 0 to Class III. The Department of Defense Instruction (DoDI) 4715.3, *Environmental Conservation Program* (May 1996), provides the following summary descriptions of the classes as they pertain to conservation and natural resources projects. (You should refer to the instruction and its enclosure for more detailed descriptions: http://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Policy/note1.html.)

Class 0: Recurring Natural and Cultural Resources Conservation Requirements. This class includes activities needed to cover the recurring administrative, personnel, and other costs associated with managing DoD's conservation program that are necessary to meet applicable compliance requirements (Federal and State laws, regulations, presidential Executive Orders, and DoD policies) or that are in direct support of the military mission. Also included are environmental management activities associated with the operation of facilities, installations, and deployed weapons systems. Recurring costs consist of manpower, training, and supplies; hazardous waste disposal; recycling activities; permits and fees; testing, monitoring, sampling, and analysis; reporting and recordkeeping; maintenance of environmental conservation equipment; and compliance self-assessments.

Class I: Current Compliance. This class includes projects and activities that are needed because an installation is currently out of compliance. This can occur for the following reasons:

- The installation has received an enforcement action from a duly authorized Federal or State agency or local authority
- The installation has a signed compliance agreement or has received a consent order
- The installation has not met requirements based on applicable Federal or State laws, regulations, standards, presidential Executive Orders, or DoD policies, or certain DoD programs and initiatives
- The projects and activities are immediate and essential to maintain operational integrity or sustain readiness of the military mission.

Class I also includes projects and activities needed that are not currently out of compliance (deadlines or requirements have been established by applicable laws, regulations, standards, DoD policies, or presidential Executive Orders, but deadlines have not passed or requirements are not in force), but shall be if projects or activities are not implemented in the current program year.

Class II: Maintenance Requirements. This class includes projects and activities for which deadlines or requirements have been established by applicable laws, regulations, standards, presidential Executive Orders, or DoD policies. These projects or activities are not currently out of compliance because deadlines have not passed or requirements are not in force, but they will be out of compliance if projects or activities are not implemented in time to meet an established deadline beyond the current program year.

Class III: Enhancement Actions, Beyond Compliance. This class includes those projects and activities that enhance conservation resources or the integrity of the installation mission or are needed to address overall environmental goals and objectives, but are not specifically required under regulation or Executive Order and are not of an immediate nature.

Service-Specific Guidance

While DoDI 4715.3 provides the basic direction to the Services for compliance classification of conservation projects during the PPBS, the individual Services refine the classification guidance to reflect current needs and constraints. To assign the correct compliance classification code and provide the appropriate reference information, the NRM must refer to the current, relevant Service guidance. Each Service has a designated group responsible for implementing reporting guidance. For example, the Army Office of the Director of Environmental Programs is responsible for developing current guidance for environmental program requirements. The Army Environmental Center (AEC) assists in implementing the guidance including the supporting software. The AEC also provides technical guidance, cost estimating materials, supporting documents, and specific functional area guidance.

The Service-specific guidance for EPRM classification fully supports the definitions given in DoDI 4715.3. However, classification refinements made at a Service level may result in a change to a specific project's classification. As an example, using the Army's 2000 *Policy and Guidance for Identifying U.S. Army Environmental Program Requirements*,[6] the definition of a Class I project was as follows (emphasis in original).

> Class 1 projects include projects and activities needed at facilities that are currently out of compliance with deadlines or conditions established by legally-mandated requirements (whether or not there has been an inspection by a regulatory authority); that have received an enforcement action from a Federal, State or local authority; or that have signed a compliance agreement or received a consent order. **In addition,** Class 1 also includes those projects and activities necessary for preparing, revising, and updating plans (to include pollution prevention plans), opportunity assessments and inventories needed to meet future specified deadlines and requirements at facilities that are currently not out of compliance, **BUT** will become out of compliance if these projects are not implemented in the year funds are requested. Class 1 projects are subdivided into four compliance status categories: [Note: the categories are not provided here.].

The above Army classification guidance provided more specific guidance than DoDI 4715.3, and it reflected the Army headquarters's direction and emphasis at that time for meeting program requirements. Each Service continually reviews their EPRM or equivalent guidance and modifies it to best meet current budget demands and constraints. Refer to your Service's most recent EPRM or equivalent guidance for classification and coding of your natural resources projects.

Funding Under the National Defense Appropriations Act

The OSD establishes its annual funding goals for requirements in the *Defense Planning Guidance* (DPG).[7] Typically, the DPG funds all Class 0 and Class I requirements along with a number of class II requirements. Final funds for the DoD budget are made available under the Defense Appropriations Act, which is enacted by

Congress every year.[8] The Appropriations Act provides specific amounts of funds for specific purposes. For example, there are separate appropriations for different military programs. Part of the EPRM or your Service-equivalent reporting system, involves identifying the correct appropriation funding code for a given project:

- Operations and maintenance (O&M)
- Military construction (MILCON)
- Environmental restoration
- Base realignment and closure (BRAC)
- Military personnel
- Research, development, testing, and evaluation (RDTE)
- Ship construction
- Aircraft procurement
- Other procurement
- Family housing
- Working capital fund.

The two main types of funding allocated to a given installation are O&M and MILCON. Funding for environmental projects, including natural resources, comes mainly from the O&M budget. There also are specific funds designated for environmental restoration under the Defense Environmental Restoration Program

(DERP) and for BRAC environmental issues. The DERP funds are used for the cleanup of contamination from past military activities. The BRAC funds are dedicated only to environmental activities on bases that are closing or transferring.

Funding for INRMP activities falls under the O&M budget. However, each Component may designate their environmental funds differently. For example, the Army's *Policy and Guidelines for Identifying U.S. Army Environmental Program Requirements*[9] specifies those projects and activities that are eligible for environmental funding. Routine grounds maintenance, such as grass mowing, tree pruning, and landscaping conducted for the purpose of aesthetics, are examples of activities typically not eligible for environmental funding. Similarly, the Air Force designates funds based on Air Force Instruction 32-7001, *Environmental Budgeting.*[10] Therefore, you must be aware of the limitations on the use of your funds and look for other avenues for funding.

Alternative Sources of Funds

Other sources of funds may be available to support implementation of your INRMP actions and initiatives. Some of these alternative sources include funds generated from the sale of natural resources products or the sale of rights to natural resources. Such sources include forestry programs, agricultural or grazing outleases, and fishing and hunting fees. ***Depending on the fund, monies from some of these activities may be available to your installation even though it does not participate in them.***

These and other funding sources are described in the FY 00 updated version of *Sources of Funds for Army Use (Other Than Typical Army Appropriations)*.[11] Although targeted to Army users, this comprehensive guide by the Business Practices Directorate

provides detailed information on many funding sources. For each fund or funding source, it describes the funds or program generating the funds, the pertinent laws and regulations, the funding mechanism (money flow), the available dollars, and the functional proponent for the program or funds. The full document is available through the homepage of the Office of the Assistant Secretary of the Army for Financial Management and Comptroller, http://www.asafm.army.mil. Funds also may be obtained from the DoD's Legacy Resource Management Program, the Pulling Together Initiative, and the National Public Lands Day funds (see description below).

Forest Products and Timber Sales

Production and sale of forest products are conducted at some installations under a reimbursable forestry program. Installation forest management goals are to enhance the military mission and support integrated management of the forest ecosystem. Forest management responsibilities at the installation fall under the natural resources program with the sale of timber products being under the responsibility of the installation, or the installation may use the local U.S. Army Corps of Engineers District to assist with sales. Revenues from an installation's forest products are allocated according to DoDFMR 7000.14-R, *Accounting for Production and Sale of Forest Products* (this DoDFMR canceled DoDI 7310.5, *Accounting for Production and Sale of Lumber and Timber Products)*.[12] Revenues may be used to reimburse the forestry program operating costs. To be eligible for reimbursement, forestry operations must be included in an approved management plan (that is, the INRMP). The Army has developed guidance for the Army forestry program on the authorized use of generated revenues.

Proceeds from the sale of forest products produced on an installation are used to cover authorized expenses. The first cut of funds goes to expenses related to the production and sale of harvest products. Other authorized expenses include forest management, forestry equipment, forest fire protection, forest access roads, reforestation, and forestry support.[13]

Forty percent of the installation's net proceeds are then distributed to the State in which the military installation is located and are used for local roads and schools. These payments are known as States' entitlements. The remaining net funds are transferred to a holding account known as the DoD Forestry Reserve Account. Balances in the account are made available to Military Departments for improvements of forest lands, unanticipated contingencies in the administration of forest lands, and natural resources management that implements approved plans and agreements. As an example, the receipts from this program for Army were $2.4 million in FY 00.[14] ***Your installation does not have to harvest timber in order to tap into these funds.*** These funds must be obligated in the fiscal years that they were issued. The Army is the Executive Agent for the DoD Forestry Reserve Account Program. The point of contact (POC) is Scott English at the Army Environmental Center (AEC), (410) 436-1559. Installation NRMs should consult with the natural resources staff at their major command, or in the case of Army, with staff at the appropriate Installation Management Agency (IMA) region, to determine service-specific procedures for applying for DoD Forestry Reserve Account Funds.

Agricultural Outleasing

Lands that are used to support the military mission may also be outleased for agricultural and grazing purposes. Monies received for the outleasing are retained

by each generating military service. The monies are then available to cover the administrative expenses of the outlease program and to fund installation natural resources management programs, including improvements of lands currently or not currently leased for agricultural and grazing purposes, wildlife habitat improvement, and erosion control. ***These are the broadest-use funds available exclusively to natural resources managers.***

There are Service-specific procedures for collecting and spending these funds. The U.S. Army Corps of Engineers administers some agricultural lease programs at Army and Air Force installations. The Corps of Engineers collects fees and deposits them into the Army's or Air Force's accounts with the Defense Finance and Accounting Service (DFAS), which is responsible for disbursement. The Navy administers its own agricultural outlease program through their Natural Resources and Real Estate offices. As an example, the Army received approximately $4 million annually from lease revenues for FY 95 to FY 00. For FY 01, FY 02, and FY 03, collections were $3.3 million, $3.0 million, and $3.1 million, respectively.[15] Once issued to the installation, agricultural funds are treated as normal O&M funds and must be obligated in the fiscal year that they were issued.

Hunting, Fishing and Trapping Fees

Installations can establish fees for hunting, fishing, or trapping permits that are in addition to Federal stamps and State licenses. These installation hunting and fishing programs are coordinated with the appropriate Federal and State fish and wildlife agencies. Unlike forestry and agricultural funds, ***fees collected can be used only on the installation where they were collected and only for the purpose of protection, conservation, and management of fish and wildlife, including habitat improvement***

and related activities. Fish and wildlife funds are "no-year" funds: revenues generated in a particular year remain available for obligation indefinitely. The installation NRM is typically the point of contact for this program. In the fiscal years 96 to 03, the Army received between $1.4 and $1.8 million annually from these fees, with $1.6 million received in FY 03.[16]

The Legacy Resource Management Program

The Legacy Resource Management Program[17] (Legacy) provides funding for projects that identify areas in which to improve natural and cultural resources management on DoD lands. Preproposals and proposals for Legacy funds are submitted via the Legacy Project Tracker[18] (http://www.dodlegacy.org). Due dates for preproposals and proposals vary annually, but typically are September 30 and November 15, respectively. Using the Legacy Tracker, the individual Components review their installations' preproposals and proposals. For instance, the review chain for the Air Force is installation, Major Command, and Air Force Staff at the Air Force Environmental Division (AF/ILEV). The review process of preproposals and proposals is conducted online through Legacy's Project Tracker.

Once the preproposal goes through the review chain, it proceeds to the Legacy Resource Management Program. Applicants are usually notified in May on whether or not their preproposal has qualified and has been accepted for consideration. If a preproposal is accepted for further consideration, a full proposal must be submitted, usually in mid-June. Typically, the preproposal must state the project name, areas of emphasis, project location, an outline of the projected budget, scheduled date of completion, summary of purpose and objectives, and potential products.

More information can be obtained from the Legacy Tracker website[19]. Legacy Resource Management POCs are Pedro Morales, (703) 604-1933, e-mail: pedro.morales.ctr@osd.mil; or Jane Mallory, (703) 604-1774, e-mail: jane.mallory.ctr@osd.mil. You are encouraged to contact the Legacy staff to get their insight on the best approach for your proposal.

To determine if a proposed project may be eligible for Legacy funds, consult the Legacy Project Tracker for the most current guidance on the areas targeted for funding[20]. For assistance with the Legacy Tracker, Tracker registration, troubleshooting, and general information, contact Pedro Morales, (703) 604-1933, e-mail: pedro.morales.ctr@osd.mil.

At the time of publication, the FY 05 areas of emphasis for Legacy funding were the following:

- **Readiness and Range Sustainment.** The military's ability to fight and win our nation's wars is tied directly to readiness resulting from realistic test and training exercises. Encroachment from a variety of sources is hampering this ability. Projects in this category include those that mitigate or resolve the adverse impacts of encroachment on DoD lands and help sustain military ranges and operating areas for future use. Efforts that protect wildlife and natural resources while protecting military training and testing areas from incompatible development and projects that can accurately quantify and track the effects of encroachment on readiness are encouraged. DoD's Sustainable Ranges Integrated Product Team (IPT) will review and coordinate on all proposals.

- **Integrated Natural Resources Management.** Habitat restoration and enhancement efforts allow military commanders greater flexibility in using existing DoD lands. Habitat enhancement can improve training conditions by minimizing disturbance of natural landscapes and increasing vegetative cover. Through the implementation of INRMPs, DoD land managers can determine how best to minimize negative impacts of diverse and sometimes conflicting requirements. Projects should demonstrate forward-looking approaches that promote natural habitat restoration and protection, thereby preventing the listing of additional plant and animal species. Traditional inventory projects are not included in this category, as these should be programmed for funding by the DoD Components. Instead, projects should enhance DoD's ability to access, evaluate, and use existing inventory data. Projects are also encouraged that use new approaches and creative partnerships to promote natural resources management on DoD lands.
- **Regional Ecosystem Management Initiatives.** Regional management planning, similar to the Sonoran Desert Ecosystem Initiative and the Gulf Coastal Plain Ecoregional Partnership, protects current military readiness and provides increased flexibility to respond to new missions. This process promotes adaptive management, sustainable use for ecological and human purposes, and the best available science. It also promotes the protection of species on adjacent non-DoD lands, thereby encouraging partnerships and reducing the management burden to DoD. Plans are to apply this proven planning process to other regions of interest to DoD or to specific ecosystem types with significant DoD landholdings (for example, desert, coastal, riparian, or grassland).

- **National and International Initiatives.** It is important for DoD to be able to participate in certain national and international conservation initiatives. Emphasis is placed on active participation in national partnerships such as the North American Bird Conservation Initiative (NABCI) and National Public Lands Day (NPLD), which permit DoD to benefit from economies of scale and to ensure its interests are given proper consideration. The DoD also continues to support its coral reef and Chesapeake Bay initiatives. National and international initiatives within the category need to complement DoD conservation objectives.
- **Invasive Species Control.** Economic and natural resource losses from the spread of nonnative invasive species are growing exponentially. Without proper control and restoration efforts, invasive species threaten native plant and animal species, some of which may already be listed as threatened or endangered. Invasive species also can adversely affect military readiness and create fire and safety hazards. Only through broad regional and national cooperative efforts can the threat of exotic pests be controlled. Legacy projects in this field should exhibit habitat enhancement, particularly through control of exotic pests and promotion of natural species. The goal should be to minimize disturbance of natural landscapes and increase vegetative cover, thereby controlling a growing threat to environmental security and improving training conditions. Proposals for control of invasive microorganisms are not included within this category. All projects will be reviewed by and coordinated with the Armed Forces Pest Management Board, when appropriate.
- **Monitoring and Predicting Migratory Patterns of Birds and Animals.** These efforts help to prevent bird and animal strikes with resultant loss of personnel and equipment, while also preventing inadvertent harm to bird and animal species. This

effort has three main thrusts: long-term monitoring of migratory bird and animal habitat use and survivorship; monitoring and predictive modeling of movements during migration and in response to training activities, using radar and satellite tracking; and monitoring birds of prey and waterbirds on training lands to comply with legal requirements. Continued support will occur for ongoing efforts as required. Complementary projects that would enhance and broaden these efforts are encouraged within this field. All projects will be reviewed by and coordinated with DoD Partners in Flight and the DoD Bird Aircraft Strike Hazard program.

- **Cultural Resources Management.** The protection of cultural resources associated with our national heritage is a fundamental part of DoD's primary mission. By requiring each installation to develop an integrated cultural resources management plan (ICRMP), as required by DoDI 4715.3, *Environmental Conservation Program,* the DoD recognizes its responsibility to manage cultural resources in a wise and effective manner. Because traditional inventory projects are programmed for funding by the DoD Components, Legacy projects in this category should enhance DoD's ability to access, evaluate, and use existing inventory data. In addition, projects should use research and development, along with other associated methodologies, processes, and tools, to support cultural resource management on military installations. Continued support will occur in projects that develop historic context studies for states other than California and Hawaii, improve management and reduce costs of historic military family housing units, and enhance the preservation and management of Cold War resources. Projects that utilize new approaches and creative partnerships to promote cultural resources management on DoD lands are also encouraged.

- **Historic Preservation and Force Protection.** Heritage conservation and disaster management in the United States are two fields that depend on a working relationship at the Federal, State, and local levels. A renewed focus on historic preservation occurred following September 11, 2001. With it came an awareness of the often difficult task of maintaining the historic integrity of a site while making it secure for people to work, live in, and visit. Makeshift security measures are effective in the short term, but over time reduce the quality of life for workers and visitors. The DoD needs comprehensive historic preservation plans that provide adequate security measures while enhancing the unique character of the installation's cultural environment. The Legacy program promotes proposals of needs assessments, programmatic agreements, and historic context studies that place particular emphasis on force protection integration in the preservation planning process. The Legacy program is also looking for projects that use technology research and development, offer training for conserving historic properties and protecting occupants, and enhance the DoD's ability to access, evaluate, and use existing inventory data. While the threat of terrorist attack remains a primary concern, it is important to note that any natural disaster can devastate a cultural institution and the collections it holds.
- **Native American Issues.** Military installations contain sites and landscapes where American Indian, Alaska Native, and Hawaiian Native people lived. As a result of military activities and archaeological excavations, the DoD currently cares for many cultural items and Native American human remains. As another example of how military activities and operations may impact these groups, tribal members may depend upon certain flora and fauna found within military installations for religious or medicinal purposes. Legacy projects dealing with Native American issues should

facilitate DoD-wide or regional efforts to protect, manage, or restore resources in these areas in a manner supportive of military activities and operations and that meet U.S. trust obligations to Federally recognized tribes.

- **Curation of Archaeological Collections, Associated Records and Documents, and Management of Archaeological Sites.** The DoD owns or controls more archaeological resources than any other Federal agency. Several statutes legally obligate the DoD to protect and provide professional care for these important archaeological sites, collections, and associated records. At the same time, there is increasing concern within DoD about balancing proper management of archaeological resources with ongoing training needs. The DoD has an immediate need for studies evaluating possible encroachment of archaeological sites on training areas. These studies should address the overall environmental management of these sites to meet mission and stewardship requirements. There is also an immediate need to develop sustainable deaccessioning and collections management policies for DoD. Such policies should evaluate long-term cost savings for storage, curation, and maintenance of collections, as well as public-private partnerships options.

  Archaeology and curation also have an important role to play in heritage tourism. DoD seeks projects in this area that would support the heritage tourism initiative of the Preserve America Executive Order. There will be continued support for efforts to rehabilitate at-risk DoD collections and to develop partnerships with institutions to curate the collections. These resources include artifacts, records, and material remains related to prehistoric or historic districts, sites, buildings, and structures or objects listed in or eligible for inclusion in the National Register of Historic Places.

Also included are instances where these resources are under immediate threat of deterioration or loss and where no other sources of funds are available.

- **Program Management.** During FYs 1991–2004, Legacy invested almost $275 million to fund more than 2,000 projects. The Program Management portion of these funds was used for DoD Headquarters Legacy staff, contract management support at Huntsville, Alabama, and related activities to enhance overall program management. This investment increases the effectiveness and efficiency of the Legacy Resource Management Program by ensuring the proper oversight of current projects, the completion of previously funded projects, and the communication of program results.

Strategic Environmental Research and Development Program

The Strategic Environmental Research and Development Program (SERDP) is a tri-agency program jointly managed by DoD, the Department of Energy, and the U.S. Environmental Protection Agency, with other participating agencies such as the National Oceanic and Atmospheric Administration and the National Aeronautics and Space Administration. SERDP is charged with identifying and conducting basic and applied environmental research; identifying research, technologies, and other information related to environmental activities, including environmental restoration; furnishing data, enhanced data collection, and analytical capabilities; and identifying technologies developed by the private sector that are useful for DoD and DOE environmental activities, including environmental restoration. In 1998 the SERDP Ecosystem Management Project was established (SEMP). It includes two primary goals: establishing one or more sites on DoD facilities for long-term ecosystem monitoring and pursuing ecosystem research activities relevant to sustaining DoD

mission capabilities. Funding opportunities are announced on the SERDP website at http://www.serdp.org.

Pulling Together Initiative

The Pulling Together Initiative's (PTI) goals are to prevent, manage, or eradicate invasive and noxious weeds through a coordinated program of public and private partnerships and to increase public awareness about the adverse impacts of invasive and noxious plants. PTI provides a means for Federal agencies to partner with State and local agencies, private landowners, and other interested parties to develop long-term weed management areas. The National Fish and Wildlife Foundation (NFWF) administers the funds for PTI on a challenge grants basis. That means each Federal dollar that NFWF awards must be matched with at least one non-Federal (that is, State, local or private) dollar, which can be in the form of cash or contributed goods and services. Information and an application can be found on the Denix Web site at https://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Legacy/rfp2001.html.

National Public Lands Day

Legacy funds may also be available for projects that support the goal of National Public Lands Day (NPLD). The goal of NPLD is to improve the quality of public lands and to educate the public about natural resource issues and stewardship. Military installations that permit public use of facilities for recreation and would like to participate in NPLD are eligible to apply for DoD Legacy funds. Legacy funds for NPLD projects can total up to $6,000 per site. Funds may be used for tools and equipment, materials, and enhancements (for example, trail materials, interpretative signs, and information kiosks). The DoD POC is Jane Mallory, ODUSD(I&E), (703) 604-1774 or jane.mallory.ctr@osd.mil. The National Environmental Education and Training Foundation

(NEETF) manages, coordinates, and generates financial support for the program. For more information and application information, go to http://www.npld.com/Legacy/Application.pdf.

Non-DoD Funding Sources

There are many alternative, non-DoD sources of funds and grants that may be available to support projects identified in your INRMP. Obtaining these funds usually involves writing a grant proposal or a funding request. See Exhibit 3–6 for some sources of assistance for writing proposals.

When evaluating non-DoD funds, you need to consider several points. As a Federal agency, are you allowed to request or compete for the funds, or are Federal agencies excluded? As a Federal facility, are you allowed to receive funds or grants? If so, what is the mechanism for delivery of the funds and how does it fit into your Service's or Major Command's budgeting and funding? Before you spend any time preparing a grant proposal or other request for support, you should answer these questions.

Usually, the first question can be readily answered by the prospective grantor of the funds. However, it may take you several attempts to identify an individual who can give you correct information. Many funding groups target private, not-for-profit organizations or local and State groups. However, support for your installation may be available from some of these organizations. If you do identify a potential means of support from a non-DoD source, confirm with your Major Command or headquarters support staff as to whether you can accept such awards.

Exhibit 3–6. Sources for Help With Writing Grant Proposals or Funding Requests

If you are not familiar writing grant proposals or funding requests, you may want to refer to the following sources for assistance.

- *Developing and Writing Grant Proposals*, Appendix VI of the Catalog of Federal Domestic Assistance. This appendix of the catalog describes initial development and review, the basic components of a proposal and how to write a winning proposal. The catalog also includes various guidelines and references. Appendix VI is available at http://aspe.os.dhhs.gov/cfda/ia6.htm.
- *Guide to Writing A Funding Proposal* by S. Joseph Levine. Available at http://www.LearnerAssociates.net/proposal, this web site also has several links to proposal writing resources.
- The Legacy Resource Management Program Tracker (http://www.dodlegacy.org). Review the tracker to read proposals and funding requests that have been submitted to the Legacy Resource Management Program. These will give some ideas as to how to present your proposal, particularly if the funding source is a Federal conservation group.

Do not give up, however, if you find that you do not qualify for a specific type of funding or support. A local, not-for-profit conservation organization may be able to qualify for the funds and you could form a partnership with them to achieve your goals (see Chapter 6 for information on partnering). There are many sources of funds

available to local community groups to assist in projects that can readily be tied to an installation. Consider partnering with these groups to achieve projects related to habitat restoration, wetland restoration, land and water conservation, outdoor recreational opportunities, and trail development and conservation. Many projects in these categories are equally viable on- and off-post, and many may straddle installation boundaries.

If you are not familiar with local groups you may consider contacting the Environmental Finance Center Network. The Network consists of seven Environmental Finance Centers (EFCs), located at universities around the country. The program provides a host of outreach services. The EFCs are staffed with experts in finance who provide outreach services and support to many groups, including State and local governments and small business officials. The EFC Network has a wealth of information and expertise, and the staff are available to provide support to you or give you recommendations on partnering, funding, and outreach. (The EFC Network Coordinator may be reached at hannigan.vera@epa.gov.) Two useful tools provided by the network are the Environmental Finance Information Network, an electronic outreach service available at http://www.epa.gov/efinpage/efin.htm and a Guidebook of Financial Tools (available through the website).

Unfortunately, there is no one source of information for alternative sources of funds for natural resources projects. However, there are many specialty groups and organizations that track funding sources and produce publications on this topic. Using internet browsers and targeting specific areas of interest, you can develop a short list of funding sources. For example, try searching under “funding natural resources” or

"grants natural resources." You should also contact relevant professional organizations for grant and funding information and for sources they may track. State environmental and natural resources departments are often good sources of funding information. Many States are aggressively tracking and applying for funds to supplement their conservation and stewardship needs (Exhibit 3–7). They may also track and publish sources of funds available to support local community efforts.

The following publications are examples of sources of funding information related to wetland and watersheds.

- *Funding for Habitat Restoration Projects: A Citizen's Guide Fiscal Year 2003*. Updated versions available at http://www.estuaries.org. The listings include the type of support, authorities, funding levels, activities, and eligibility requirements.
- *Restoring Riverfronts: A Guide to Selected Federal Funding Sources*. This guide is published by American Rivers, Inc. (http://www.amrivers.org). This directory includes descriptions and contact information for selected Federal programs that involve riverfront revitalization and restoration, directly or indirectly.
- *An Introduction to Wetland Restoration, Creation, and Enhancement*. This document was developed by the Interagency Workgroup on Wetland Restoration, which includes the U.S. Environmental Protection Agency, National Oceanic and Atmospheric Administration, Army Corps of Engineers, Fish and Wildlife Service, and Natural Resources Conservation Service. This is a user's guide that includes technical resources, contacts, and funding sources. This document is available in draft at http://www.epa.gov/owow/wetlands/pdf/restdocfinal.pdf.

Exhibit 3–7. Funding Sources Used by the Commonwealth of Massachusetts to Support Statewide and Community Wetland Restoration Projects

- Coastal America Partnership with Federal agencies to promote and fund coastal restoration
- GROWetlands (Groups Restoring our Wetlands) Grant Program
- Volunteer Wetland Restoration Advisory Team (WetRATs)
- Massachusetts Watershed Initiative
- In-kind grant matches (for example, provides staff time)
- Foundation grants
- Nongovernment agency sponsorships, for example, Audubon
- Massachusetts Corporate Wetlands Restoration Partnership.

Source: Christy Foote-Smith, Massachusetts Executive Office of Environmental Affairs, speaking at Wetlands '99 Annual Symposium of the Association of State Wetland Managers.

- *Catalog of Federal Funding Sources for Watershed Protection*. The catalog (EPA841-B-97-008) is produced by EPA's Watershed Academy, an online education and training site for a wide range of issues related to watersheds (http://www.epa.gov/OWOW/watershed/wacademy.html). The catalog includes funding source descriptions and department and agency statute and title indexes. The full catalog is available at http://cfpub.epa.gov/fedfund.

Reference Notes

1. *Guide to the DoD Environmental Security Budget*. October, 1998. Prepared for DoD and the Environmental Council of States (ECOS) by Paul Yaroschak, Director, Environmental Compliance and Restoration Policy, Office of the Assistant Secretary of the Navy. State review team members included Tim Nord (HQ Manager, Toxics Cleanup Program, Department of Ecology, State of Washington), Stan Philippe (Chief, Office of Military Facilities, Department of Toxic Substances Control, State of California), and Jennifer Roberts (Section Manager, Contaminated Sites, Department of Environmental Conservation, State of Alaska). Available at http://www.denix.osd.mil/denix/Public/Library/Envirsb/envirsb.html.
2. See Note 1 above.
3. Defense Environmental Quality Program, 2003 Report to Congress. http://www.denix.osd.mil/denix/Public/News/OSD/EQ03/eqarc2003.html.
4. Army Environmental Center EPRM software and guidance for DENIX account holders may be found at http://www.aec.army.mil/prod/usaec/eq/programs/epr.htm.
5. *Work Information Management System—Environmental Subsystem (WIM-ES)*. This is the Air Force's computerized management information sytem to store, manage, and report environmental data. Located at www.denix.osd.mil/denix/Public/Policy/AF/Instructions/note3.html.
6. *Policy and Guidance for Identifying U.S. Army Environmental Program Requirements: Support for Planning, Programming, Budgeting and Execution of the Army Environmental Program.* The Environmental Program Requirements (EPR) Report. HQ, Department of the Army, Office of the Director Environmental

Programs, August 2000. Located at http://www.aec.army.mil, Special Programs, Environmental Reporting Systems (a DENIX account is required for access).

7. See, for example, The Secretary Of Defense, *Defense Planning Guidance,* FY 1999–2003 (July 2, 1997).
8. The Fiscal Year 2002 National Defense Appropriations Act is available as H.R. 2586 and will subsequently be passed as a Public Law.
9. See Note 6 above.
10. The Air Force, AFI 32-7001, *Environmental Budgeting* (May 9, 1994).
11. *Sources of Funds for Army Use (Other Than Typical Army Appropriations),* Office of the Assistant Secretary of the Army for Financial Management and Comptroller, Resources Analysis and Business Practices, SAFM-RBA, 19 March 2004. The point of contact for the guide is Sharon Weinhold, SAFM-RB, at DSN 222-7874 or 703-692-7874. The full guide is available on the OASA (FM&C) home page at http://www.asafm.army.mil.
12. Department of Defense. 1997. *Accounting for production and sale of timber products.* In Department of Defense Financial Management Regulation (DoDFMR) 700014-R, *DoD Financial Management Regulation,* Volume 11A, Chapter 16 (March 1997). This canceled DoDI 7310.5, *Accounting for Production and Sale of Lumber and Timber Products* (25 January 1988). Internet: http://www.dtic.mil/comptroller/fmr/11a/11a16.pdf.
13. See Note 11 above.

14. See Note 11 above.
15. See Note 11 above.
16. See Note 11 above.
17. The Legacy Resource Management Program at http://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Legacy/legacy.html.
18. Department of Defense, Request for Preproposals for FY2005 Legacy Program Funding. The Legacy Project Tracker can be found at http://www.dodlegacy.org.
19. See Note 17 above.
20. See Note 18 above.

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Chapter 4
Using the Funds: Contracts and Agreements 101

Once funds are identified and designated for INRMP implementation projects, you then may secure the necessary goods, training, or services using contracts, interagency agreements, cooperative agreements, or other partnering agreements.

Procuring Services and Obligating Funds

In general, DoD and other Federal agencies obligate funds using contract mechanisms in accordance with the Federal Acquisition Regulation (FAR), specifically the Defense Federal Acquisition Regulation (DFAR). Essentially, a contract consists of an agreement between two parties: the government contracting officer and the contractor. The parties must agree on the type of goods and services to be delivered, the period of performance, and the cost.

Natural resources support often is provided through indefinite delivery/indefinite quantity (ID/IQ) contract mechanisms. When awarded, these large, generally broad-scope ID/IQ contracts have a funding range associated with them. Specific funds under ID/IQ contracts are not obligated until individual delivery/task order contracts for specific scopes of work (SOW) are awarded.

The contracting officer is the person who is authorized to enter into, administer, and terminate contracts. Therefore, you will need to actively consult with your contracting officer when forming a delivery/task order contract. Typically, this process takes 6 weeks or more from the time funds are certified and an acceptable SOW and purchase request and commitment (PR&C) are submitted to the contracting officer. The SOW provides the description of the services requested and the PR&C is the commitment to use funds to acquire the services. See Exhibit 4–1 for an outline of the basic steps to obligate funds. Once the contract is finalized and funds are obligated, then the contractor may begin work.

Contracting officers are particularly busy at two times of the year: during the beginning of a new fiscal year and at fiscal year-end. At the beginning of a new fiscal year (October 1 onwards) the contracting officers are occupied with establishing contracts and obligating funds for the new fiscal year. Priority is given to contracts involving time-sensitive projects and significant obligations (that is, high dollar amounts).

Contracting offices and installation commands have goals to obligate certain percentages of funds by certain times during the fiscal year. For example, an installation commander may be required to show that 75 percent of the installation's funding requirement is obligated by the end of the first quarter. Unfortunately for the natural resources manager (NRM) whose projects are in the lower cost ranges, installation projects with costs ranging in the hundreds of thousands of dollars may be awarded first because these go much farther in achieving the goals for percent of funds obligated.

Exhibit 4–1. Basic Steps To Obligate Funds

- Step 1: **Identify a potential mechanism for obligating funds**. This can include an existing contract or cooperative agreement.
- Step 2: **Understand all relevant review and approval procedures**. Learn about these from your contracting officer.
- Step 3: **Notify your accounting and finance office**. Most accounting and finance offices require advance notice of your intentions to obligate funds.
- Step 4: **Prepare a statement of work**. This is a statement of the work that must be performed.
- Step 5: **Verify that funds are available.**
- Step 6: **Submit the form to transfer funds for obligation.**

Source: M. Leslie et al., 1996.[1]

At the end of a fiscal year, funds that have not yet been obligated at an installation may become available to the Major Commands for their use or for allocation to other individual installations. Funds must be obligated in the year they are appropriated; otherwise, they will be lost to the Service. Contracting officers are especially busy at the fiscal year-end obligating these year-end funds.

To get the best support from your contracting office, plan your work around these two busy times of year. Or ask your contracting office what they would suggest as the best approach. Ideally, you should try to have most of your delivery/task orders (SOWs and PR&Cs) for the coming fiscal year to the contracting office by mid or late summer of the current fiscal year. In addition to being well prepared for the coming fiscal year contracting, if year-end funds do become available, you will be well positioned to secure these funds for INRMP projects. You should press to have your projects under contract and the funds obligated as soon as possible in the new fiscal year. Funds not obligated by the second quarter may be subject to reallocation and would cease to be available to fund INRMP implementation.

Privatization and Outsourcing

Privatization and outsourcing are alternative methods for obtaining goods and services. In some circumstances certain Department of Defense (DoD) employees may be replaced with contract employees. A 1995 report released by the Commission on Roles and Missions of the Armed Forces[2] recommended that commercial activities be outsourced. At that time, the commission estimated that approximately 250,000 civilian DoD employees were performing commercial activities that do not need to be performed by the government. Commercial activities include logistics support functions, equipment maintenance, research, development, testing, and evaluation (RDT&E) support, base maintenance, and health services.

Some nonmanagement support functions related to natural resources management have traditionally been accomplished by contractors; however, many INRMP activities cannot be performed by contractors. The Department of Defense considers

"[T]he management and conservation of natural and cultural resources under DoD control, including planning, implementation, and enforcement functions, are inherently governmental functions that shall not be contracted."[3] Further, the Sikes Act Improvement Act (SAIA) reinforces the need to have adequately trained staff to manage military natural resources programs by requiring the Secretary of each Military Department to "ensure that sufficient numbers of professionally trained natural resources management personnel and natural resources law enforcement personnel are available and assigned responsibility to perform tasks necessary."[4] This means that you must have adequate staff to prepare and implement the INRMP, and provide enforcement support.

You will need to determine which of your activities are considered inherently governmental functions that cannot be contracted and determine the appropriate support and funding mechanisms. Your headquarters natural resources staff can assist you in determining which functions may be contracted out. Also, guidance on what functions are considered inherently governmental is given in the Office of Federal Procurement Policy Letter 92-1, *Inherently Governmental Functions*.[5]

Support Provided by Other Military Services

The individual military services can provide support to each other directly and with limited contractual requirements. For example, the Corps of Engineers Waterways Experiment Station (WES) can provide specialist technical support in a range of environmental fields. An installation NRM requesting support from WES will provide a SOW to WES outlining the services, deliverables and schedule. When the scope and costs are negotiated and finalized, the requesting installation will obligate funds to

support the work. The funds are provided to WES using a Military Interdepartmental Purchase Request (MIPR) (DD Form 448). Funds are considered obligated as soon as WES accepts the MIPR.

Interagency Agreements

Contractual and funding mechanisms must be in place for a NRM to access the assistance of a Federal agency outside DoD. The NRM can draft an interagency agreement (IAG) to allow another agency to provide specific assistance. The IAG may or may not be linked to an existing memorandum of understanding (MOU). (A list of pertinent MOUs is provided in Chapter 6.) For example, an MOU between DoD or a specific Military Department and a Federal agency may exist that describes, in general, a range of cooperative support and activities that are permitted between the two groups. In this case, an IAG may be the mechanism used when a specific installation receives support from a specific office of the agency.

Whether associated with an MOU or not, the IAG should include standard contract components and should cite the respective authorities for executing the IAG and how the agency will be reimbursed for the services to be provided. The MIPR (DD Form 448) process can be used to transfer funds under IAGs, or funds may be transferred under an Economy Act Order. A model IAG between a Department of Army installation and an office of the Bureau of Land Management is available for download at http://www.denix.osd.mil/inrmp.

Alternative means for obtaining personnel support from government agencies, colleges, and universities are outlined in Exhibit 4–2.

Exhibit 4–2. Personnel Assistance Mechanisms (page 1)

Intergovernmental Personnel Act. The Intergovernmental Personnel Act (IPA) of 1972 is a means to accomplish research or obtain other personnel assistance. IPA is a program whereby Federal or State agencies borrow other Federal or State agency personnel for a limited time to perform a specific job under the supervision of the borrower agency. Any Federal or State agency is authorized to participate. The original concept of the IPA was to establish an educational exchange program. Federal and State agency personnel could increase their knowledge and experience by working within another agency for a limited amount of time. Ideally, when the Federal or State employees return to their original positions, their experiences working with the other agency would allow them to better coordinate and communicate with that Federal or State agency. Examples of IPA assistance may include using personnel from the National Resources Conservation Service (NRCS) to assist in developing and implementing installation-specific erosion and sediment control measures or using personnel from the U.S. Fish and Wildlife Service (USFWS) to assist in installation-specific endangered species management.

IPA assignments are management-initiated. Regulations require that an assignment must be implemented by a written agreement. Federal agencies use their own form for recording the agreement. The specific content of the agreement may vary according to the assignment. Under IPA agreements, the borrowing agency pays the borrowed employee's salary and administrative overhead. Personnel authorizations are not required, and IPA does not affect year-end personnel levels. The Office of Personnel Management maintains oversight over agencies' use of the IPA program. For more information, contact Tony Ryan, U.S. Office of Personnel Management, Office of Merit Systems Oversight and Effectiveness, Room 7463, 1900 E Street, NW, Washington, DC 20415 (e-mail: ipa@opm.gov) or visit the website at http://www.opm.gov/programs/ipa/.

Exhibit 4–2. Personnel Assistance Mechanisms (page 2)

Oak Ridge Institute of Science and Education. Another borrowed personnel option is through the Oak Ridge Institute of Science and Education (ORISE). ORISE was established by the Department of Energy (DOE) to undertake national and international programs in education, training, health, and the environment. ORISE is operated by Oak Ridge Associated Universities (ORAU), a consortium of 87 doctoral-granting colleges and universities and a management and operating contractor for DOE. Under the 1991 National Defense Authorization Act, Federal agencies are directed to initiate programs that will improve education in science, mathematics, and engineering. The intent is to expand the pool of scientists and engineers to meet long-term national needs. Through the Research Participation Program, ORISE participants can provide support to other Federal agencies, States, and local governments. The program allows associate-degree graduates, students studying for their bachelor's degree, and postgraduates the opportunity to gain hands-on experience in their respective fields by giving them temporary appointments at military installations.

Installations may assist in the selection of ORISE participants. ORISE participants are not employees in the normal sense: their assigned tasks must allow them to gain hands-on experience and they cannot be assigned to just one task for the duration of their employment. Stipends for ORISE participants are equivalent to salaries for employees hired with similar educational backgrounds, and a 30 percent overhead is added. ORISE appointments are normally limited to 3 years and do not affect year-end personnel levels. For information on ORISE, contact Priscilla Campbell at (865) 241-2871 or visit the ORISE Web site at http://www.orau.gov/orise.htm. ORISE program coordinators at the Army Environmental Center are Joanne Rasnake at (410) 436-7257 (joanne.rasnake@apg.amedd.army.mil) or Diane Lewis at (410) 436-5461.

Exhibit 4–2. Personnel Assistance Mechanisms (page 3)

Student Conservation Association. The U.S. Army Environmental Center (AEC) and the Air Force Center for Environmental Excellence (AFCEE) have cooperative agreements with the Student Conservation Association (SCA) to use SCA volunteers to supplement and complement permanent government staff on a wide variety of natural resources projects throughout the United States. The Army, National Guard, AEC, Marine Corps, Air Force installations, and the Defense Logistics Agency (DLA) can access this cooperative agreement. The point of contact (POC) for AEC is Sharon Schmitt (sharon.schmitt@aec.apgea.army.mil). The POC for AFCEE is Mary Anderson (DSN: 240-3808, commercial: (210) 536-3808). The AEC cooperative agreement is effective through May 2005. The U.S. Navy has a similar cooperative agreement with SCA.

PALACE Acquire (PAQ) Intern Program. This Air Force intern program is operated by the Air Force Personnel Center (AFPC) at Randolph Air Force Base, TX. The program is targeted to college graduates and provides them with 2 to 3 years of formal and on-the-job training. Over 20 diverse career fields are available, including science, engineering, public affairs, communications and information, and education services. Applications are accepted twice annually, in February and August, and the program receives between 1,000 and 2,000 applications each year. Some PAQ positions are filled under the Outstanding Scholar Qualifications, but qualification requirements vary with the field. Information on the program is available at http://www.afpc.randolph.af.mil/cp/secp/palacq.htm; or you can call AFPC at 1-866-229-7074 or DSN 665-5000.

Cooperative Agreements

Installation NRMs can use cooperative agreements (CAs) to acquire goods and services to support INRMP implementation. CAs are typically made to transfer money, property, services, or anything of value to support an activity undertaken for the public good. These agreements may be made with other Federal agencies, States, local governments, private nonprofit organizations, or individuals. CAs are an excellent mechanism for developing successful, long-term partnerships with organizations or individuals that can provide you with specialist or unique, needed services.

DoD installations are authorized to enter into CAs under a number of Federal laws. Section 670c-1 of the Sikes Act[6] of 1997 and DoD Instruction 4715.3, *Environmental Conservation Program,*[7] specifically identify CAs as a means to accomplish work in support of INRMP implementation. The CAs may be used for "inventories, monitoring, research, minor construction and maintenance, public awareness, and other work that supports the DoD conservation program."

The Sikes Act also allows DoD funds appropriated for a fiscal year to be obligated to cover goods or services under these CAs entered into during any 18-month period beginning in that fiscal year. This means that installations have the ability to obligate funds for INRMP-related CAs beyond a current fiscal year. Support provided under these agreements may be less costly for installations than traditional procurement methods because of the elimination of profit. See Exhibit 4–3 for additional guidance on how and when to use a CA.

However, in practice it may not be easy for you, the installation NRM, to establish CAs to support individual projects. Within the military services, the authority to

Exhibit 4–3. How and When To Use a Cooperative Agreement (page 1)

There are no specific DoD regulations or guidance on when to use CAs or how to develop and administer them for natural resources management. However, the general use and contents of a CA may be ascertained from provisions found in the Sikes Act and in the DoD General Regulations for the Award and Administration of Grants and Agreements (DoDGARs),[10] as well as Office of Management and Budget circulars, such as *Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments,*[11] and *Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations.*[12]

The Sikes Act simply states that a CA may be for "the maintenance and improvement of natural resources" or to "benefit natural and historical research".[13] Therefore, a CA may be used to secure a broad range of services ranging from grounds maintenance to wildlife management. For example, a CA may be entered into with a State university agricultural extension service for periodic land-use inspections of installation agricultural outlease activities. Below are the general requirements for a cooperative agreement, as provided in the DoDGARs at 32 CFR Part 22.

- No fee or profit is to be paid to the recipient of the CA instrument.
- Merit-based, competitive procedures (as defined by 40 CFR Sec. 22.315) must be used, to the maximum extent practicable, to award CAs.

Exhibit 4–3. How and When To Use a Cooperative Agreement (page 2)

Essentially any individual or organization may be eligible to receive CA funds under the Sikes Act. The DoDGARs at 32 CFR 22.415 require only that the fund recipient has the following qualifications:

- The management capability and adequate financial and technical resources to execute the program of activities envisioned under the CA
- A satisfactory record of executing such programs or activities (if a prior recipient of an award)
- A satisfactory record of integrity and business ethics
- Be otherwise qualified and eligible to receive a grant or CA under applicable laws and regulations, as provided under 32 CFR Sec. 22.420(c).

sign CAs generally resides with grants officers or specifically designated contracting officers. Grants officers are usually associated with headquarters operations or with procurement groups such as the U.S. Army Medical Acquisition Activity (USAMRAA).

CAs set up in accordance with Sikes Act requirements are a special type of agreement. Sikes Act CAs are specifically excluded from some standard grant and cooperative agreement procurement requirements (for example, they are exempted from Chapter 63 of Title 31[8]) and are supported by funds appropriated for a given fiscal year.[9]

Sikes Act CAs can be used to accomplish specific natural resources support projects, they are usually funded in the range of tens of thousands of dollars and can usually be accomplished within an 18-month period. This is in contrast to multiregional, multiagency, multimillion-dollar, multiyear programmatic cooperative agreements that must be advertised in the *Federal Register* and that must go through an intensive selection process under the direction of specially appointed grants officers.

Contracting offices and legal support groups are often unfamiliar with the Sikes Act and the intent to use the cooperative agreement as a special type of procurement to support DoD land management. In some cases, local project-specific CAs have been treated like large programmatic support agreements and, as a result, have required an extended time and effort to put in place. After an initial foray into the CA approach, many NRMs have abandoned this option because it is too time consuming. In many cases, the time and effort to put the CA in place exceeded the anticipated project time schedules and costs.

Within the Navy, the authority to enter into CAs has been delegated down through the organizational structure to the Real Estate Division of the Engineering Field Activity (EFA) (Naval Facilities Engineering Command, Engineering Field Division). Requests for assistance in establishing a project-specific CA are received by a designated real estate contracting officer (this may be the EFA natural resources specialist), who then coordinates the entire process from scoping, to cost estimation, negotiation, and authorization.

United States Army Medical Research Acquisition Activity
820 Chandler Street
Fort Detrick, MD 21702-5014
http://www.usamraa.army.mil
POC: Chris Helmon, (301) 619-2265

If you are at a non-Navy facility and you do not have access to a contracting office familiar with Sikes Act cooperative agreements, then the USAMRAA may be an alternative. The USAMRAA is the contracting element of the U.S. Army Medical Research and Materiel Command. Their primary mission is to provide acquisition support to the command, particularly in the areas of grants and CAs. USAMRAA procurement and legal staff are familiar with all phases of establishing CAs. The Sikes Act CAs they handle for cultural and natural resources projects typically are in the range of tens of thousands of dollars, but there is no maximum or minimum dollar limit. There is a minimal handling fee assessed for each project, which is usually in the range of 2 to 3 percent of the project value.

The installation natural resources manager may contact USAMRAA directly or may coordinate through the respective divisional or Major Command natural resources specialist. The U.S. Army Environmental Center (AEC) is working with the USAMRAA to establish a standard procedure for coordination between Army installation managers and USAMRAA. The intent is that Army natural and cultural resources managers will coordinate directly with USAMRAA for CA support. The AEC has recently established a turnkey arrangement with USAMRAA that allows individual installations seeking cultural resources support to access existing cooperators directly through USAMRAA. Under the arrangement, the USAMRAA anticipates that they can provide a 2-week turnaround for award of each job. The AEC POC is Steven

Sekscienski, (410) 436-1560 or Steven.Sekscienski@aec.apgea.army.mil. Information in the text box on this page provides contact information for the USAMRAA.

The basic information presented above should help you determine which INRMP projects and initiatives are best suited to the various contracting and funding vehicles. Chapter 6 focuses on partnerships and discusses which types of groups and organizations you should seek as partners under a CA or associated agreement, such as a memorandum of understanding or memorandum of agreement.

Reference Notes

1. From *Conserving Biodiversity on Military Lands: A Handbook for Natural Resources Managers.* 1996. M. Leslie, G.K. Meffe, J.L. Hardesty, and D.L. Adams. The Nature Conservancy, Arlington, VA.
2. Commission on Roles and Missions of the Armed Forces, *Directions for Defense,* June 1995.
3. DoDI 4715.3, *Environmental Conservation Program,* Section D Policy, 1.General Conservation Management, part m., referencing DoD 3210.6-R, DoD Grant and Cooperative Agreement Regulations, March 1995.
4. The Sikes Act Improvement Act of 1997, Public Law 105–85, Div. B. Title XXIX, Nov. 18, 1997; and codified at 16 U.S.C. § 670a et seq. (1998) (amending The Sikes Act of 1960, 16 U.S.C. § 670a et seq. (1996)). Full text can be found at http://thomas.loc.gov/home/thomas2.html or http://www4.law.cornell.edu/uscode/16/670a.html.

5. Office of Federal Procurement Policy, Letter 92-1, *Inherently Governmental Functions*, September 23, 1992.
6. See Note 4 above.
7. See Note 3 above.
8. U.S. Code: Title 31, Chapter 63: "Using Procurement Contracts and Grant and Cooperative Agreements," Section 6305, Using Cooperative Agreements. This section discusses: 1) transferring support using a cooperative agreement as opposed to acquiring (by purchase, lease or barter) property or services; 2) using a cooperative agreement when substantial government involvement is expected. Neither of these items is relevant to Sikes Act cooperative agreements because Sikes Act cooperative agreements 1) do involve purchase of goods and services; and 2) do not include government involvement (that is, no sharing of services or support between the parties to the agreement.)
9. SAIA, note 1, at § 760c-1 (c) and (b). See Note 4 above.
10. 32 CFR Parts 21 and 22. 1999.
11. Office of Management and Budget, OMB Circular A–102, *Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments,* October 7, 1994.
12. Office of Management and Budget, OMB Circular A–110, *Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations,* November 9, 1993.

Chapter 5
Effective Communications

Because of the many groups and individuals that the natural resources manager (NRM) must coordinate with on a regular basis, NRMs are often on the front line of installation communications. Not everyone is comfortable with this role, and communications is a topic on which most NRMs have had little training. As the NRM, you will be called on to use almost every form of communication: briefing command offices; sending notices to paper and electronic media; negotiating with regulatory agencies; presenting at public, peer, and professional meetings; and promoting education and awareness for schools, scouts, and other groups.

Communication Information and Assistance

Communication information and assistance for natural resources issues are hard to locate and often difficult to apply to your particular situation. Communications is always a component of land/ecosystem/natural resources management, but it is usually viewed as part of the process and not as a separate goal in itself. As more INRMPs are implemented throughout DoD, more assistance and guidance should become available on the topic of effective communications for NRMs. Some recent publications that may assist you with this topic include the following:

- *The Ecosystem Approach: Healthy Ecosystems and Sustainable Economies, Volume I – Overview, 1995 and Volume III – Case Studies, 1996.* Report of the Interagency Ecosystem Management Task Force. Copies of the report are available through the National Technical Information Service (NTIS) or you can access the volumes at http://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Ecosystem/ecosystem1.html and http://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Ecosystem/ecosystem3.html.
- *Conserving Biodiversity on Military Lands: A Handbook for Natural Resources Managers*. 1996. M. Leslie, G.K. Meffe, J.L. Hardesty, and D.L. Adams, The Nature Conservancy, Arlington, VA. Chapters 3 and 6 contain discussions on communication and partnering. Available at http://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Biodiversity/biodiversity.html.
- *Ecological Stewardship: A Common Reference for Ecosystem Management.* 1999.[1] Refer to the sections on Public Expectations, Values and Law, and Social and Cultural Dimensions in Volume III. This is a three volume set with CD by Elsevier Science Ltd., The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, UK. ISBN: 0-08-042816-9 (Volume I), 0-08-043206-9 (Set: Volumes I–III). Volume III edited by W.T. Sexton, A.J. Malk, R.C. Szaro and N.C. Johnson.
- *Conservation Directory: A Guide to Worldwide Environmental Organizations.* 2000. The National Wildlife Federation, Vienna, VA. To order a copy of the directory, go to http://www.nwf.org/conservationDirectory/print.cfm. An Online Conservation Directory is available at http://www.nwf.org/conservationDirectory/.

Establishing an Internal Communications Network

Internal communications is the exchange of information with other individuals and elements at your installation. Good internal communications is key to implementing the INRMP because accomplishing individual projects often requires the coordination and support of several installation offices. Establishing a good internal communications network for natural resources management may be time consuming, but once you have a system in place, it will take less time to maintain and it will facilitate INRMP implementation.

Individuals and groups for whom you have identified a role or responsibility in INRMP implementation must be included in your communication network. Chapter 2 identified key installation personnel that provide support in INRMP implementation.

Natural Resources / Land Management Review Committee

You may consider establishing an environmental review committee to provide oversight on INRMP implementation and to technically review and make recommendations on upcoming natural resources or other environmental projects. If an environmental committee already exists at your installation, you may wish to request being included in the agenda to report regularly on upcoming INRMP initiatives, progress with ongoing work, and pending issues.

To help get started, you may want the assistance of someone who has had experience in organizing or participating in environmental committees. You may have this individual facilitate the first meeting. The committee meetings should not only give you the opportunity to discuss INRMP projects, but they should be structured to keep you and other staff appraised of other ongoing or future projects that may affect

the implementation of the INRMP. The following is guidance on establishing an environmental committee:

- Research your installation's staff to identify the responsibilities of each office.
- Obtain a "wiring diagram" of the staff and prepare a flow chart showing how offices interact, especially in decision-making.
- Select the offices that are pertinent to implementing your INRMP. (See also "Key Installation Personnel and the Natural Resources Manager" in Chapter 2.) Ask yourself the following questions: Which offices can grant me access to lands that I need to manage? From which offices do I need to get approval before I can carry out a particular activity? From which offices do I need support?
- Consider the need to include representatives of installation tenant organizations. Is there an installation POC who oversees all tenant groups whom you should include?
- Make every effort to gain the interest and support from upper command, such as the garrison commander or the chief of staff. Support from these individuals can remove obstacles or quicken the pace of activity. When briefing upper command on your proposal to establish an environmental coordination committee, explain the importance of the INRMP to sustaining readiness and how establishment of the committee facilitates implementation of the INRMP. Also, identify which offices would be involved in the review meetings.
- Visit each office or agency personally and ask that a point of contact (POC) be designated to attend the meetings. Select a regular date, time, and location for the committee meetings that is convenient for all attendees.

At the first coordination committee meeting, discuss in detail what you hope to accomplish at the meetings and provide a copy of the INRMP to each attendee if they do not have one. Rather than providing a paper copy to the participants, you could make an electronic copy available to them. The advantage of an electronic copy is that it can be quickly searched for key topics and information. At the first meeting you should establish dates and times for regular meetings.

Installation Communications for NEPA Issues

The National Environmental Policy Act of 1969,[2] or NEPA, is the fundamental environmental planning process that must be undertaken by all Federal agencies before initiating actions that may affect the environment. NEPA, along with its implementing regulations,[3] essentially is the planning tool for the government to assess the potential environmental effects of its actions. Public participation and public review are key elements of NEPA guidance. Exhibit 5–1 provides an overview of the NEPA process.

NEPA assessment and compliance is a key area where installation communication and coordination can sometimes fail. Depending on the internal organization of your installation, you may or may not play a key role in the installation NEPA processes. Most NRMs agree that it is a constant struggle to assure that installation projects are subjected to NEPA assessment (for example, meet the Service's criteria for a categorical exclusion, or are analyzed through the environmental assessment or environmental impact statement processes), and that natural resources and natural resources management initiatives are given the appropriate level of consideration. In many cases the problem is not the level of NEPA assessment but the timing of the assessment; many project proponents still do not use NEPA as a planning tool and do not initiate NEPA analysis until well into the design or even the construction phase

Exhibit 5–1. The NEPA Process

Proposed actions that may impact the environment must undergo an environmental review to determine whether significant environmental impacts are anticipated. If an environmental review determines that there is potential for significant impact for a proposed action, then an environmental document called an environmental assessment (EA) must be prepared. The EA process provides documentation on the analyses of potential environmental impacts and allows the public to comment on the proposed actions. The EA includes either (i) a finding that there will be no significant impact (FONSI) or (ii) concludes that a significant impact may occur, thereby requiring the preparation of a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS).

The EIS process provides a Record of Decision (ROD) document that presents the various alternatives considered for the proposed action and the rationale for the final action selected. The EIS is filed with the EPA and, as with the EA process, the public is given the opportunity to provide comments on the EIS analyses. Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,*[4] implores NEPA documentation developers to take into account any disproportionately adverse impacts to minority and low-income communities and to encourage public participation by these communities.

Specific actions that are exempted from the EA and EIS process are called categorical exclusions. The DoD components have predetermined which actions do not pose significant impacts and list these specific actions as categorical exclusions in their regulations and guidance. The Army, Navy, and Air Force categorical exclusions can all be found at http://www.access.gpo.gov/nara/cfr/cfr-table-search.[5]

of projects. Tenant organizations are particularly prone to completing all of their own organization's requirements before bringing projects to the installation environmental staff.

Improved internal communications can relieve much of the difficulties surrounding NEPA review and compliance. The installation environmental office, or other organizational group with responsibility for NEPA compliance, should establish a standardized procedure for identification and notification of NEPA compliance requirements. This can be as straightforward as requiring completion of a checklist. The NRM should assist in development of the checklist to ensure that the appropriate questions are asked based on current natural resource information (occurrence of protected species, changes in wetland permitting requirements, designation of sensitive areas, accepted best management practices, and so forth). A standardized procedure for comment and review of NEPA documentation should also be established, and a designated POC should be identified to coordinate NEPA compliance. Tenant organizations must be alerted to the installations established procedures for NEPA compliance. The environmental review committee discussed above can be used as a forum to regularly review and/or audit completed checklists and NEPA documentation.

Some installation environmental offices have taken over the responsibility for preparing installation NEPA documentation on behalf of project proponents. Although this is a significant responsibility, it can provide the installation with a more efficient, equitable approach and is more likely to identify key issues early in the planning process. The NRM should continue to stress to the environmental staff that natural resources and planned INRMP initiatives are included as appropriate in their NEPA

documentation. Because you are the main person involved in the planning and implementation of INRMP-related natural resource projects, you will likely be the lead for conducting any necessary NEPA documentation. Therefore, you need to have a good working knowledge of NEPA requirements.

Essentially, you must be able to answer the following questions:

- What level of assessment is appropriate to comply with NEPA and my Service's planning guidance?
- What is the appropriate level of consideration for natural resources in both the description of baseline conditions and in the impact analysis?
- Does a particular INRMP natural resources–related activity require assessment under NEPA, or might it be included under the NEPA documentation prepared for the INRMP (assuming NEPA documentation was prepared)?

Briefing Fundamentals

Briefings are essential to promoting INRMP implementation. If people are not aware of the goals and projects in the INRMP and their importance, funding is not allocated, staffing is overlooked, and projects will not be completed. It is crucial that the individuals you have identified as having roles and responsibilities for INRMP implementation are briefed and given the information that they need to get the job done. Everyone from the commander to the staff in the field needs to be informed.

The first step in preparing a briefing is to decide what kind of briefing will be presented. There are basically two types of military briefings: information and decision. The purpose of an information briefing is to get information out and in

Key strategies to keep the briefing on schedule if you are interrupted:

- Offer to meet after the briefing to discuss additional topics. This is a particularly useful approach if the point being raised is not central to your objectives for the meeting.
- Tell questioners to keep their thought or point until it can be discussed in the question and answer session.

the right format. The purpose of a decision briefing is to present information and alternatives and make a decision before the briefing is over.

Prior to the scheduled briefing, you should have a preliminary coordination meeting or brainstorming session to answer some initial questions about the type and format of the briefing. A briefing checklist that will help you track the key elements for a successful briefing is provided in the Appendix. ***Remember: a briefing should be just that. Keep it short!***

Once the briefing site is identified, do a "practice" run at the site. If you encounter problems, you can resolve them ahead of the briefing. Also, any equipment that will be used should be tested during the practice run.

Start with a formal presentation and scale back during the briefing if needed. For most people in attendance, time is very valuable, so keep the briefing short, especially the start-up section and the main body. The best time for a briefing is late morning

around 10 a.m. or midafternoon around 3 p.m. Before the official presentation begins, give personal introductions. Say who is who and from where, and why they are in attendance (for example, as the specialist natural resources professional, as the engineer designing a project or pursuant to a contract).

Use good visual aids that help those listening to your briefing follow along. Effective visual aids include overhead, slide, or computer projectors and flip charts or posters. All your points should make a lasting impression. If your presentation includes complex text, figures, or numbers, you should also give this information to the attendees in handout form so that your listeners are actually listening and not trying to write what you say. In most cases, it is a good idea to hand out a paper copy of all of the overheads or slides you use. If handed out at the start of the briefing, your audience can use them to take notes. Or you may prefer to summarize your overheads or slides and provide a paper copy at the end of the briefing as a take-home of your main points. Any overheads used should be easy to read and not wordy.

The body of the briefing is where the most important information is located. There are different ways of presenting information. It can be presented chronologically or by degree of importance. For most audiences, the latter is often a better approach. Start with the least important item and end with the most important point; this will effectively emphasize your main point to the attendees. The conclusion of the briefing should be a summary of the issues. End with a question and answer session. In a 1-hour briefing, your presentation should be 20 to 30 minutes long. The remainder of the time will be taken with questions in an information briefing or used for developing a consensus for a decision briefing.

Electronic Communications Guidance

Another way to facilitate communications within an installation is using an installation intranet system. Basically, an intranet is an internal web site. It can be set up a number of different ways. One option is to have the intranet pop up when someone logs on to the system. Or you can establish an icon on each personal computer that links to the intranet. An intranet system is very useful in posting information, providing guidance, and other notices. For example, the NRM can immediately communicate that he or she has designated an area as temporarily off-limits because it is prime habitat for a particular species during its breeding season. In some cases, it may not be advisable to communicate the reasons of a particular action. Providing too much information may draw unnecessary attention. For additional information on establishing or utilizing an intranet system, contact your local network provider or your information technology department. Some installations may publish the INRMP on the installation Web site on a limited-access basis (see Chapter 9 for more information on electronic distribution and updating of an INRMP).

An alternative to an intranet is to categorize e-mail addressees into pertinent distribution groups for receipt of specific types of information concerning natural resources. For example, if you plan to conduct prescribed burns, you will be communicating with many different groups across the installation and also off-post. This may involve communicating over a period of time with the installation commander; the director of plans, training, and mobilization; the provost marshal or Service-equivalent; and the installation fire department. You may want to alert the Public Affairs Office and the Family Housing Office, so that on- and off-post communities are given advance notice of prescribed burns. Initially, it will take extra effort to establish your distribution group addressee folders. But by using

preestablished e-mail distribution or addressee categories (for example, "Burn Planning and Authorization," "Burn Date Notification"), you will save yourself time and also be sure that the correct POCs are notified each time you issue a notice or provide information.

Maintaining an Internal Communications Network

Once internal communications are established, they must be maintained to remain effective.

- Keep in touch with your POCs, even if you have not needed their assistance recently. Communicate with them (telephone call, e-mail, and so forth) to keep them updated on INRMP activities.
- Volunteer to assist other offices with their projects. They will be more likely to help you if you offer your help to them on occasion.
- If a POC is transferred or plans to leave his or her position, work with the POC to brief their replacement. If there will be no replacement, coordinate with your POC to identify and brief another person that can serve as a new POC.
- Establish regular meeting dates if you choose to hold natural resources/land management review meetings. This will encourage greater participation in the meetings since attendees will have the meetings incorporated into their schedules in advance.

The Importance of External Communications

It cannot be overstressed that ecosystem management places an emphasis on future conditions and involves considering local and regional factors. The NRM has little control over these issues; however, by collaborating and cooperating with other regional groups, progress toward overall ecosystem goals and objectives can be achieved. Participating in the installation planning process and in project review will give you a sound basis from which to interact with regional groups. At the same time, your participation with groups external to the installation will allow you to relay back to installation planners and managers any regional and future issues that may impact the installation.

The Sikes Act (as amended by SAIA 1997[6]) and the 2002 *Updated Guidance for Implementing SAIA*[7] require that installations provide an opportunity for the public to comment on INRMPs. The Sikes Act does not specify how these comments are to be solicited, but the DoD position is that NEPA documentation may be used to meet the public review requirements of the Sikes Act. The administrative record that is prepared as part of NEPA documentation could also be used to document the decision-making process for INRMP preparation and implementation. Each of the military Services require that NEPA be applied during the preparation of INRMP. However, not all Services require NEPA compliance for annual and 5-year updates.

Continuing technological advances make it easier for the public to have positive and active involvement in INRMP implementation and updating. Installations are encouraged through the 2002 *Updated Guidance for Implementing SAIA* to make their INRMPs available through the Web. However, if you publish an INRMP on the Web, make sure it is in a user-friendly format. Potential users will become frustrated as

they attempt to review an INRMP that takes hours to load or uses too much memory. Consider developing a customized Web-based INRMP for the next INRMP. (See Chapter 9 for more information on Web publishing.)

The on-post staff is a somewhat captive audience and it should be relatively easy to establish and maintain communications with on-post groups. External communications, however, are much more challenging. It is important to build relationships with local residents, regional groups and organizations, and other external parties before a specific need arises. If you have existing, positive relationships with these groups, it may help you avoid future problems or allow a quick resolution of disputes. Partnering with local groups and organizations is an excellent way to establish positive communication (see Chapter 6). Participation in or attendance at local community planning meetings will also help you, as a representative of the installation, become more interactive with the local community.

If an issue should arise that you or the local community perceives as a serious problem, then communications should begin immediately. Do not wait until any needed studies or investigations are almost completed or until final data and a final report are available. You should provide basic information to the community as quickly as possible. You should always request the support of the Public Affairs office, especially when dealing with specific problems or issues.

If you are called upon to report on a problem to the public or other external groups, you should try to address the following at a minimum:[8]

- Report on the general nature of the problem (the types of complaints, if any, that have been received) and identify any affected locations.
- Relay to the audience the installation's policy on providing a healthy and safe environment and its commitment to stewardship.
- Tell the audience what has been done to date to address the problems or complaints. Include the types of information that are being gathered, what is currently being done, and how the problem will be avoided in the future.
- Identify where the community, your partners, or your audience may be of assistance.
- Report on what may still require to be completed and the expected schedule for completion.
- Provide the name and telephone number of a POC (possibly in the Public Affairs Office) who can be contacted for further or updated information.

More information on public education and outreach is provided in Chapter 7.

Integrated Natural Resources Management and NEPA

Because NEPA is a planning tool, it can help you in many areas of natural resources management: preparing the INRMP, implementing projects, reviewing and updating plans, interacting with review agencies and the public. Most INRMPs have accompanying or associated NEPA documentation, usually an EA, that assesses the potential effects of alternative natural resources management scenarios on the environment.

INRMP Review Processes

The Sikes Act (as amended by SAIA 1997) and the 2002 *Updated Guidance for Implementing SAIA* require that installations provide an opportunity for the public to comment on INRMPs. The Sikes Act does not specify how these comments are to be solicited, but the DoD position is that NEPA documentation may be used to meet the public review requirements of the Sikes Act. NEPA, as applied to INRMPs, could also be used to document the decision-making process for INRMP preparation and implementation, through the administrative record that is prepared as part of the NEPA documentation. Each military Service requires that NEPA be applied during the preparation of INRMP; however, not all Services require NEPA compliance for annual and five-year updates.

There is considerable latitude on the extent of public involvement for a given NEPA assessment, especially if an EA is to be prepared. Public participation can include input on scoping the type, extent, and detail of a proposed NEPA analysis; published notices in local media; review of NEPA documentation; solicitation of review comments; and attendance at public meetings. The NRM can use NEPA's standard approaches and the Service-specific NEPA guidance to gauge the appropriate level of public involvement, as well as to determine the most appropriate means of achieving the public's involvement. Individual natural resources projects may be of little interest to the public and in these cases, the public involvement may be only a review of an EA document with an opportunity to comment. On the other hand, the goals and objectives outlined in an INRMP may be of considerable interest to certain groups.

Your INRMP will likely benefit from the inclusion of information and suggestions from individuals knowledgeable in local and regional issues and affairs. In preparing

or updating their INRMPs, some installations have found it helpful to assemble working committees made up of key installation staff, State and Federal agencies, and representatives of other interested parties and members of the public. Subgroups of these committees could remain involved to support INRMP implementation, provide review or comments, and participate in any future updates. Publishing the INRMP on the Web in a user-friendly format will greatly facilitate communication and coordination with all key groups and the public. (See Chapter 9 for more information on Web publishing.)

Reference Notes

1. *Ecological Stewardship: A Common Reference for Ecosystem Management.* 1999. Three-volume set and CD by Elsevier Science Ltd., The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, UK. ISBN: 0-08-042816-9 (Volume I), 0-08-043206-9 (Set: Volumes I–III). Cooperating agencies included the USDA Forest Service, USDI National Oceanic and Atmospheric Administration, USDI Bureau of Land Management, USDI Fish and Wildlife Service, USDI Biological Survey and USDI National Biological Service, USDI National Park Service, and the World Resources Institute. Volume I: *Key Findings,* edited by N.C. Johnson, A.J. Malk, R.C. Szaro, and W.T. Sexton. Volume II: *Biological and Ecological Dimensions; and Humans as Agents of Ecological Change,* edited by R.C. Szaro, N.C. Johnson, W.T. Sexton, and A.J. Malk. Volume III: *Public Expectations, Values and Law; Social and Cultural Dimensions; Economic Dimensions; and Information and Data Management,* edited by W.T. Sexton, A.J. Malk, R.C. Szaro and N.C. Johnson.
2. National Environmental Policy Act of 1969, 42 U.S.C. § 4321 et seq. Available at http://ceq.eh.doe.gov/nepa/nepanet.htm.

3. Implementing regulations may be found in 40 CFR Parts 1500–1508, available at http://www.epa.gov/epahome/cfr40.htm.
4. Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994). Available at http://www.denix.osd.mil/denix/Public/Legislation/EO/note19.html.
5. *See also* Department of Army, AR200-2, *Environmental Effects of Army Actions,* Appendix A. Available at http://books.army.mil/cgi-bin/bookmgr/BOOKS/R200_2/CCONTENTS.
6. The Sikes Act Improvement Act of 1997, Public Law 105–85, Div. B. Title XXIX, Nov. 18, 1997; and codified at 16 U.S.C. § 670a et seq. (1998) (amending The Sikes Act of 1960, 16 U.S.C. § 670a et seq. (1996)). Full text can be found at http://thomas.loc.gov/home/thomas2.html or http://www4.law.cornell.edu/uscode/16/670a.html.
7. Raymond F. DuBois, Deputy Under Secretary of Defense (Installations and Environment), 10 October 2002. Memorandum on Implementation of Sikes Act Improvement Act: Updated Guidance. Available at https://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Legacy/Sikes/max0002.pdf.
8. This information is adapted from EPA' s indoor air quality reporting guidance.

Chapter 6
Partnering

Why Partner?

Partnering is an excellent means to accomplish some of the natural resources objectives outlined in your INRMP. Many military installations are short staffed in natural resources management personnel. There are generally too many initiatives and too few funds to meet the needs by using contract labor. Funding priorities tend to favor meeting and maintaining compliance requirements, with longer-term stewardship activities going unfunded.

Finding appropriate partners may be a key to your success in meeting INRMP goals and objectives. On a broader level, partnerships can lead to the development of a knowledgeable and devoted constituency for the entire installation. Exhibit 6–1 lists some sound reasons to form partnerships.

Of the many programs at an installation, the natural resources program is the one most likely to develop sustaining, successful partnerships. Installation lands under the Department of Defense's (DoD's) management have been able to retain a wealth of natural and cultural resources while lands around installations have been subjected

Exhibit 6–1. The Benefits of Partnership

- **Accomplish Objectives.** Some say it is the best way to get the job done.
- **Spend Less.** Sharing time, logistical support, and contributed funds among partners will save money for all.
- **Build Good Community Relations.** Partners will relay their positive experiences to others.
- **Build Advocates for Your Program.** "Once they have dirt under their fingernails, they are committed."
- **Obtain Funds.** Seek additional funds or matching funds from sources such as partners, local businesses, and the Legacy Resource Management Program.
- **Have Fun.** Recruit colleagues, devotees, and teachers.
- **Establish Awards and Rewards.** Seek these throughout the chain of command, from the installation commander to the Secretary of Defense, and from local organizations as well.

Source: S.G. Bishop, 1994.[1]

to development and intensive farming and forestry. As a result, the resources on installation lands are being sought out by a host of groups.

Today there are many organizations and individuals who may have an interest in helping you with your stewardship efforts: from military families living on post and recreational users to research and educational groups and local, State, and Federal natural resource agencies. Identifying appropriate projects, matching them with the best partners, and establishing and sustaining long-term partnerships are significant challenges, but as has been demonstrated many times, the payoff and rewards for these efforts are great.

The Legacy Resource Management Program, which funded development of this handbook, has always placed an emphasis on partnerships. It is one of the program's three guiding principles: stewardship, leadership, and partnership. Beginning in 1994, the Legacy Resource Management Program has funded workshops on finding and using volunteer partners and has produced three reports specifically on using partnering as a means to support installation natural resources programs. Some of the following information is excerpted from three reports prepared for the Legacy Program by Sarah Bishop of Partners in Parks.[2,3,4]

The Partnership Concept

Partnering is not new to DoD, especially in the conservation and stewardship arenas. Federal and State agencies have been partnering with DoD and with individual installations for some time to share resources, access technical expertise, and resolve regulatory issues. Beginning in the early 1990s, partnering opportunities began to

include nonprofit organizations and specialist groups interested in conservation and stewardship. As Bishop describes them, "These new partnerships have two missions. One is to help interested individuals and organizations gain access to military installations for the purpose of working on rewarding resources management objectives. The other is to help installation commanders and their resources management staff accomplish major goals and objectives in resource protection, conservation and stewardship."[5]

Partnering involves common goals and mutual interests, whether it is related to addressing regulatory compliance issues or achieving conservation and stewardship goals. A partnership typically is not a legally binding relationship; rather, it is a commitment and agreement between two or more groups. Partners ordinarily agree to do the following:[6]

- Participate in structured, facilitated team-building sessions and joint training to acquire the skills needed to work together as a team
- Remove organizational impediments to open communication within the team, regardless of rank or organizational affiliation
- Provide open and complete access to information
- Empower the working-level staff to resolve as many issues as possible
- Reach decisions by consensus as much as possible and, when consensus is not possible, achieve resolution in a timely manner using an agreed-upon process for resolving disagreements

- Take joint responsibility for consultation with other interested or affected agencies, groups, or individuals
- Take joint responsibility for maintaining and nurturing the partnership relationship.

Building a partnership takes considerable time and effort on the part of all participants. Therefore, you should try to avoid developing partnerships with difficult groups that have a history of conflict with the installation, fail to communicate effectively, set unrealistic goals or deadlines, lack a clear purpose or have a different agenda from you, or would impose unrealistic costs and schedules. Exhibit 6–2 provides additional ideas about choosing and keeping partners.

Partners should be aware of the long time frames of work in natural resources management. Of equal importance is planning enough time to manage your share of the partnership. If you and your staff are overloaded, you may not be an effective partner. Smaller installations with limited staff and resources may get assistance (that is, manpower, equipment, or expertise) from nearby larger installations.

If interest and motivation for forming a partnership are high and if your partners are willing to commit to a lengthy process, the partnership has a good chance of success. Exhibit 6–3 lists characteristics of successful and unsuccessful partnerships.

Your partnerships should include broad memberships. They should draw upon expertise and input from a wide range of individuals and groups who live in and intimately know the resource base. The members of your partnership need not, and indeed most cannot, provide the same level of support. For example, you may consider

Exhibit 6–2. Choosing and Keeping Partners

- **Market the Installation.** Is it the only/best/largest: open space in area? habitat for endangered or endemic species? collection of historic buildings? place for a group to pursue their special interest?
- **Partners Pursuing Their Interests.** If a group enjoys fishing here, ask them to help construct some rearing ponds. If your group has concerns about the use of installation historic buildings, ask them to help restore one of them. If a group opposes the development of open space, ask them to help locate and protect endangered species.
- **Clear Communications.** Do they talk/understand military? Do you talk/understand volunteer partnerships? If you talk process and they talk product, be sure all parties understand how the two must be integrated.
- **The Agreement.** Should the partnership agreement be formal or informal? Two samples of formal agreements are a volunteer agreement and a partnership cost-share agreement. Sample agreements can be obtained in Bishop 1994, Appendix C; http://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Partners/partners.html.
- **Show-and-Tell Sessions.** Once your partnership project is beginning to produce results, give your partners a forum and audience.
- **Be Partners With Your Partners.** Design projects for base personnel and partners to complete by working together.
- **Good Work Deserves Praise.** "Thank you" goes a long way.

Source: S.G. Bishop, 1994.[7]

Exhibit 6–3. Characteristics of Successful and Failed Partnerships	
Successful	***Failed***
• Agreement that a partnership is necessary • Respect and trust between different interests • Leadership of a respected individual or individuals • Commitment of key interests developed through a clear and open process • Development of a shared vision of what might be achieved • Allowing sufficient time to build the partnership • Shared mandates or agendas • Development of compatible ways of working and flexibility • Good communication, perhaps aided by a facilitator • Collaborative decision-making, with a commitment to achieving consensus • Effective organizational management.	• History of conflict among key interests • One partner manipulates or dominates • Lack of clear purpose • Unrealistic goals or deadlines • Differences of philosophy and ways of working • Lack of communication • Unequal and unacceptable balances of power and control • Key interests missing from the partnership • Hidden agendas • Financial and time commitments outweigh potential benefits • Not all participants benefit from the partnership.

using your Headquarters natural resources staff to provide key technical support to a partnership you are developing. You will keep them apprised of how the partnership is developing but you may only request their direct involvement for key issues. The following are some groups and organizations with which you may want to seek a partnering relationship:

- Other DoD groups such as Major Commands; neighboring or other regional installations; Component headquarters natural resources offices; U.S. Army Corps of Engineers laboratories; U.S. Army Corps of Engineers district offices
- Other Federal agencies, such as the U.S. Fish and Wildlife Service, Forest Service, Natural Resources Conservation Service, National Park Service, Bureau of Land Management
- State agencies, such as the State fish and game and natural resources departments, parks and recreation departments, or soil and water conservation agencies, or heritage offices (links to all State heritage Web sites are available at www.natureserve.org/visitLocal/index.jsp)
- City and county planning departments
- Universities, colleges, and local schools
- Conservation groups such as the Sierra Club, The Nature Conservancy, the Association for Biodiversity Information, or individuals
- Outdoor recreational groups, such as Ducks Unlimited or local rod and gun clubs
- On-post residents and local communities.

How to Get Started

The three reports prepared for the Legacy Resource Management Program by Sarah G. Bishop of Partners in Parks are must-reads if you are considering using partners to help with your INRMP implementation. Although somewhat dated and the situations at the respective installations may have evolved, the reports are good examples of establishing partnerships. The reports show how ideas were developed, reviewed, revised, and formed into specific partnership programs targeted to specific groups and for specific purposes. Because each installation has its unique setting and circumstances, partnership programs must be tailored to the installation. However, the models provided in each report can be adapted to achieve your specific goals.

The first report is a comprehensive guide aimed at natural resources management on military installations. The latter two reports focus on programs at specific installations and include tutorials on volunteer partnerships and project selection guides. Items important to the success of the programs at the two installations were an eager and knowledgeable resources manager, a supportive commander, a small resources management staff, and a manager likely to implement a partnership plan once the partnership process was identified. The following sections are summaries of each report and pertinent, excerpted text.

Partners For Research And Resource Management On Military Installations[8]

This comprehensive report, targeted specifically to military installations, shows how to find and use partners to support both natural and cultural resources projects. It gives suggestions of how to initiate a partnership or how to expand an existing one. How to select appropriate activities and how to develop an initial partnership into a long-term relationship are discussed. The bulk of the report deals with the specifics of building partnerships including who may be potential partners, selection guides for partners

and for partnership projects, attracting and keeping partners, and the costs associated with partnerships. Case studies are presented for 10 installations for projects ranging from development of water catchments for desert bighorn sheep, marsh creation and shoreline stabilization, to rehabilitation of historic structures. (Full text of the report is available at http://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Partners/partners.html.)

Examples given for potential natural resources partnership projects include the following.

- Fish and wildlife management
  - Conducting wildlife surveys
  - Long-term monitoring of wildlife and habitat
  - Banding of birds and bats; attaching mammal radio collars
  - Installing wildlife watering ponds, wells, and springs
  - Constructing rearing ponds, spawning reefs, and sediment traps to improve fish production; creating impoundments; and protecting wetlands.
- Outdoor recreation management
  - Conducting interpretive nature discovery walks and auto tours
  - Developing programs to teach young people about the environment
  - Constructing access lanes and trails for public recreation.
- Land management
  - Stabilizing shoreline and streamside areas
  - Installing fences and riprap to reduce erosion and protect terrestrial and aquatic habitats

  - Stabilizing semi-improved and unimproved roads and trails to reduce erosion and sedimentation.

- Vegetation management
  - Planting trees or other vegetation to restore or stabilize an area
  - Improving timber stands (for example, thinning, pruning)
  - Forest inventory and monitoring of native plants, threatened and endangered species, and exotics.

The appendices of the report include a list of basic tenets for successful partnerships (which are summarized in Exhibit 6–4), sample volunteer and partnership cost-share agreements, and relevant legislation. The report was prepared before passage of the Sikes Act Improvement Act (SAIA) of 1997 and therefore does not refer to pertinent amendments to this act. For example, the requirement for matching funds or matching services to be provided under cooperative agreements (CAs) was deleted by the SAIA (see "General DoD Documents" in Chapter 1). This change to the Sikes Act should have the effect of facilitating partnering opportunities when a cooperative agreement is used. (See "Cooperative Agreements" in Chapter 4.)

Toward a Volunteer Research Internship Program at Dare County Air Force Range[9]

The Dare County Air Force Range (AFR), which is located on the Dare County peninsula in North Carolina, presented challenges to establishing a partnership program. It is the 50,000-acre bombing range for Seymour Johnson Air Force Base. With two bombing targets and no residential area, most of the acreage remains in its natural state. There is one natural resources manager and an assistant wildlife biologist. Establishment of a volunteer research internship program was selected as the partnership goal for Dare County AFR. (Full text of the report is available at

Exhibit 6–4. Basic Tenets for Effective Partnerships (page 1)

- Be very specific about the common project to be undertaken. Write everything down; spell everything out in detail. Show a breakdown of budgets in as much detail as possible. Document which parties will be responsible for which tasks in what specific time frames.
- Take what partnerships are available. Build a positive base with people who are going to be in the area for a long time. The best long-lasting partnerships are between long-term groups that exist at the local level.
- Do not take on too many partners at the start of a project. Work on building strong ties with two or three interested people or groups.
- Target key decisionmakers. Find those individuals who have the ability and authority to say “Go.” The larger the organization you attempt to involve or the higher the levels of bureaucracy you attempt to contact, the more difficult the task and the longer it will take to get started.
- React quickly to proposals. To be perceived as a good partner, generally respond in several weeks and mobilize resources to begin the project a few weeks later. Do not expect partners to wait around if it takes you months to make a decision and line up people and funds.
- Once you have a partnership project lined up, approach businesses that might have something to gain by seeing the project completed. Virtually all private businesses are bombarded with requests to support worthy projects but if you really have a good project, it will be recognized.

Exhibit 6–4. Basic Tenets for Effective Partnerships (page 2)

- Select projects that can be completed in a short time: definitely less than 1 year, and preferably in 3 to 6 months. Partners will want to complete the project and begin to reap the rewards quickly.
- Be prepared and committed to supply the key people to reach project completion. Sometimes one partner may not be able to do all the work they intended. While there is a sharing of the labor and costs, there is also an implicit commitment to work hard to make sure the project is completed. Do not expect a partnership to be easier just because other people are involved.
- Complete the project! Your credibility is at stake, particularly if it's your first partnering venture. Do what it takes to get the project done as described and on time. When selecting partners, look for people with past successes. Avoid those with a record of uncompleted work. Good partners will be looking at your record too.
- Find people who are committed to getting the project done. Avoid potential partners who are focused on the funds or materials you can supply or who are more preoccupied with dollars than with the end result.
- Communicate, work hard, help your partners if they need it, do quality work no matter what, have fun, and celebrate when the job is done. Do not be too concerned about which partner contributes how much or who gets the credit. If you have selected good partners, everyone will be contributing all they can. You will all be equally committed and working for a common goal. Commitment and integrity are the key.

Source: S.G. Bishop, 1994.[10]

http://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Success/note4.html.)

The range is heavily wooded, with Atlantic white cedar and pond pine predominant and with areas of pocosin. This ecosystem is characterized by a specific soil type, plant life, and fire regime. The area is one of only a few remaining examples of Atlantic white cedar peat lands. The range is relatively remote and access is through the Alligator River National Wildlife Refuge (NWR) that surrounds the range. The remote location, challenging terrain, and need to have specific knowledge and skills about the natural resources required considerable creative thinking about what kind of people might be attracted to volunteer research opportunities at Dare County AFR. Establishment of a volunteer research internship program seemed to fit the requirements for an installation partnership program.

Having identified a suitable partnership program, the task at hand was to find appropriate private sector groups who could provide skilled and motivated individuals. In this case, academia was the source. The report details how potential universities and colleges were identified and approached about partnering with the installation. Students, to be supervised by university researchers or graduate students, were recruited as prospective volunteer interns. Using information retrieved from the Internet, a searchable database of 47 colleges and universities was developed.

There was no lack of interesting activities at the AFR for interns to participate in and support. Natural resources projects and initiatives at the AFR and the adjacent Alligator River NWR involved restoring the Atlantic white cedar, fire management,

neotropical migratory bird nesting, red-cockaded woodpecker use of the pocosins, reintroduction of the red wolf, and bear population studies. Some of these initiatives had been funded in the past, but managers at both the installation and the refuge had concerns about long-term support. The establishment of the research internship program could support some of these initiatives into the future at little cost.

An installation must construct an attractive partnership program to get the attention of participants and to compete with the many other opportunities available to students and other volunteers. The more amenities one can offer unpaid interns, the better. In the case of Dare County AFR, it was felt that a food stipend and a schedule flexible enough to allow interns to have a part-time job were highly desirable. The AFR is not too far from a resort area that could support part-time employees. The proximity of the resort area, however, means that housing costs are high during the summer. Providing suitable temporary housing was identified early on as essential for the success of the internship program. This issue was resolved by working with the Alligator River NWR, which was able to provide interim temporary housing.

After careful planning and consideration of many issues, Dare County AFR initiated a jointly sponsored research internship with Alligator River NWR. The AFR benefits from the refuge's ongoing programs and expertise. Participants in the program were to work on projects at both the refuge and the installation. The exposure to different projects would give them a broader range of experience.

The Dare County AFR report also addresses how to expand the program and organize it for subsequent years. Partnerships are a means to providing specific assistance in

the short term but they need to be nurtured and maintained in order to develop into long-term relationships. Initially, the natural resources manager will need to put a lot of thought, planning and supervision into getting a partnership established. However, successful and enduring partnerships will become more self-sufficient and require less direct input from the natural resources manager.

Although affiliation with NWR gave Dare a source of interns, the program was not self-sustaining for Dare. At NWR, the interns were supervised and assisted in a range of specific maintenance-related tasks. But at Dare, this type of work was not feasible or needed. After a brief interim, Dare is reestablishing the research internship, this time identifying true research interns who can work independently on projects that will help Dare directly. For example, it is hoped that the first research intern to be retained will continue Dare's work on Atlantic white cedar research.

Toward a Resources Management Volunteer Partnership Program at Little Rock Air Force Base[11]

The Little Rock Air Force Base (AFB) in Arkansas is very different from Dare County AFR and presented different challenges to establishing a partnership. It is a 6,123-acre installation with one resources manager responsible for both natural and cultural resources management programs. In developing the INRMP for the installation, the resources manager examined what aspects of INRMP implementation or specific projects could benefit from the involvement of volunteers. However, access to the base may prove difficult for volunteers. The base is closed to the general public except on special occasions. Nonbase residents and employees must have a sponsor to enter the base and in some instances require an escort to supervise particular activities. The recreational resources on base are limited and are normally available only to base residents, employees and their dependents, military retirees and their guests. (Full

text of the report is available at http://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Success/note5.html.)

The partnership planning process described in the Little Rock AFB report demonstrates the need to fully assess and analyze several options. If one approach does not work, then change strategies to accommodate the issues. As part of the partnership planning process at Little Rock, a short list of projects was identified. It was soon realized, however, that even a short list of seven projects would be overwhelming for one resources manager to undertake. It was then decided to establish a "Friends" on-base partnership group. Starting with a few base employees and residents, the resources manager could find some common interests and get them started on a single project. The intention was to get this group established and help them accomplish objectives. The next step would be to encourage them to find more participants and to assume responsibility for new projects. Eventually, the group would extend beyond the base community into the local community where individuals with specific areas of expertise may apply them to projects.

At most installations, a good place to look for potential on-base volunteers is the Family Support Center. These centers typically have a volunteer coordinator whose job includes finding opportunities for base residents to learn new skills, renew old skills, or keep up with current interests. At Little Rock the partnership opportunities were further refined by linking potential projects to outdoor recreation and gaining the support of a second on-base group, the Morale, Welfare and Recreation (MWR) office. Final recommendations in the Little Rock report included hiring an intern to get the partnership started and working with the Public Affairs Office (PAO) to promote

the program both on and off the base. Staff support could also be obtained through the base volunteer coordinator.

In addition to some of the same appendices in the Dare County AFR report, the Little Rock AFB partnership report includes an appendix that lists various ongoing volunteer partnership programs at installations throughout the country.

Using Memorandums of Understanding and Agreement

Nationally significant and renowned programs such as the Chesapeake Bay Program, Partners in Flight, and the Mojave Desert Ecosystem Initiative have DoD as a partner alongside other Federal, State, and nonprofit groups. Individual installations have also established many partnerships at a local level, predominantly with other Federal agencies. Many of these partnerships developed from existing memorandums of understanding (MOUs) or memorandums of agreement (MOAs) that have been established at the national level.

In the past, these MOUs and MOAs were intended to be programmatic and were directed at providing general guidance for coordination between DoD and a Federal agency on coordination and cooperation. However, existing MOUs and MOAs can be of direct assistance to the natural resources manager (NRM) when trying to establish partnerships. These MOUs and MOAs identify existing partners. At a local level, they may just need to be activated by introducing an appropriate project or initiative to the partnering agency where they can provide their expertise and support.

MOUs and MOAs are a form of written agreement created between partners. The documents typically describe how the partners intend to cooperate and participate in the underlying activities. Exhibit 6-5 lists some of the current master agreements between DoD and various groups and agencies. Some of the memorandums serve as umbrella documents identifying mutual conservation objectives and authorize execution of CAs (see Chapter 4) for specific support to attain these objectives.

Reference Notes

1. Bishop, Sarah G. 1994. *Partners for Research and Resource Management on Military Installations.* Prepared for the Department of Defense Legacy Resource Management Program through the National Park Service Cooperative Agreement CA 0022 9 8001 with Partners in Parks. The full report is available at http://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Partners/partners.html.
2. Partners in Parks. 1996. *Toward a Volunteer Research Internship Program at Dare County Air Force Range*. Prepared for the Department of Defense Legacy Resource Management Program through Cooperative Agreement DACA87-95-H-0006 with the U.S. Army Corps of Engineers. The full report is available at http://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Success/note4.html.
3. Partners in Parks. 1996. *Toward a Resources Management Volunteer Partnership Program at Little Rock Air Force Base.* Prepared for the Department of Defense Legacy Resource Management Program through Cooperative Agreement DACA87-95-H-0006 with the U.S. Army Corps of Engineers. The full report is available at http://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Success/note5.html.

Exhibit 6–5. Master List of Agreements (page 1)

Description	*Participants*	*POC for DoD*	*Effective Dates*
MOU for technical assistance and for cooperative development of selected wetlands	DoD, Ducks Unlimited	OSDUSD(IE) Peter Boice Conservation Team Leader Peter.Boice@osd.mil	1998–2008
MOU (Amendment 00-2) for establishing the Cooperative Ecosystem Studies Units Network (CESU)	DoD, Fish and Wildlife Service, Bureau of Land Management, Bureau of Reclamation, U.S. Geological Survey, National Park Service	OSDUSD(IE) Peter Boice Conservation Team Leader Peter.Boice@osd.mil	1999–2005; extended to 2010
CA for natural resources management, monitoring, heritage resources, and geographic information systems support	DoD, The Nature Conservancy	OSDUSD(IE) Peter Boice Conservation Team Leader Peter.Boice@osd.mil	1995–2000; extended to 2010
MOU for natural resources management, especially forest management on Army installations	U.S. Army Enivronmental Center, USDA Forest Service	USAEC Helene Cleveland 410-436-1558 helene.cleveland@aec.apgea.army.mil	2001–2004; in process of being renewed for 2004–2009

Exhibit 6–5. Master List of Agreements (page 2)			
Description	***Participants***	***POC for DoD***	***Effective Dates***
MOA to create the Federal Neotropical Migratory Bird Conservation Committee (now the Partners in Flight Federal Agency Committee) and implement programs for conservation; now known as Partners in Flight	Departments of the Navy, Air Force, and Army; Fish and Wildlife Service; USDA Forest Service; Bureau of Land Management; National Park Service; Agency for International Development; Environmental Protection Agency	Department of the Navy Joe Hautzenroder Director, Natural Resources (202) 685-9331	Effective from 1991 as long as at least two Federal bodies remain signatory; amended 1992
MOU to create a committee to implement native plant conservation and establish programs	DoD, Bureau of Land Management, National Biological Survey, National Park Service, USDA Agricultural Research Services, USDA Forest Service, USDA Soil Conservation Service, Fish and Wildlife Service	Lt. Col. Alan Holck Natural Resources Mgr. HQ AF/ILEVQ Alan.Holck@pentagon.af.mil 703-604-0632	1994
MOU for the Watchable Wildlife Program	Departments of the Air Force, Army, and Navy; Defenders of Wildlife; The Izaak Walton League; National Audubon Society; National Wildlife Federation; American Birding Association; Ducks Unlimited; The Humane Society; National Fish and Wildlife Foundation; Wildlife Forever; Bureau of Land Management; National Park Service; Fish and Wildlife Service; Bureau of Land Reclamation; USDA Forest Service; International Association of Fish and Wildlife Agencies	Department of the Air Force Lt. Col. Alan Holck Natural Resources Mgr. HQ AF/ILEVQ Alan.Holck@pentagon.af.mil 703-604-0632 Department of the Navy Joe Hautzenroder Dir., Natural Resources (202) 685-9331	1990–1995, amended 1995, ongoing Re-signed in 1997 and updated in 2002

Exhibit 6–5. Master List of Agreements (page 3)

Description	*Participants*	*POC for DoD*	*Effective Dates*
Master agreement establishing the standards for the use of national forest lands for military activity	DoD; Department of Agriculture	OSDUSD(IE) Peter Boice Conservation Team Leader Peter.Boice@osd.mil	1988, ongoing
CA to facilitate the implementation of the DoD's conservation effort and to provide effective and efficient protection and management of biodiversity	DoD; Association for Biodiversity Information	OSDUSD(IE) Peter Boice Conservation Team Leader Peter.Boice@osd.mil	2000–2005
MOU among Federal agencies responsible for data on the status of sustainable forest management in the United States	Department of Agriculture, USDA Forest Service, National Agricultural Statistics Service, Natural Resources Conservation Service, DoD, Bureau of Indian Affairs, Bureau of Land Management, National Park Service, U.S. Geological Survey	ODUSD(ES) Bruce Beard (703) 604-0521 Bruce.Beard@osd.mil	2000–2003
MOA for the conduct of insect and disease suppression on DoD lands	DoD, USDA Forest Service	Pete Egan Armed Forces Pest Management Board (301) 295-8304 Peter.Egan@osd.mil	1990, ongoing

Exhibit 6–5. Master List of Agreements (page 4)			
Description	***Participants***	***POC for DoD***	***Effective Dates***
MOU for the conservation and management of fish and wildlife resources on military installations	DoD; Department of the Interior	OSDUSD(IE) Peter Boice Conservation Team Leader Peter.Boice@osd.mil	1978, ongoing
MOU for the conservation of forests, vegetative cover, soil, and water on lands	DoD; Department of Agriculture	OSDUSD(IE) Peter Boice Conservation Team Leader Peter.Boice@osd.mil	1963, ongoing

4. See Note 1 above.
5. See Note 1 above.
6. *Partnering Guide for Environmental Missions of the Air Force, Army, Navy.* 1996. Prepared by a Tri-Service Committee and available at http://www.hq.usace.army.mil/cemp/c/partner.htm.
7. See Note 1 above.
8. See Note 1 above.
9. See Note 1 above.
10. See Note 2 above.
11. See Note 2 above.

Chapter 7
Outreach, Education, and Training

The Social Components of INRMP Implementation

There are not only administrative and technical components to successfully implementing an INRMP. You should also be aware that there is a strong social component. Understanding outreach, education, and training needs will help you meet the goals of the installation INRMP.

What Is Outreach?

Outreach means different things to different people: public affairs, public relations, public involvement, or public participation. Whatever you call it, public outreach is an organized effort to communicate with members of the public or with specific groups. To the natural resources manager (NRM), outreach is the means through which you inform the public or specific groups about your natural resources program and the INRMP.

Involving local communities and interested stakeholders can increase public understanding, reduce misinformation and speculation, and generate support for the installation's natural resources program. A successful outreach effort also builds support for the installation as a whole. Exhibit 7–1 describes an example of a successful public outreach program.

Exhibit 7–1. Public Education and Outreach at Fort Belvoir, VA

In 2000, Fort Belvoir opened the Accotink Bay Wildlife Refuge Environmental Education Center as a part of its active education and outreach program. There are more than 1,782 acres of wildlife refuge and wetland refuge area at the installation. The refuges were established to preserve and protect sensitive habitats and to provide opportunities for environmental education and low-intensity recreation.

When compatible with management objectives, the refuges are used as outdoor classrooms for education programs run by the installation and by off-post organizations. Interpretative walks, natural resource exhibits, brochures, and videos are available at the Education Center. Military personnel and their families, school and scout groups, and the general public make use of the Education Center and refuges.

Fort Belvoir has been successful in supporting several natural resources–related projects through its public involvement and partnering efforts. Projects have included building and installing turtle platforms and bluebird, owl, and kestrel nest boxes and constructing footbridges and other structures throughout the refuges.

The goal of an outreach program should be to establish acceptance and build public trust in the installation's program among members of the community. Typically, public involvement has the following components:

- Collecting input from stakeholders. What are their concerns, expectations, and interests?

- Using that input to inform policy or actions that affect stakeholders. Can their concerns be addressed while still meeting the primary mission of the INRMP?
- Disseminating information back to public stakeholders as actions are taken or as determinations are made. Have the reasons behind actions or determinations, both favorable and unfavorable to the stakeholders, been communicated?

Your Outreach Strategy

The two key components to any outreach strategy are—

- Determine who is your public (*to whom* do you want to communicate?)
- Establish the message (*what* do you want to communicate?).

Determine Who Is Your Public

As the NRM, you may wish to use a broad-based outreach strategy, targeting as many people as possible with your message. Alternatively, you might tailor the message to key groups or individuals within the larger community. You should remember to include both internal (on-installation) and external (off-installation) publics.

Be careful not to consider the public as a single unit. The interests, concerns, and expectations among internal (on-installation) and external (off-installation) stakeholders may be very different. Parents of local schoolchildren and local business owners (external) or the provost marshal and a public affairs officer (internal) may all have different interests in the installation natural resources program.

On-post outreach efforts should, at a minimum, target installation offices or groups that you have identified has having some level of responsibility for INRMP implementation (refer to chapter 2). Other installation groups may include tenant organizations, family

housing, community centers, morale and welfare (recreation), or on-post schools. In addition, many military installations sustain nearby communities. Your message should reach community leaders, residents, and others who are affected by or need to know about the installation's natural resources program.

Include installation command as one of the publics to whom you are communicating. Command leadership can become an ambassador for the natural resources program and may be among the most important assets to a successful public outreach program. The natural resources program often has projects that are of interest to and captivate the public, and this results in good publicity for the overall installation mission. Apart from getting deserved credit for such projects, the NRM can benefit from the commander's better understanding of the broad key support role of the natural resources program.

If possible, informally canvass the different groups of stakeholders. Get to know them and develop a relationship, preferably *before* a key issue or crisis develops. Familiarity with the stakeholders and their interests will help you to craft messages that resonate for different audiences.

Establish the Message

Public outreach programs are rarely able to avail themselves of sophisticated communications strategies. However, relying on a short, simple message is key to creating an effective communications strategy. This does not mean that stakeholder concerns are not addressed. It means that you create a message that directly and simply addresses stakeholder concerns.

Once this message (preferably one sentence consisting of fewer than 12 words) is established, make it the theme of all communications. In other words, establish a message and do not vary it. If necessary, employ statements of fact, scientific support, or corroborating authorities to support the message, but do not change the message.

Communicating Your Message

As a NRM, ask yourself these questions to help you select appropriate communication methods for your target audience:

- What is the best way to inform the target publics?
- What media can I easily access to help reinforce the public involvement process?
- Is the public outreach message simple and clear enough that it can be easily adapted to different media or venues?

Exhibit 7–2 gives examples of the types of outreach media. There is no such thing as a one-size-fits-all medium. Each medium has advantages and disadvantages. Whichever method is chosen, all communication should be tailored to carry the message effectively to the target audience. For example, are you aiming a brochure discussing invasive species control at installation family housing and tenant groups or at adjacent private landowners, installation neighbors, and adjacent communities? Depending on the issues surrounding INRMP implementation, the NRM should use a combination of media.

It is always a good idea to publish notice of any planned significant public involvement efforts in daily and community newspapers. This should include a schedule of public involvement activities and some explanation on how the public's input is to be used

Exhibit 7–2. Outreach Media Tools

Below are listed some examples of the various types of media. Do not stop at the examples listed; be creative in reaching out to the community.

It is important to distinguish between free media and paid media. Most NRMs do not have access to a budget that will pay for high-profile, professionally designed advertising. A local television news spot, covering your installation's Public Lands Day, is one way to reach that audience at no cost. While not free, some media, such as workshops, are low cost and effective. Use judgment when selecting a medium: how do you reach the target audience most effectively for the lowest cost?

- **Audio and Visual Media** (displays, radio and television interviews, posters, videos, radio and television public service announcements, and CDs). This type of media often reaches a more general, broad audience than does print media. Well-designed visual messages can be very powerful.
- **Print Media** (community or club newsletters, news releases, newspaper articles, brochures, and fact sheets). A specific audience can be targeted with print media, by either seeking out a media outlet that caters to a specific interest group (the newsletter for a local birdwatching club) or by distributing the print media to a targeted group (sending a fact sheet to every house in a neighborhood). Print media can also carry a lot of detailed information, making it a good way to inform the public of activities, schedules, or detailed plans.
- **Interactive Media** (Web sites, telephone hotlines, workshops, seminars, festival booths, speakers, focus groups, roundtable discussions, community meetings, site visits, and neighborhood canvassing and interviews). In addition being able to communicate the message, interactive media offer the opportunity to listen to the stakeholders' concerns and respond instantly to requests for more information or clarifications. Interactive communication — through frequently updated Web sites, informative brochures that invite feedback, and staffed hotlines for questions and comments — send a signal that the NRM seeks community input and approval to carry out objectives.

in the decision-making process. See the section on National Environmental Policy Act and Public Participation in this chapter for more information on formal, structured communication with the public.

The Internet is a tool that combines many of the features of more traditional media. The Internet can carry great amounts of text (news releases, fact sheets) or audio and visual information (bird songs, video of Earth Day activities). The message can be broadcast (posted as part of the installation's Web page) or narrowcast (offer a link to descriptive text and photos of installation wildlife to a local conservation club's Web site).

When developing or updating a Web site for the natural resources program, keep in mind how broad the viewing public may be. While the target audience may be in the immediate vicinity of the installation, there may be a national or even international public taking interest. Even though this is not the target audience, take advantage of the opportunity to interact positively with the public and to showcase the stewardship efforts being made on installation lands.

Finding and Nurturing Volunteers

Another way to spread the message concerning the installation's natural resources program is to recruit volunteers for various projects. In addition to the projects that the volunteers accomplish (for example, maintaining a walking trail or installing nest boxes), their work may serve several communication purposes:

- The volunteers themselves become educated about the installation's natural resources programs and its goals. For example, a group of hunting enthusiasts

learn about the need for habitat restoration by assisting in restoration efforts at the installation.

- By sharing their experiences, the volunteers may educate others about the natural resources programs of the installation. For example, schoolchildren who have helped to install a garden of native plants tell their friends and parents about it.
- Media coverage of the event provides free, favorable coverage about the installation's natural resources program. For example, coverage of the local 4-H club's assistance in installation Earth Day activities provides publicity for both the installation and the club.
- In some cases, the volunteer assistance may be targeted specifically at communication activities. For example, a local high school computer club creates a volunteer database, or the journalism class designs a natural resources newsletter and writes the articles.

Contacting a specific group is often a good way to introduce yourself to potential volunteers. Consider scouting groups, 4-H clubs, youth organizations, hunting clubs, bird-watching groups, recreational clubs, and military spouses. When approaching specific groups as potential volunteers, consider involving them in short-term projects or activities that are in some way related to the groups' interests (for example, ask a bird-watching group to assist in building and installing nesting boxes). Another way to maintain close ties with a group is to develop a regular schedule of activities (for example, arrange with a local computer class to regularly update the installation's natural resources Web page, or ask a Girl Scout troop to assist in semiannual trail cleanups).

Use every available opportunity to canvass for volunteers. Even if no specific projects need immediate volunteer assistance, consider developing a volunteer list that specifies the interests and skills of the volunteers. Take advantage of special events that the installation or local communities hold and have a display booth on the installation's natural resources program. Always include a sign-up sheet for volunteers. Establish a volunteer registration Web page on the installation's Web site.

There may be liability issues to consider before planning to involve volunteers in an installation project (see Exhibit 7–3). Also, decide how volunteers will be acknowledged and thanked for their assistance. One simple way is to develop a certificate of appreciation signed by the NRM and the installation commander and awarded to the volunteer. Take advantage of regularly planned installation events (Earth Day, an installation open house, National Public Lands Day, Summer Fest) to hold an awards ceremony to acknowledge the volunteers and their support for the natural resources program throughout the year. Request the Public Affairs Office to prepare a news release acknowledging the volunteers and to cover any awards ceremony. However you decide to say it, remember that showing appreciation for their efforts is vital to maintaining good relationships with your volunteers.

National Environmental Policy Act and Public Participation

With the passage of the Sikes Act Improvement Act in 1997 came the requirement that installations must provide "an opportunity for the submissions of public comments"[1] for all new INRMPs. Public comment on an installation's initial INRMP is usually addressed through an accompanying environmental assessment conducted under the National Environmental Policy Act (NEPA) (see Exhibit 5–1, chapter 5). NEPA provides a structured means of involving the public in a particular issue when input

Exhibit 7–3. Volunteers and Liability Issues

Using volunteers can provide many benefits, but before you involve any volunteers in an installation project, you **must** resolve issues related to potential liability, property damage, and accidents. Review your installation's policy concerning volunteer support, and consult the installation's legal counsel. Liability issues must be addressed and resolved in any negotiations with potential volunteer groups or individuals.

Initially, potential liability issues may not be easily resolved, and you may encounter resistance from installation groups, but it is well worth the NRM's efforts to establish a volunteer program. Many installations have been using volunteer assistance successfully for years. In most cases, the need to address potential liabilities is now routine and is not an impediment to finding and sustaining volunteer support.

from stakeholders is needed for decision-making. The public participation components of a NEPA assessment can be used to help with your public involvement efforts even if your service does not require NEPA assessment for an INRMP update.

First, consider whether there is sufficient interest in the local community to warrant the use of such a structured public involvement approach. During the development of their INRMPs, many installations had the regular involvement of interested stakeholders through formal policy development, technical, and planning committees. However, once INRMPs were completed, there was little interest from stakeholders to

remain involved, and most of these stakeholder groups disbanded after the successful completion of the INRMP.

If components of INRMP implementation will involve some intensive new management actions (for example, initiating a prescribed burn program or aggressive invasive species control), then the more formal NEPA–type approach to public involvement may be appropriate. An advantage of following a NEPA model for some areas of a public outreach program is that most installation groups (for example, the environmental office or the Public Affairs Office) are familiar with NEPA and will understand the program's objectives, as well as their potential roles.

There is a wealth of NEPA information available on public participation. The Council for Environmental Quality (http://ceq.eh.doe.gov/nepa/nepanet.htm) and the individual military services' NEPA guidance address public participation. The National Association of Environmental Professionals (NAEP) is a nonprofit organization that offers guidance and training to environmental managers. NAEP has a NEPA Working Group that has provided workshops on public scoping. Contact NAEP at http://www.naep.org/NEPAWG/NEPAWG.html.

The NEPA public involvement typically includes dissemination of information through news releases, announcements to local citizens groups, and commanders' letters. Public scoping meetings, workshops, and focus groups are often held to solicit public review and feedback. The NEPA model stresses conducting a dialogue with the public, assimilating their views, providing the public with access to decisionmakers, and demonstrating that decisionmakers have considered public preferences.

If the installation INRMP did not receive substantial community review and comment, you may want to use the NEPA public scoping process for the next INRMP update. Although you probably will not be required to conduct another environmental assessment, the well-ordered system of public scoping under NEPA will be a good way to involve the public. Alternately, you may want to hold a public meeting or an open house to launch your INRMP or to inform the public of updates. (These events could be combined with annual Earth Day activities.)

Outreach Information Sources

Several professional organizations provide training, information, and other resources useful to the NRM. These organizations promote the values and best practices for involving the public in government decisions that affect them. Many offer conferences and workshops, how-to manuals, case studies, professional networking opportunities, and hotlines. Some, such as the Public Relations Society of America, offer section memberships for environmental professionals.

- **Defense Information School's Public Affairs and Journalism Directorate**
  Fort Meade, MD
  301-677-4390
  http://www.dinfos.osd.mil/Journalism.asp
- **International Association for Public Participation**
  Denver, CO
  800-644-4273
  http://www.iap2.org
- **Public Affairs Council**
  Washington, DC
  202-419-0412
  http://www.pac.org
- **Public Relations Society of America**
  New York, NY
  212-406-1400
  http://www.prsa.org

Contact these environmental education organizations for more information on environmental education and outreach.

- **The North American Association for Environmental Education**
  Washington, DC
  202-884-8912
  http://www.naaee.org
- **EELink,** a project of the North American Association of Environmental Education
  http://eelink.net
- **Project Learning Tree**
  Washington, DC
  202-463-2462
  http://www.plt.org
- **Project WET**
  Bozeman, MT
  406-994-5392
  http://www.projectwet.org
- **Project WILD**
  Bel Air, MD
  410-836-4573
  http://www.projectwild.org
- **Canon Envirothon**
  League City, TX
  800-825-5547
  http://www.envirothon.org
- **National Environmental Education and Training Foundation**
  Washington, DC
  202-833-2933
  http://www.neetf.org

Hands-On Participation in Outreach Activities

Getting involved in a national environmental education program with a local emphasis is an excellent way for the NRM to learn more about outreach. NRMs may find the best way to learn how to stage a successful event that involves the public is to seek

out an organization with a well-established support framework and join one of their ongoing environmental education projects. For example, the National Environmental Education and Training Foundation coordinates outreach efforts for National Public Lands Day each year. Resource managers from public and private agencies are involved in this event.

NRMs who organize local events for national programs obtain hands-on experience in event planning, promotion, and logistics. They learn the best methods of organizing volunteers, attracting favorable media attention, and responding to questions from the public.

Participating in a local environmental education event can help the installation even more when the NRM establishes other partnerships with local agencies that have environmental education goals. Consider involving local governments, Boys and Girls Clubs, or parks and recreation departments to increase the benefits of an outreach effort. The participation may range from granting access to those groups to picnic, camping, or other recreational areas to working with the groups on conservation projects. Projects can include the installation and maintenance of duck boxes, planting seedling trees, and erecting watershed protection signs. See Chapter 6 for more information on partnering.

Professional Education and Training

One of the main goals of your outreach efforts is to educate the public about the installation's stewardship of national lands. Equally important to the natural resources program is your own continuing education and that of your support staff. A staff that

has confidence in its management decisions and that is knowledgeable about current natural resources practice is more likely to succeed in INRMP implementation.

In addition to being qualified professionals in their respective natural resources fields, NRMs must be creative thinkers, thorough planners, concise writers, effective speakers, and tireless promoters. NRMs are consensus builders, team leaders, and event planners. They work to build support from installation commanders, outside organizations, and local citizens. Few NRMs come to their positions equipped with all the education and training they need to handle every aspect the job demands.

Besides ensuring that their professional knowledge stays current, continuing education and training opportunities also keep staff challenged and interested in their jobs and provide opportunities for personal and professional advancement. Exhibit 7–4 provides an example of an installation's professional training program.

One of the easiest ways to obtain further education is by participating in professional conferences and peer organizations. Active participation is key. Volunteer to give a presentation at a conference or meeting. Although presentations are a lot of work, they are very rewarding, both personally and for the installation. Presentations help to inform others of your achievement and identify others working on similar projects.

Training sessions and workshops are usually held concurrently with conferences. Details of these workshops may not be known until close to the meeting date. Plan ahead to get the appropriate approvals in place and make the necessary arrangements. Be selective in choosing which conferences to attend because time and funding are

Exhibit 7–4. Fort Stewart, GA, a Model Installation for Employee Training

Fort Stewart's Forestry Branch of the Natural Resources Division does an excellent job of providing training for new employees. Tom Hilliard, Chief Forester, has implemented a thorough training program for his forestry staff. Training includes courses in Forestry Communications, EOD, ICS, CPR, Basic First Aid, Firefighter Training, Fire Behavior, Fireshelter Training, Equipment and Air Operations, Maps and Compass Reading, Sexual Harassment, and Consideration of Others.

The training at Fort Stewart furthers the skills and knowledge of the forestry staff. Education and training improves management and helps to facilitate successful INRMP implementation. These courses promote a safe and stable working environment. The installation, as a whole, benefits from the training opportunities provided to Fort Stewart's forestry staff. Fort Stewart is a model installation for employee training and education.

often limited. Some training courses offer credits and certificates for participation (for example, the National Military Fish and Wildlife Association annual workshop, http://www.nmfwa.org).

Training for the Natural Resources Manager

The following list includes opportunities for Natural Resources Managers to gain additional education and training.

- **Army 101.** The course provides a solid orientation to the Army's structure and mission, combined with the technical implementation aspects of the Army's

environmental programs (POC: Joanne Rasnake, AEC, at joanne.rasnake@apg.amedd.army.mil).

- **Compendium of Conservation Tools.** Provides natural resource managers with practical information on specific stewardship techniques: biological inventory/monitoring, fire management, geographic information systems, education and recreation. http://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Biodiversity/eight.html.
- **Defense Information School.** The Defense Information School provides entry-level and advanced training in public affairs, journalism, photojournalism, broadcasting, graphics, electronic imaging, broadcast systems maintenance, video production, and visual information management. Instruction is provided to officers, enlisted personnel, and civilian employees of all branches of the armed forces to prepare them for worldwide assignments within the Department of Defense. http://www.dinfos.osd.mil.
- **Environmental Compliance and Protection Manual, Chapter 5, Environmental Training and Education.** Establishes Marine Corps policy and responsibilities to ensure compliance with mandated environmental training requirements and Marine Corps policies and standards for developing and managing environmental training instruction. http://www.denix.osd.mil/denix/Public/Policy/Marine/5090.2A/ch5.html.
- **Environmental Protection Agency Grant-Writing Tutorial.** http://www.epa.gov/grtlakes/seahome/grants.html.

- **Environmental Protection Agency Inventory of Watershed Training Courses.** http://www.epa.gov/owow/watershed/wacademy/training/wa2000.html.
- **Environmental Protection Agency Watershed Training Brochure.** The brochure includes descriptions of the Watershed Academy's training courses, publications, watershed management facilitation services, and Web-based training, as well as other Environmental Protection Agency (EPA) training courses and educational materials. Access the new EPA Watershed Training Opportunities online at http://www.epa.gov/watertrain.
- **Federal Law Enforcement Training Center.** Provides law enforcement training to law enforcement professionals. For more information, see the section in this chapter on Training for Natural Resources Law Enforcement and Exhibit 7–6. http://www.fletc.gov/osl/advance.htm.
- **Interservice Environmental Education Review Board.** The Interservice Environmental Education Review Board (ISEERB) is a board that reviews and approves environmental education and training courses. The following Web site contains a list of ISEERB-approved DoD courses. http://cess.afit.af.mil.ISEERB.cfm.
- **Natural Resources Research Information Pages.** The Natural Resources Research Information Pages are intended to be an Internet resource guide for researchers, practitioners, and students in the natural resources field. http://www4.ncsu.edu/~leung/nrrips.html.

- **U.S. Air Force School of Aerospace Medicine.** Offers environmental education short courses to DoD personnel. http://www.denix.osd.mil/denix/Public/Library/PRO97/usafsam.html.
- **U.S. Air Force Training Courses.** Provides training on hazardous materials, train the trainer, air quality management, environmental compliance assessment, pollution prevention program, operations and management, and HAZWOPER for uncontrolled hazardous waste site workers. http://www.hnd.usace.army.mil/earc/iseerb/Iseerb.htm.
- **U.S. Army Regional Environmental Offices.** http://aec.army.mil/usaec/reo/index.html.
- **U.S. Department of Agriculture Forest Service Continuing Education for Natural Resource Professionals.** http://www.fs.fed.us/biology/education.
- **Wildland Fire Training.** Enables access to local area, geographic area, national, and other related interagency wildland fire training information. Also provides current training news and a comment section. http://www.nps.gov/fire/developmental/dev_training_firemgttraining.html.

Specialized Training Centers

There are several specialized training centers that provide continuing education opportunities to Federal land managers, including installation NRMs.

- **Civil Engineer Corps Officer School, U.S. Navy.** The mission of the Civil Engineer Corps Officer School (CECOS) is to provide quality instruction in all facets of facilities planning, acquisition, public works, Seabee readiness, and

environmental awareness. NRMs from the Navy, Marine Corps, and Air Force attend courses at CECOS. https://www.cecos.navy.mil.

- **Comprehensive Environmental Training and Education Program, U.S. Marine Corps.** The goal of the Comprehensive Environmental Training and Education Program is to ensure that appropriate environmental instruction and information are provided Service-wide. http://www.denix.osd.mil/denix/Public/News/Marines/CETEP/usmc-cetep.html.
- **U.S. Air Force Institute of Technology.** The Air Force Institute of Technology provides graduate and continuing education in the areas of environmental management and engineering. http://www.afit.edu.
- **U.S. Army Logistics Management College.** The Army Logistics Management College provides training in acquisition, logistics, and environmental management. http://www.almc.army.mil.
- **National Conservation Training Center, U.S. Fish and Wildlife Service.** The National Conservation Training Center (NCTC), located in Shepherdstown, West Virginia, trains and educates natural resource managers to conserve fish, wildlife, plants, and their habitats. NCTC is a gathering place where conservation professionals from all sectors can learn new skills, share perspectives, break down barriers, establish networks, find common ground, and move toward field-based solutions built on consensus and mutual interest. Course topics range from habitat conservation planning to environmental negotiation to building community support for natural resources programs. http://training.fws.gov.

- **Bureau of Land Management National Training Center.** The Bureau of Land Management National Training Center (NTC), located in Phoenix, Arizona, offers over 200 courses annually. Courses are available to employees of State and Federal agencies. Directors and program managers of NTC work collaboratively with U.S. Fish and Wildlife Service and National Park Service personnel to develop courses that are applicable across agency lines. http://www.ntc.blm.gov.
- **Distance Learning Program, U.S. Department of Agriculture Forest Service.** The Distance Learning Program (DLP) offers correspondence courses through the Internet for Forest Service employees and other public land managers. DLP is administered jointly by the Forest Service and Virginia Tech. All courses are designed to give public land managers the latest information on philosophy, theory, law, regulation, policy, and research results and findings to increase and maintain professional competencies. http://cnr.iddl.vt.edu.
- **Horace Albright Training Center and Stephen T. Mather Training Center, National Park Service.** The National Park Service training facilities provide a broad spectrum of programs. These training centers offer courses on a wide range of topics including natural resources management, monitoring, NEPA, environmental laws and policy, administration, and maintenance. Most of the courses are open to all Federal employees. http://www.nps.gov/training/hoal.htm or http://www.nps.gov/training.stma.htm.

Some colleges and universities also offer a variety of courses in environmental studies, natural resources management, and technical training. Contact your local college or university registrar's office for details on available courses, schedules, admissions, and costs. This information is also available on the university's Web page.

Many environmental organizations offer NRMs specialized guidance and support. The following organizations provide training, certifications, workshops, and conferences to environmental managers. Many of these organizations provide networking opportunities for environmental professionals.

- **Institute of Professional Environmental Practice**
  Pittsburgh, PA
  412-396-1703
  http://www.ipep.org
- **The Ecological Society of America**
  Washington, DC
  202-833-8773
  http://www.esa.org
- **National Association of Environmental Professionals**
  Bowie, MD
  888-251-9902 or 301-860-1140
  http://www.naep.org
- **National Association of Local Government Environmental Professionals**
  Washington, DC
  202-638-6254
  http://www.nalgep.org
- **National Military Fish and Wildlife Association**
  http://www.nmfwa.org
- **Society of American Foresters**
  Bethesda, MD
  301-897-8720
  http://www.safnet.org
- **Society for Ecological Restoration International**
  Tuscon, AZ
  520-622-5485
  http://www.ser.org

Training for Natural Resources Law Enforcement

Standardized training requirements for natural and cultural resources law enforcement are currently being developed by DoD as part of a comprehensive Conservation Law Enforcement Program (CLEP), which will standardize natural and cultural resources law enforcement across the Services. The U.S. Air Force, funded by the Legacy Resource Management Program, is the lead agency and is developing the CLEP using a multi-Service team. For information, contact Stan Rogers, Headquarters, Air Force Space Command, Peterson Air Force Base, CO; 719-554-9915; e-mail: Stanley.Rogers@PETERSON.af.mil.

Much of the DoD program under development is based on the CLEP developed by the Marine Corps and presented in Marine Corps Order (MCO) 5090.4, 6 October 2003 (http://www.usmc.mil/directiv.nsf/mco?openview&count=5000&start=1). For information on MCO 5090.4, contact Heidi Hirsh, Headquarters, U.S. Marine Corps, Arlington, VA; 703-695-3339; e-mail: HirshH@hqmc.usmc.mil.

The goal of the CLEP training initiative is to standardize the education, training, and qualification requirements among the services. The CLEP includes all facets of natural and cultural resources law enforcement: authorities and powers, roles and responsibilities, credentials and training, uniform and equipment, use of force, and reporting. As CLEP specifically relates to training, the multi-Service team is establishing the minimum education and training requirements for conservation officers, special agents, supervisors, and CLEP program managers; establishing minimum qualification requirements for the use of lethal and nonlethal weapons; and establishing minimum natural and cultural resources coursework for continuing

education and awareness. Some of the training requirements currently being considered include the following FLETC courses (www.fletc.gov/osl/advance.htm):

- Seventeen weeks of Natural Resources Police Training (NRPT)
- Six weeks advanced Criminal Investigation Training Program (CITP)
- Advanced training such as ARPA and arson.

The specialized and varied training necessary for conservation law enforcement involves considerable commitments from the individual receiving the training as well as from the supporting installation. Certain areas of training require semiannual refreshers, depending upon the Service. Exhibit 7–5 lists some of the training areas and disciplines for natural resources law enforcement personnel.

Training for a Crisis

Risk communication is a specialized and important aspect of NRM training. Risk communication involves dealing with the public in low-trust or high-concern environments (for example, residents near a Superfund site). The low-trust/high-concern situation may have little to do directly with the NRM, but because of the environmental implications of the situation, the NRM may be called upon to act as spokesperson on some issues.

The goal of risk communication is to build trust and provide information to alleviate concern. NRMs who are trained in risk communication techniques know how to convey empathy, honesty, and competence to affected groups. They can respond to difficult questions and manage conflict. Skilled risk communicators appreciate the significance of nonverbal skills and have sharpened their listening skills. Their training

Exhibit 7-5. Examples of Disciplines and Areas for Conservation Law Enforcement Officer Training

- Conservation law enforcement officers must be trained to enforce natural resource laws, including the Marine Mammal Protection Act, Endangered Species Act, Migratory Bird Treaty Act, and other natural resources laws as applicable to resources found on the installation
- The conservation law enforcement officer may also be responsible for enforcing environmental compliance related to monitoring or reporting criminal activities associated with the Resource Conservation and Recovery Act of 2002
- Conservation law enforcement officers must receive firearms training as well as firearms qualification and requalification
- Training officers who oversee requirements for firearms training, requalification, records, storage, handling, and carry of firearms must also be trained under a program such as the FLETC Basic Law Enforcement Supervisor's Training
- Conservation law enforcement officers will require training in the use and safe operation of a variety of equipment, such as watercraft, all-terrain vehicles, chain saws, radios, batons, and oleoresin capsicum spray.

Source: Adapted from MCO 5090.4, Marine Corps Conservation Law Enforcement Program, 6 October 2003 (http://www.usmc.mil/directiv.nsf/mco?openview&count=5000&start=1).

has prepared them to conduct useful research about affected stakeholders, establish relationships with the media, deal with the media in a crisis, and conduct public meetings.

For more information about training in risk communications, contact the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM), Aberdeen Proving Ground, Maryland, http://chppm-www.apgea.army.mil/default.asp; or the Navy Safety Center, http://www.safetycenter.navy.mil/.

Reference Notes

1. Sikes Act Improvement Act 1997, Public Law 105-85, Div. B. Title XXIX, Nov. 18, 1997; and codified at 16 U.S.C. 670a et seq. (1998) (amending The Sikes Act of 1960, 16 U.S.C. 670a et seq. (1996)). Full text can be found at http://thomas.loc.gov/home/thomas2.html or http://www4.law.cornell.edu/uscode/16/670a.html.

Chapter 8
Monitoring Progress and Measuring Success

Monitoring and Ecosystem Management

As a natural resources manager for the DoD, your management of installation lands is consistent with and supportive of the military mission. At the same time, this management is targeted to protecting and enhancing the natural resources associated with the installation — through compliance actions, endangered species management, stewardship, recreational uses, and productive and consumptive uses — all of which should have identified goals and objectives outlined in the installation INRMP. The various land management actions that you undertake fall under the umbrella of ecosystem management, the DoD's approach to land management.

A key element of ecosystem management is monitoring. Progress towards the conservation goals and objectives outlined in the installation INRMP must be monitored so that current management practices can be evaluated and future management needs identified.[1] All practitioners of ecosystem management stress the importance of monitoring. However, monitoring cannot be conducted in isolation. Monitoring and research should be integrated with management to continually improve the scientific basis of ecosystem management.[2] This cyclic process of linking

monitoring with management is called ***adaptive management***.[3] Exhibit 8–1 shows this process and the linkages relevant to INRMP implementation.

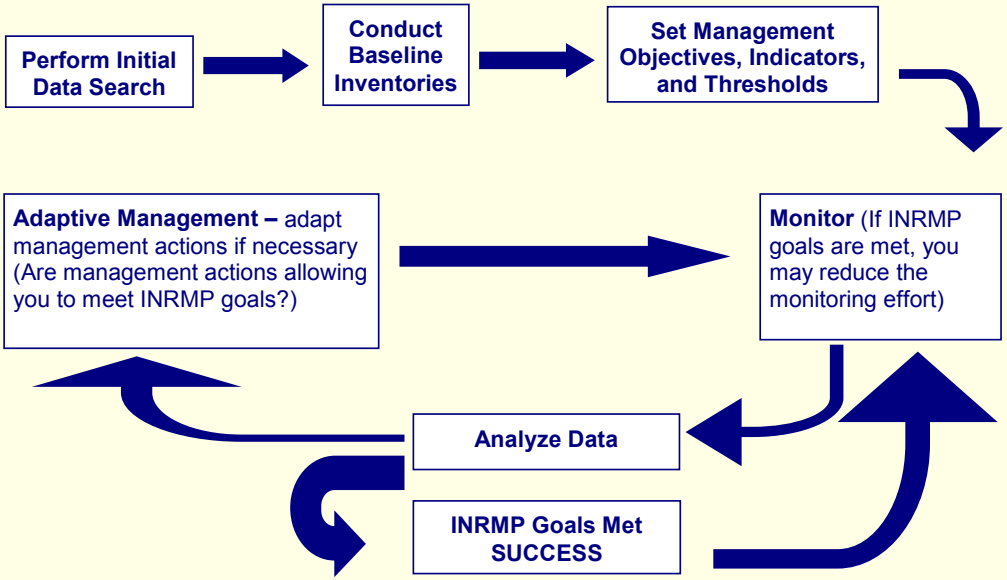
Monitoring for the NRM "refers to the procedures for gauging, checking, or tracking specific environmental parameters or attributes."[4] Monitoring results may be used to determine if an ecosystem, community or, in some cases, an individual species, is moving in the direction of the goals stated in the INRMP. Monitoring is repeated over time and may require a schedule extending 5, 10, 20 or more years before a determination can be made that a particular action has been successful or a particular INRMP goal has been met.

Why Monitor?

There are a number of reasons why NRMs monitor natural resources. In addition to supporting the military mission, today the NRM faces more challenges than ever before: increased demand for resource use (for example, hunting, fishing, recreational activities), sale of forest products, leasing for agriculture and grazing, increased intensity of land use (for military training, infrastructure, and public use and access), and a continued supply of forest products. In addition, biodiversity conservation is now a national and global priority, sustainable ecosystems is a goal, and public involvement has increased.

In the midst of these competing concerns, ecosystem complexity makes it very difficult, if not impossible, to predict the impact of management actions. Resources managers are continually required to make management decisions under conditions of uncertainty and risk. By using monitoring techniques and analyzing accurate

Exhibit 8–1. Adaptive Management



Adaptive management, a key element of ecosystem management and the DoD's preferred approach to land management, is a cyclic process.

monitoring data, the NRM can assess and improve management decisions. When decisions are made with poor or inaccurate data, management actions are more likely to fail and to be questioned by stakeholders or the public.

Monitoring can be required by law (for example, species or habitat monitoring under the Endangered Species Act and water quality monitoring under the Clean Water Act). Noncompliance monitoring can include tracking trends, evaluating management actions, and providing adequate warning of undesirable ecological conditions.[5] The results of monitoring programs can be used to inform stakeholders of specific successes. In some cases, the use of monitoring can increase public trust and support.[6] This is extremely important for installations that are under public scrutiny.

Monitoring to track trends will provide the NRM with invaluable information on species and ecosystems. The use of monitoring to evaluate management actions is crucial so that the success of the natural resources management program can be determined. Monitoring in this context is used to determine if INRMP goals are being met.

Monitoring should be clearly identified in the installation's INRMP. If not, you should consider adding a section on monitoring at the next INRMP update (annual). Monitoring is critical to determining success. If a manager can show success in the INRMP implementation (for example, land restoration, monitoring acreage of training lands), then future projects are more likely to be supported and funded.

Types of Monitoring

There are many types of monitoring.[7, 8] A few of the more common types include the following:

- **Baseline Monitoring.** This can also be called an initial inventory. Baseline monitoring establishes an information base on which plans and future comparisons are made. It is performed at the beginning of a monitoring program and may include initial species counts, water quality monitoring, and so forth. Baseline monitoring, according to DoDI 4715.3, Enclosure 4, is a Class 1 or "must fund project."[9]
- **Implementation Monitoring.** This is a process of determining whether a planned activity has been implemented. It asks the question, "Did we do what we had planned to do?"
- **Effectiveness Monitoring.** Monitoring of this type assesses whether a project is effective in reaching the management goals. For example, if a manager manipulated a forest stand to increase the abundance of forest songbirds, effectiveness monitoring would collect data to see if forest songbird abundance had actually increased.
- **Compliance Monitoring.** This is used to determine whether legally defined standards, regulations, or discharge requirements are being met. This can include monitoring pollution discharges, wetland restoration goals, and endangered species population abundance as part of a recovery plan.

Installation monitoring programs should use a combination of these types of monitoring. Most current monitoring conducted on installations falls under compliance monitoring. This is in part because it is a legal requirement and therefore a "must-fund

item." However, to be effective in achieving overall INRMP goals, monitoring must be expanded beyond compliance.

Priorities and Objectives for Monitoring

There is much information in the scientific literature on the design and implementation of monitoring protocols, including the following recent guides:

- *Conserving Biodiversity on Military Lands: A Handbook for Natural Resources Managers.* 1996. M. Leslie et al. Chapter 5, Conservation Objectives and Strategies: Action and Experimentation.[10]
- *Ecological Stewardship: A Common Reference for Ecosystem Management*. 1999. "Information and Data Management" in Volume I: *Key Findings*, edited by N.C. Johnson, A.J. Malk, R.C. Szaro, and W.T. Sexton. "Information and Data Management" in Volume II: *Public Expectations, Values and Law: Social and Cultural Dimensions; Economic Dimensions; and Information and Data Management,* edited by W.T. Sexton, A.J. Malk, R.C. Szaro, and N.C. Johnson.[11]
- *Measuring and Monitoring Plant Populations.* 1998. C.L. Elzinga et al.[12]

The material in *Conserving Biodiversity on Military Lands* emphasizes biodiversity and species conservation, whereas the section referenced in *Ecological Stewardship* emphasizes ecological monitoring. These publications provide much useful information and some of the following information has been adapted from them.

Setting monitoring priorities and objectives for your monitoring program is a crucial initial step because the subsequent steps (that is, choosing monitoring indicators,

developing thresholds, and collecting data) all depend on the prioritized monitoring objectives. Funding limitations and available technical expertise must also be considered. Your monitoring program must be realistic and must be able to be supported for a minimum time period; otherwise, its utility is lost. Exhibit 8–2 lists important steps in developing a monitoring program.

The following examples are primary criteria used by The Nature Conservancy (TNC) when setting priorities for monitoring for species conservation:[13]

- Declining or endangered populations
- Rare species or ecosystems
- Species or ecosystems that face immediate threat
- Actively managed populations
- Invasive species.

Although these criteria are geared towards vegetation monitoring, they are a good general guide that can be applied to most monitoring decisions.

Other criteria to consider when setting monitoring priorities are the feasibility of including issues or species of interest to the public. While gearing monitoring priorities purely in support of public relations is neither advisable nor tenable, identifying areas of interest to the public will benefit the overall installation and may be the basis of forming natural resources volunteer support groups or partnerships. Similarly, try to

Exhibit 8–2. Developing a Monitoring Program

Developing a monitoring program requires several steps. These include—

1. Defining monitoring objectives early and clearly
2. Understanding pattern and process
3. Deciding essential properties
4. Arranging essential properties into an ecological model
5. Determining the best indicators for specific aspects of the model
6. Choosing a sample design, tied to the objectives and required level of precision
7. Tying evaluation to monitoring objectives and decision making.

A monitoring program should not be implemented in isolation from other activities. Modeling the ecosystem, monitoring the status of the ecosystem, and evaluating management actions are all part of one integrated and iterative process. One should design and implement monitoring activities in conjunction with management actions or developments that are likely to affect the ecosystem.

Source: Szaro, R., D. Maddox, T. Tolle, M. McBurney, 1999.[14]

place a priority on monitoring that can provide useful information for the installation's trainers, range managers and operations staff.

Ongoing regional or local monitoring programs should also be considered when setting installation monitoring priorities. Much of the initial work involved in establishing a monitoring program may already have been conducted by the partner monitoring group. You may be able to use the existing monitoring protocols, data collection, and data management that have been established by the partner monitoring group. Also, by submitting your monitoring data to the partner monitoring group, you should be able to strengthen your own monitoring efforts. It may be feasible to reduce the anticipated number of monitoring events and therefore reduce your costs through sharing information and resources. However, before partnering for the purposes of monitoring, you should determine whether your specific monitoring objectives can be fully met and whether the data collected will be in a form that is readily usable by the installation (see section below on Data Collection and Management).

The INRMP conservation goals should be used to determine monitoring objectives. The monitoring program should provide enough information for the NRM to assess whether a particular management regime is reaching the INRMP goals. TNC recognizes several monitoring objectives for species conservation:

- Qualitative objectives relating to the presence of a species
- Population census
- Estimate of population through representative sampling

- Changes in some average value (for example, number of plants per plot).[15]

Examples of two specific INRMP conservation goals and their monitoring objectives are presented in Exhibit 8–3.

Monitoring Indicators

An effective monitoring indicator performs one of three functions:[16]

- *Assessment* of status and trends (assessment indicator)
- *Prediction* of future problems (predictive indicator)
- *Diagnosis* (diagnostic indicator).

Exhibit 8–3. Examples of INRMP Conservation Goals and Associated Monitoring Objectives

Conservation INRMP Goal	*Monitoring Objective*
Maintain a viable population of native species	Measure the abundance of pine martens to determine if there is any significant change in abundance or distribution
Maintain ecological processes	Measure sediment and nutrient content of streams to determine if sediment loss and nutrient loading are deteriorating the system

Source: Modified from Noss and Cooperrider, 1994.[17]

In many cases there will be at least two monitoring indicators associated with each monitoring objective. Monitoring indicators may be qualitative or may require quantitative measurements. By developing a comprehensive suite of monitoring indicators, you will be able to gauge progress in the monitoring program and help detect problems quickly.

Some general desirable characteristics of monitoring indicators include:[18]

- Biologically relevant (that is, important in maintaining a functioning ecosystem)
- Socially relevant (that is, of obvious value or observable by the public)
- Sensitive to stressors
- Broadly applicable to many sites
- Diagnostic of the particular stressor causing the problem
- Measurable (that is, capable of being measured by a standard procedure)
- Interpretable
- Cost-effective (that is, inexpensive to measure, providing the maximum amount of information per unit effort)
- Anticipatory (that is, capable of providing indication of degradation before serious harm has occurred)
- Nondestructive to species or ecosystem

- Not redundant with other measured monitoring indicators
- Timely.

Developing Thresholds

For each monitoring indicator established there should be corresponding thresholds so that problems can be identified before irreparable harm occurs to a species or an ecosystem. The establishment of thresholds in a monitoring program may be likened to the proverbial canary in the coal mine: application of thresholds should protect species and ecosystems from reaching conditions under which their recovery would be unlikely. Two types of thresholds are recognized: a *biological threshold* is the point below which the degradation of a species or ecosystem may be irreversible; a *management threshold* is the point at which the risk of reaching a biological threshold is unacceptably high.

The following example of the application of thresholds used in monitoring is modified from Noss and Cooperrider (1994).[19] Consider that summer stream temperatures below 58 °F are needed to maintain a viable aquatic system. Above 58 °F, salmon do not reproduce well, and so the biological threshold is set at 58 °F. To avoid approaching this temperature, the management threshold might be set at 55 °F. Management alarms would go off if stream temperature reached 55 °F, and actions would be taken to decrease water temperature. Leave some room for error when setting a management threshold: many biological thresholds are not well understood. Also, some management thresholds, such as water quality criteria, are stated in laws or regulations.

A different example using management thresholds has been implemented at Yakima Training Center (YTC) in Washington State. At YTC, the western sage grouse *(Centrocerus urophasianus phaios)* was chosen as a wildlife monitoring indicator of good sagebrush habitat because it is dependent on healthy sagebrush habitat for food, cover, and breeding. One of the management thresholds established by YTC evaluates their compliance with the Western Sage Grouse Conservation Agreement, a cooperative agreement between the Army, the U.S. Fish and Wildlife Service (USFWS), and the Washington Department of Wildlife (WDW). In this case the monitoring is conducted by asking a series of questions (for example, are troops following environmental training standards?). If two or more questions are answered with a no, then action is required to assess the problem.[20] The biological threshold (already established through coordination with the USFWS and WDW) is avoided through active monitoring and adaptive management. This YTC case is also an example of qualitative monitoring where the monitoring data are the yes and no responses to questions. YTC's overall monitoring program is described in Exhibit 8–4.

If thresholds are reached, then management actions need to be taken. The specific management actions should be documented in advance so that when the threat appears, managers can deal with the situation immediately and avoid further degradation or damage. Using the stream temperature example above, management actions that would protect the stream from undesired temperature fluctuations or peaks might include stopping an activity such as timbering, retaining a substantial riparian forested buffer, or extending an existing riparian buffer through revegetation. By adopting management thresholds on sound information, managers will have a defensible basis for making difficult decisions.[21] Exhibit 8–5 provides potential monitoring indicators,

Exhibit 8–4. Highlights of Yakima Training Center's Monitoring Program and INRMP Implementation

- Goals identified for all critical resources (that is, soils, wildlife, water)
- Comprehensive monitoring program keeps management on track toward goals (monitoring objectives, monitoring indicators, management thresholds, and so forth)
- Use real-time geographic information system to monitor and adaptively manage
- Conduct daily meetings between range and environmental staff
- Adhere to designated land use zones (that is, land bank, conservation, general use, high use, impact, and cantonment zones)
- Use technical and policy committees to develop and implement the INRMP
- Use a resource ratings scheme for easy identification of problems (red, amber, green)
- Use an environmental coordination map to keep range and environmental managers aware of current land conditions and restrictions (for example, areas off-limits to training, areas off-limits to recreation, training zones, and so forth)
- Use SIBER stakes (for example, PVC piping) and signage on the ground to inform soldiers and public of off-limits areas
- Intensive training of trainers and soldiers in environmental awareness.

Exhibit 8–5. Sample Monitoring Objectives, Monitoring Indicators, Management Thresholds, and Management Actions

Monitoring Objective	*Monitoring Indicator(s)*	*Management Threshold*	*Management Action*
1. Maintain historic abundance and distribution of beaver (a keystone species)	Abundance as measured by number of active lodges per mile stream; distribution as measured by distribution of lodges from aerial flights or photos	A 20 percent decrease in abundance or distribution	Limit trapping; reduce water diversion
2. Detect increase in nutrient or sediment loss in streams	Total dissolved solids (TDS), nitrogen (N), and phosphorus (P) content in streams sampled at monthly intervals after peak storm events	Increase of over 5 percent in TDS, N, or P	Change logging practices; elimination of logging in affected watersheds

Source: Modified from Noss and Cooperrider, 1994.[22]

management thresholds, and management actions for two monitoring objectives. In this case, the INRMP conservation goal is to maintain current stream channel integrity.

Data Collection and Management

Data collection and data management are important steps in a successful monitoring program. If data are not collected properly or managed well, time and money are wasted. The major objectives of data collection and management protocols are to assure that data are recorded and transferred accurately and are secured from loss or damage.[23] Sound and consistent protocols of data entry, verification, documentation, and archiving must be developed and adhered to.

Using Existing Data

A first step in data collection is to determine if appropriate data already exist. Using previously collected data can save time and money. However, the NRM must be sure the available data can specifically address the monitoring objectives. When considering the use of existing data and information sources, ask these questions as well: Would the existing data require conversion to a usable format? Are there flaws in the data collection methods that affect the quality of the data? Do the data follow standardized classification and nomenclature schemes? Did the data collection follow standard methods and protocols?

Sources of existing data include government agencies, university studies, archives, private organizations (for example, TNC and local conservation groups), and literature searches. An extensive list of environmental databases can be found at http://www.cnie.org/NLE/Links, which contains links to seven of the Environmental Protection Agency's (EPA) environmental databases. In addition to the EPA databases,

climatic, oceanographic, and satellite data are also accessible through the National Oceanic and Atmospheric Administration (NOAA). The National Environmental Data Index (NEDI) provides direct access to environmental data and information descriptions of government agencies (http://nedi1.nedi.gov). The EPA's Environmental Monitoring and Assessment Program (EMAP) contains data that also might be useful for a natural resources manager (http://www.epa.gov/emap). Although EMAP has continuously struggled to reach its goals, it has accumulated some useful information.[24] Through the Natural Heritage Network (http://www.natureserve.org), you can locate the Natural Heritage Program office in each State that gathers standardized data on endangered plants, animals, and ecosystems found in that State.

Data Collection and Management Protocols

Once data gaps are determined, a next step in developing your monitoring program is to develop data collection and management protocols. When establishing a monitoring program, the NRM must use and require the use of standardized methods, nomenclature, and so forth. To be useful, the data collected on an installation must be in a standardized format. The sampling unit, sampling size, and location of the sampling units (using maps or photos) should be established. Data collection protocols must be documented so data collectors and managers have a standard format for handling sampling, gathering data, recording data, storing data, and transferring data into a long-term format.

Because monitoring schedules can have sampling events occurring over many years, it is unlikely that you will be able to use the same technicians to collect the data. If you use contractor support to conduct data collection, you will likely not be able to use the same contractor support for each monitoring event. It is critical to have standardized

methods in place and to require strict adherence to the monitoring protocols. Consider including these protocols as appendices to the INRMP so that all pertinent information is in one location.

In the past, there was little standardization of data collection and management, but there are now many dependable resources that you can use to research a set of previously developed standards to use in data collection. Exhibit 8–6 illustrates the advantages of using a standardized data collection system. Exhibit 8–7 lists a number of sources for data collection and management standards. It may be important to speak with an expert to determine which standards are appropriate for your monitoring program.

The National Biological Information Infrastructure (NBII) (http://www.nbii.gov) is working with installations in several areas of data management, acquisition, and storage. The NBII serves as an electronic, Web-based gateway to biological data and information products maintained by Federal, State, and local government agencies, nongovernment agencies, and private sector organizations in the United States and around the world. The NBII is led by the U.S. Geological Survey and maintains a network of regional and thematic nodes throughout the country and a metadata clearinghouse. The primary mission of the nodes is to support acquisition, management, and delivery of biological data and information throughout the nation. In support of this distributed network, the NBII develops the various tools, standards, and applications that aid in interoperability and biological data management.

Exhibit 8–6. Forest Health Monitoring

Forest health monitoring (FHM) is one of several new management techniques that may be applicable to your installation. FHM, developed by the U.S. Department of Agriculture Forest Service, allows managers to assess the condition of forest ecosystems and improve management. The national FHM program is designed to annually collect, analyze, interpret, and report on the conditions of all forests in the United States in a standardized way. FHM measurements involve eight health indicators: mensuration (including tree growth, mortality, regeneration), crown condition, tree damage, ozone bioindicators, vegetation diversity, lichen communities, soils, and wildlife habitat.

Fort A.P. Hill adopted FHM in 1998 and to date has used the methodologies and techniques to help guide natural resources management and land rehabilitation/maintenance on the installation. Fort A.P. Hill has shown that FHM can detect changes in forest conditions associated with military training as well as land management activities, thereby providing valuable information and recommendations to the Integrated Training Area Management and Natural Resource Programs. Since its inception on Fort A.P. Hill, subsequent FHM indicators have been added to further assess the impact of training operations and land management activities on the environment.

For more information, contact the FHM POCs: Jason Applegate, LCTA Coordinator, Fort A.P. Hill (jason_r_applegate@belvoir.army.mil); and Jim Steinman, Forest Health Monitoring Coordinator, USDA Forest Service (jsteinman@fs.fed.us).

Exhibit 8–7. Data Collection and Data Management Standards (page 1)

Spatial Data Standards

- **National Biological Information Infrastructure (NBII).** This site is maintained by the U.S. Geological Survey and contains taxonomic information and other data links in addition to spatial data standards. The NBII also maintains a metadata clearinghouse and can provide training and resources for data management. http://www.nbii.gov/datainfo/metadata
- **The Gap Analysis Program.** This home page provides links to each individual State Web site, where you can contact the appropriate office for spatial data or data standards. The program is run through the U.S. Geological Survey. http://www.gap.uidaho.edu
- **National Spatial Data Infrastructure (NSDI).** Coordinated by the Federal Geospatial Data Committee (FGDC) (http://fgdc.er.usgs.gov/), which was created in response to Executive Order 12906.[25] http://fgdc.er.usgs.gov/nsdi/nsdi.html

Avian Research and Monitoring Standards

- **Breeding Biology Research and Monitoring Database (BBIRD)**. Developed by the Montana Cooperative Wildlife Research Unit for bird research and monitoring. http://pica.wru.umt.edu/BBIRD/
- **Monitoring Avian Productivity and Survivorship.** The Monitoring Avian Productivity and Survivorship (MAPS) program is a cooperative effort among public agencies, private organizations, and individual bird ringers in North America to perform large-scale monitoring of avian populations. MAPS utilizes more than 500 constant-effort mist netting and ringing stations during the breeding season. Monitoring standards and information can be found at http://www.birdpop.org/maps.htm.

Exhibit 8–7. Data Collection and Data Management Standards (page 2)

Aquatic Standards

- **Water Quality Criteria and Standards Program.** This site contains standards and criteria for water quality. http://www.epa.gov/OST/standards/
- **Water Quality Monitoring.** This site contains Information on standardized data collection and monitoring protocols. http://www.epa.gov/OWOW/monitoring/

Broad-Based Environmental Standards (for example, vegetation, wildlife, aquatic ecosystems)

- **The Resources Inventory Committee of British Columbia.** This interagency committee provides a range of inventory standards and procedures, field guides, field forms and background documents. These standards may not be those found in the United States, but can provide useful information. http://srmwww.gov.bc.ca/risc/index.htm
- **National Resources Inventory.** In addition to information on statistical design and other background material, this site also contains statistically reliable nationwide data. http://www.nrcs.usda.gov/technical/NRI
- **U.S. Fish and Wildlife Data Standards.** This site contains standards for wetland and vegetation classification and also numerous environmental data layers. http://www.fws.gov/stand/index.html

Using previously developed standards reduces costs to the installation (that is, you don't spend time developing your own "standards"), increases the ease of data transfer, and reduces duplication of data. Also, the use of standardized data collection and management protocols ensures that different monitors will have a standard format to use over the years.

Data Collection and Management Resources

Resources needed to implement your monitoring program include professional staff and technicians to collect the data from existing sources and from the field. Proper equipment is needed (for example, measuring and data-recording devices, computer support, and software programs). Background information in the form of maps, aerial photos, and field manuals are also helpful. You should also consider training opportunities on data collection techniques and on data storage and retrieval. (See Chapter 7 for information on training.)

Just as planning and design are needed when you implement management actions in the field, there should be equal efforts made in planning data management strategies. Data management does not stop with the storage of data accumulated from the field. It must also include data maintenance and data retrieval. The full range of data management must be factored into your budgeting process. You will need to account for not only the scheduled monitoring events and data collection in the field but also the analysis of the monitoring data, its potentially long-term storage, and the accessibility and retrieval of the data for modeling and review. These activities will require professional staff, as well as hardware and software.

Data Analysis and Management Adjustment

Periodically, the monitoring data need to be analyzed to determine if current management is meeting the monitoring objectives and conservation INRMP goals. It is of no value to merely collect data. Monitoring data must be analyzed and evaluated with respect to the original management and conservation INRMP goals and objectives.

If your monitoring data reveal that you are off target for your INRMP objective, then you adapt your management to get back on target. Exhibit 8–8 (the bull's-eye/target) demonstrates three scenarios where 1) progress to an objective is direct and on schedule; 2) monitoring detects a need for adaptive management to get back on target objective; 3) reassessment is required because monitoring detected that, even with adaptive management, progress to target is not occurring.

Data analysis may require statistical analysis, and NRMs may need to go outside of the natural resources department for such expertise. However, once the statistical analysis is established, the natural resources staff may be able to conduct the analysis for subsequent monitoring events.

When asked, most installation program managers readily acknowledge they have to be experts in adaptive management. They must constantly change strides to meet new training and mission support needs, new compliance requirements, and so forth. In the context of implementing ecosystem management, this is not adaptive management and is better termed ad hoc management. As an element of ecosystem management, adaptive management entails setting clear goals and objectives in the INRMP,

Exhibit 8–8. Adaptive Management Scenarios (page 1)

Each of the targets illustrates a possible adaptive management scenario.

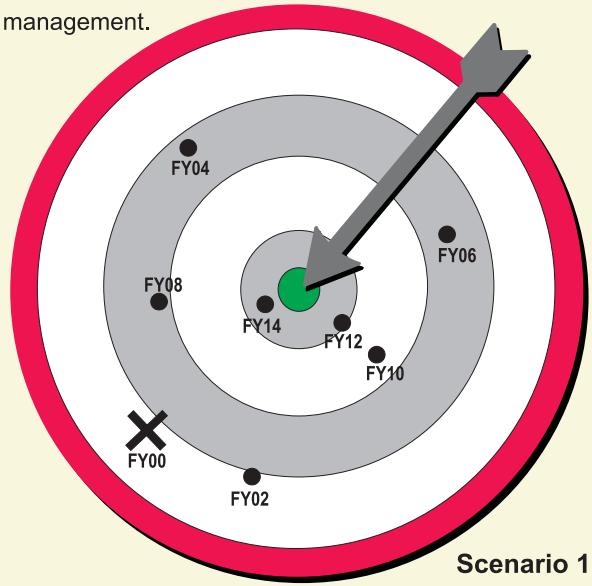
Scenario 1: Monitoring reveals steady progress toward the INRMP goal, which is reached in FY14.

Scenario 2: Monitoring in FY06 detects the need for adaptive management. The INRMP goal is reached in FY18.

Scenario 3: Monitoring reveals that the critical management threshold has been reached. Immediate corrective action must be taken. Management actions must be reassessed to identify the problem.

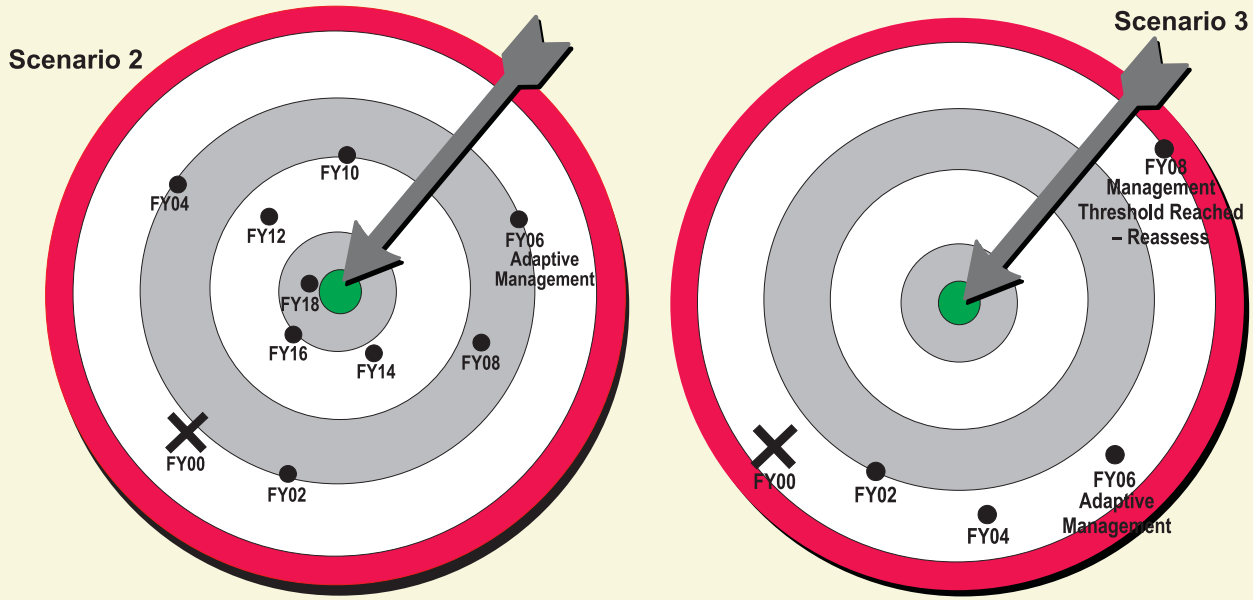
Four possible problems can account for the failure of the actions to move toward the INRMP goal:

1. **Monitoring problem:** Incorrect monitoring parameters were established (wrong threshold, monitoring indicator insensitive to parameters)
2. **Management action problem:** the prescribed action is having no effect.
3. **Goals and objectives problem:** the INRMP goals and objectives are unrealistic.
4. **External factors:** a natural disaster or external factor such as erosion and sedimentation from adjacent construction has affected the natural resources area adversely.



Scenario 1

Exhibit 8–8. Adaptive Management Scenarios (page 2)



establishing monitoring indicators to determine if INRMP goals are being reached, and adapting management as necessary to stay on track to the goals.

In some cases, (see Scenario 3 in Exhibit 8–8), the INRMP goals and objectives may not be realistic or appropriate, and new goals must be developed. However, this explanation for the scenario should be rare. It is more likely that adaptive management is required to get the project back on track. Also, depending on the information gathered from data analysis, monitoring indicators and management thresholds may need to be updated.

Monitoring allows a resources manager perform the following critical functions:

- To determine whether current management is meeting or diverging from conservation INRMP goals
- To be knowledgeable of resource trends
- To be alerted of serious degradation.

A good monitoring program requires systematic planning, collection, and analysis of data.[26] Monitoring cannot stand alone. It must be integrated with management so that it affects management decisions.

Program Success

Different groups will regard success in INRMP implementation very differently; not everyone sees success from the same perspective. This is mainly because individuals looking at the installation's natural resources program will have their own criteria for

success. While this may be a basic concept, it is important that the NRM realizes this so that expectations for success recognition are appropriate and realistic.

Different Perspectives on Success

Because of the cooperative way in which INRMPs are developed there will likely be several quite diverse groups interested in the successful implementation of INRMPs. These groups who do not necessarily share the same goals and objectives include your major command and headquarters, installation organizations, the USFWS, the State fish and game department, local stakeholders, and other interested individuals and parties.

The monitoring program you set in place will give you direct acknowledgment of successful progress towards goals and objective. For the NRM, success should not be determined solely when an objective is met, but should include recognition for positive progress towards that objective. When briefing command and others on the status of the natural resources program, it should be stressed that positive progress towards an INRMP objective should be regarded with almost the same importance as reaching the target objective itself. Indeed, in some cases, the progress towards an objective using adaptive management techniques requires far more thought and effort than finally reaching that objective, and even under the best circumstances some objectives may not be reached for many years.

Demonstrating progress towards an objective will usually be well received by stakeholder groups and others external to the installation. They are more likely to have an interest in one or a few specific management actions and acknowledge that a particular action is “well on the road to success.” A good monitoring program is the

means to demonstrate this progress and to identify when the final target objective is reached.

Conservation Measures of Merit

A basic measure of success for military installations is whether specific Measures of Merit (MoMs) are attained in a given fiscal year. DoD uses the MoMs to define environmental security goals, to measure progress towards these goals, and to help build the environmental portion of the DoD budget.

The services track the MoMs from the installations to the major commands and up to the service headquarters organizations. The Secretaries of the Military Departments then report to the Under Secretary of Defense for Acquisition and Technology through the Deputy Under Secretary of Defense for Installations and Environment. Progress toward meeting the MoMs is reported at each conservation In-Progress Review and in the annual *Environmental Quality Report to Congress*.

In 2002, the office of the Deputy Under Secretary of Defense issued updated guidance for implementation of the Sikes Act Improvement Act (SAIA)[26]. Included in the guidance memorandum were new conservation MoMs (https://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Legacy/Sikes/max0002.pdf) and an attached spreadsheet to use to report progress towards meeting the MoMs (https://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Legacy/Sikes/Sikes_Spreadsheet_October_02.xls). The reporting elements of these MoMs are given in Exhibit 8–9. While still not ideal, these MoMs are a considerable advance over the previous MoMs in measuring success and in meeting the INRMP tracking requirements of the SAIA[27].

Exhibit 8–9. Department of Defense Conservation Measures of Merit

The reporting elements fall into six broad categories:

- Background (installation name, State, INRMP year, next revision)
- Installation coordination (projects added by trainers and operators, annual feedback requested and received from trainers and operators)
- Coordination with USFWS and with State (agreement on resource management, projects requested to be added, annual feedback requested and received)
- INRMP goals and objectives with associated implementation time frames
- Comparison of funded amounts to funding requirements for INRMP projects for Class 0 to Class 3 and listing of unfunded Class 0 and Class 1 projects greater than $50,000 value
- Public comment (opportunity for public to comment and projects added as a result of public comment).

Source: Memorandum of the Deputy Under Secretary of Defense (Installations and Environment), 10 October 2002, Implementation of Sikes Act Improvement Act: Updated Guidance. Available at https://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Legacy/Sikes/max0002.pdf.

Some of the individual services are working to further improve the MOMs and to develop more refined metrics for conservation management. For example, the Assistant Secretary of the Navy (Environment) has tasked the staff to develop metrics that will provide the leadership with an improved sense of success of the Navy's partnerships with the U.S. Fish and Wildlife Service and the States in developing and implementing INRMPs. To that end, the Navy, in conjunction with the Marine Corps, is developing natural resources metrics and an INRMP template and conducted initial field tests in Spring 2005. For information on the metrics model, contact Joe Hautzenroder, Headquarters NAVFAC, Washington Navy Yard, Washington, DC, (202) 685-9331, e-mail: joseph.hautzenroder@navfac.navy.mil; or Heidi Hirsh, Headquarters Marine Corps, Arlington, VA, (703) 695-3339, e-mail: HirshH@hqmc.usmc.mil.

In addition to monitoring, you should consider developing a strategy for communicating success to the different audiences. Depending upon the audience and the message to be conveyed, there are different types of indicators of success. Chapter 6 of *Conserving Biodiversity on Military Lands*[28] describes different indicators and discusses the importance of measuring success and reporting and sharing information in the context of managing for the future.

A strategy for communicating success should link the installation's vision for natural resources management to the mission of the natural resources program. This in turn should be linked to the stated goals and objectives outlined in the INRMP, and progress towards these goals and objectives is measured through the monitoring. This hierarchical approach is not unique to natural resources management but is similar to many business management approaches. [29, 30]

Developing and carrying out a successful monitoring program is not easy but it is extremely important for meeting conservation INRMP goals. A large impediment to monitoring is the lack of funding it commonly receives. This fact simply reinforces the need for natural resources managers to prioritize and set up a well-organized and well-supported monitoring program.

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Chapter 9
Implement, Update, and COORDINATE

Where Do You Go From Here?

As the natural resources manager (NRM), you know by now that there is no such thing as a final, completed INRMP. The INRMP is a dynamic document that requires constant and consistent implementation, maintenance, and updating. As goals and objectives are achieved or if actions are not accomplished within the anticipated time frames, some components of the INRMP will require updating. The new coordination, reporting, and implementation requirements issued by DoD and by the individual Services (see Chapter 1) should also be addressed in the INRMP update.

Using an INRMP Should Be Habit-Forming

How many times do you think someone has referred to the installation INRMP in the last 6 months? If the answer is none, then the INRMP is a shelf document and likely will not be picked up until its next official 5-year update. If the INRMP is little used, then you should ask the following questions and take steps to remedy the problems.

- **Does everyone who should be using the INRMP have a copy of it?** You may want to consider a new distribution list for either the entire INRMP or for specific

sections targeted to the appropriate responsible parties. At a minimum, everyone who is identified in the INRMP as having a role in its implementation should have a copy. Consider posting the INRMP on the installation Web site.

- **Is the format of the INRMP user friendly?** Consider making the INRMP available electronically and in a format that either has internal links or that can be searched for key words. But beware — an electronic version that takes hours to download from the Web will have a decidedly unfriendly appeal to readers, especially review agencies and the public.
- **Are there regular communications with the INRMP signatory agencies?** Positive and productive communications with agency offices will enhance INRMP implementation and will facilitate review and approval when the INRMP is updated. Although agency coordination is not a new requirement, the 2002 Sikes Act Improvement Act updated guidance[1] and its supplement issued in November 2004[2] identifies specific actions intended to improve coordination between installations, the U.S. Fish and Wildlife Service (USFWS), and State fish and wildlife agency offices.
- **Is there an established procedure for keeping the INRMP updated?** Consider using the INRMP update forms provided in the Appendix, or use a designated individual or working group to regularly collate information from installation land management, training, public works, planning and public affairs, and so forth who will maintain an up-to-date INRMP. See the section below on updating the INRMP.
- **Are there important sections missing from the current INRMP?** The coordination, reporting, and implementation requirements of the 2002 Sikes Act

Improvement Act updated guidance should be addressed in the next update of the INRMP[3]. You should also refer to your individual Service for specific reporting and metrics requirements that may be under development.

- **Does the INRMP articulate a vision for the installation's natural resources management?** Are there identified goals and objectives? Are management actions prioritized? Is there a monitoring program described that will demonstrate progress to the stated INRMP goals and objectives? Does the INRMP identify individuals and groups responsible for INRMP implementation? Capture these in the next update of the plan.
- **Does the INRMP reflect the current mission, or have there been significant changes in the mission since the last INRMP update?** Even if a mission change does not immediately affect INRMP implementation, you should document it and its potential impact on plan implementation in the next INRMP update.
- **Do all the relevant groups and organizations have an overall understanding of the INRMP?** You need to continually educate groups on the INRMP: its dynamic nature; the need for ongoing refinement and updating; the inherent flexibility of its implementation; and its use as a ready reference on land capabilities, restrictions, and management.

There may be no more useful single document developed for an installation than the INRMP. Information in the INRMP is useful to the commander because it identifies the relative importance of the installation to the region. The INRMP outlines the sustainability of the land for mission support and identifies land use constraints, compliance requirements, management actions, and the monitoring of progress

toward stated goals and objectives. Depending on the given installation, INRMPs also address recreational opportunities for military personnel, their families, and the public; agricultural outleasing; and reimbursable forestry programs. However, if installation staff are not familiar with the INRMP and no one routinely uses it, then its value is diminished.

Chapter 5 of the handbook addresses the ongoing need to educate both installation staff and off-installation groups on the INRMP and to gain their support for its implementation. But to really get everyone's attention, you may want to consider formally launching the INRMP each time you complete a major update.

Launching an INRMP

Make the INRMP launch a highly visual event that showcases regional and installation natural resources and the installation's management efforts. Consider holding a ceremony to be hosted by the installation commander. Enlist the participation of the local State natural resources agency and the USFWS local office. Select an appropriate time or forum for the ceremony: an annual installation event, Earth Day, county or State fair, or presentation of a temporary display at a nearby national park or national wildlife refuge. Depending upon the venue, staff support for a display may not be required. Post the installation Web address and identify an installation point of contact for anyone who wants additional information. In any INRMP and natural resources displays or ceremonies, be sure to include an opportunity for prospective volunteers to sign up.

Defining INRMP Implementation

Implementing the INRMP will not likely result in overnight changes to the natural resources program. But over time, the installation's overall management philosophy will change and the ecosystem management approach outlined in the INRMP will become the norm. Defining implementation for such an inherently flexible, far-reaching, comprehensive management plan is a challenge. Depending upon where you sit — installation command, State wildlife agency, Service headquarters, comptroller, regional USFWS office, local hunting club — you can expect interpretations of INRMP implementation to vary widely. In an effort to maintain some consistency, the DoD provided a definition for INRMP implementation in the 2002 memorandum, *Sikes Act Improvement Act: Updated Guidance*[4].

As a preamble to the definition, the memorandum states that implementation anticipates that all "must fund" projects and activities will be executed according to the specific time frames identified in the INRMP. "Must fund" projects and activities are those that are required to meet recurring natural and cultural resources conservation management requirements or current compliance needs. Natural resources and related conservation projects should be listed in the INRMP and should be categorized as to the funding class. See Chapter 3 for descriptions of the funding classes used in the Environmental Program Requirements Module.

According to the updated guidance, an INRMP will be considered to be implemented if an installation conducts the following actions:

- Actively requests, receives, and uses funds for "must fund" projects and activities

- Ensures that sufficient numbers of professionally trained natural resources management personnel are available to perform the tasks required by the INRMP
- Coordinates annually with all cooperating offices
- Documents specific INRMP action accomplishments undertaken each year.

INRMP Reporting Requirements

INRMP implementation is determined by annual attainment of conservation Measures of Merit (MoMs). (See Chapter 8 and Exhibit 8–9, Department of Defense Conservation Measures of Merit). Each installation documents progress toward meeting the MoMs, following the format of the DoD spreadsheet (https://www.denix.osd.mil/denix/Public/Library/NCR/updated_sikes.htm). The recorded information is reported at each conservation In-Progress Review (IPR) and is included in the annual DoD Environmental Quality Report to Congress.

Coordination with the U.S. Fish and Wildlife Service and State Fish and Wildlife Agencies

Whether it is a request to the agencies for annual feedback on INRMP effectiveness or a request to consider an INRMP as a substitute for critical habitat designation, consistent and positive coordination with the agencies benefits the installation and helps INRMP implementation. The 2002 memorandum, *Sikes Act Improvement Act: Updated Guidance*[5], outlines specific policies for coordination with the USFWS and with State fish and wildlife agencies. The updated MoMs require that installations report annually on their coordination with the USFWS, State fish and wildlife agencies, and military trainers and operators.

Installations are encouraged to invite annual written feedback from the appropriate USFWS and State agency offices on their perception of the effectiveness of the installation INRMP. This annual communication gives both the installation and the agencies an opportunity to summarize the year's activities, to highlight activities planned for the coming year, and to state any unresolved issues.

In 2001, the USFWS issued the memorandum *Guidance for Coordination of Department of Defense Sikes Act Integrated Natural Resource Management Plans*[6] (available at http://www.fws.gov/r9dhcbfa/sikes.pdf). This document, which provides guidance to USFWS staff on implementing the requirements of the Sikes Act, is currently being updated and will be replaced by *U.S. Fish and Wildlife Service Guidelines for Coordination with the DoD and Implementation of the Sikes Act*. For information on the updated guidance, contact National Sikes Act Coordinator Laura Henze at (703) 358-2398, e-mail: Laura_Henze@fws.gov.

As the NRM, you should take the lead in establishing and maintaining regular communications with the local USFWS and State fish and wildlife agency offices. While the intent is to develop reciprocal communications, agency offices are often overwhelmed with regulatory and legal work and they may find it difficult to maintain a consistent level of communication. In these cases, it is important for the NRM to establish a communication link, even if it is only used once or twice per year. If there are no pressing installation issues requiring agency input, then little communication may be needed — but it is important that a communication link exists. However, coordination with the USFWS and State fish and wildlife agencies for INRMP

preparation or revision follows a more structured approach and is presented in the section on updating the INRMP.

Coordination for Preparing or Revising an INRMP

The 2002 memorandum, *Sikes Act Improvement Act: Updated Guidance,* includes specific requirements for coordinating with the USFWS and State fish and wildlife agencies when preparing or revising an INRMP. The intent of this policy is to satisfy the Sikes Act requirements to have the plans developed in cooperation with those agencies and that the plans reflect the "mutual agreement of the USFWS and State concerning the conservation, protection, and management of fish and wildlife resources"[7]. The aim is that all INRMP elements are developed in cooperation with the agencies, not just the fish and wildlife management components.

Although mutual agreement is the goal for the entire plan, it is only a requirement as it relates to those elements of the INRMP that are subject to the applicable legal authority of the USFWS or State agencies concerning conservation, protection, and management of fish and wildlife resources. Mutual agreement is reached when there is written concurrence on those elements of the INRMP from the installation commander, the director of the appropriate State fish and wildlife office, and the USFWS regional director (or, for California and Nevada, the USFWS manager of the California/Nevada operations office).

For assistance with the development and review of INRMPs, the appropriate USFWS contact is your local field office. The USFWS field office staff will review the INRMP and provide preliminary agreement to the installation. Subsequent review may be

conducted by the regional USFWS office, and final action will be made by the USFWS regional director. The USFWS has established regional Sikes Act coordinators who can direct an installation to the appropriate field office and who are available to assist with coordination. A list of the USFWS regional Sikes Act coordinators is provided as an attachment to the 2002 memorandum, Sikes Act Improvement Act: Updated Guidance, and is available at https://www.denix.osd.mil/denix/Public/Library/NCR/updated_sikes.html. Alternatively, contact National Sikes Act Coordinator Laura Henze at (703) 358-2398, e-mail: Laura_Henze@fws.gov, for this information.

Before you begin to either prepare a new INRMP or revise an existing INRMP, you must inform internal and external stakeholders within 30 days of undertaking the intended action. The overall agency coordination procedure to be followed for INRMP preparation or revision is summarized in Exhibit 9–1.

The INRMP as a Substitute for Critical Habitat Designation

The Endangered Species Act (ESA) was recently amended in two areas related to critical habitat on DoD training lands. Section 318 of the National Defense Authorization Act for Fiscal Year 2004 (Public Law No. 108–136) amended the ESA by adding a new section 4(a)(3). This section prohibits the USFWS from designating as critical habitat any lands or other geographical areas owned or controlled by the DoD, or designated for its use, that are subject to an INRMP, if the Secretary of the Interior determines in writing that the INRMP provides a benefit to the species for which critical habitat is proposed for designation.

Exhibit 9-1. Coordination Procedure When Updating an INRMP

The following steps should be followed when coordinating with the USFWS and State fish and wildlife agencies. Time lines may be altered by mutual agreement between the installation and the agency offices.

1. Notify agencies within 30 days of the intent to begin INRMP preparation or update process. Request agency participation in the preparation or update process.
2. Give agencies at least 60 days notice before delivering review draft documents. Forward copies of initial review draft to local USFWS field office (Local Office) and to State fish and wildlife agency (SF&W). Include in letters of transmittal to the agencies a request for written acknowledgement within 15 days of receipt of draft INRMP. Send copy of Local Office transmittal letter to the USFWS Regional Sikes Act Coordinator as notice that review process has begun.
3. The Local Office will provide written comments to installation and will forward copies of comments to Regional Sikes Act Coordinator and to SF&W director's office. Similarly, SF&W will provide written comments to installation and will forward copy of comments to Regional Sikes Act Coordinator.
4. When all comments have been considered, forward final draft INRMP along with letter documenting actions taken on USFWS and SF&W comments to USFWS Regional Office (Regional Office) and to SF&W director's office. Send copy of letter to Local Office.
5. The installation letter to the RO and the SF&W director's office should request that they provide the installation with consolidated written comments on the final draft INRMP within 60 days. Exceptions to this time line may include the need for formal Section 7 consultation or if the installation is requesting the INRMP substitute for designation of critical habitat. In these exceptions, request written notification from the Regional Office and Local Office of the new time line within 15 days of their receipt of the draft INRMP.

This exemption applies to areas that are or will be proposed for critical habitat designation. The USFWS is able to provide this exemption because, according to USFWS policy, if adequate special management or protection is provided by a legally operative plan, then habitat identified as essential to the protection and recovery of a species may be omitted from critical habitat designation[8].

The importance of the INRMP in such cases is paramount: the USFWS will assess the INRMP to determine its potential contribution to the conservation of the species in question, including protection, maintenance, and improvement of its habitat.

The USFWS has established the following three general criteria to determine whether an INRMP benefits the listed species in question:

1. **The INRMP provides a benefit to the species.** An exclusion under section 4(a)(3) requires that a legally operative INRMP be in place that addresses the maintenance and improvement of the primary constituent elements important to the species and manages for the long-term conservation of the species. To determine whether a plan provides this benefit, the USFWS will assess an INRMP's potential contribution to species conservation, including habitat protection, maintenance, and improvement projects and other related plan activities that address the particular conservation and protection needs of the species in question. In making the determination, the USFWS will consider the cumulative net benefits of the management activities for the length of the INRMP. These benefits must either maintain or provide for an increase in the species' population or maintain, enhance, or restore its habitat within the area covered by the plan.

2. **The INRMP provides certainty that the management plan will be implemented.** To provide the necessary assurances regarding implementation, the INRMP must demonstrate the following:
   – The installation is capable of accomplishing the objectives of the INRMP, has the authority to implement it and has obtained all necessary authorizations and approvals
   – There is adequate funding for implementation
   – The installation has an implementation time line for the conservation effort and the schedule is included in the INRMP.
3. **The INRMP provides assurances that the conservation measures will be effective.** The effectiveness of a conservation effort will be based on whether an INRMP includes the following:
   – Biological goals (broad guiding principles for the program) and objectives (measurable targets for achieving the goals)
   – Quantifiable, scientifically valid parameters that will demonstrate achievement of goals and standards for these parameters by which progress will be measured
   – Provisions for monitoring and, where appropriate, for adaptive management
   – Provisions for reporting progress on implementation, based on compliance with the implementation schedule, and effectiveness of the conservation effort, based on evaluation of quantifiable parameters
   – A description of a time line sufficient to implement the INRMP and achieve the benefits of the INRMP goals and objectives.

The USFWS intends to formalize these criteria and the process for written determination of a benefit to the species in their revised guidance for implementing the

Sikes Act. For information on the USFWS revised guidance, contact National Sikes Act Coordinator Laura Henze at (703) 358-2398, e-mail: Laura_Henze@fws.gov.

For INRMPs that are under review by the USFWS, a written determination that an INRMP provides benefit to the species will be included in the USFWS letter of concurrence for the INRMP. For an existing INRMP that has previously received concurrence from USFWS, the Service can make a stand-alone determination that the plan does provide the required conservation benefit to the species in question. The determination can be provided in a letter to the installation, a memorandum to the administrative record, or it can be made through the preamble to the critical habitat rule for the species in question.

The second area of the Endangered Species Act to be amended by Public Law No. 108–136 was section 4(b)(2). When designating critical habitat, the Secretary of the Department of Interior must now also consider the impact on national security, as well as an economic impact or other relevant impact. If the Secretary determines that the benefits of excluding an area from critical habitat designation outweigh the benefits of specifying an area as critical habitat, then that area may be excluded as critical habitat, unless that ruling would result in extinction of the species in question.

To be considered for exclusion under section 4(b)(2), the installation must provide comments to the record that indicate a national security or military readiness impact will occur if an area is designated as critical habitat.

Updating an INRMP

As the NRM, you know management priorities, what synergy exists among projects, and what can potentially be delayed and for how long before it becomes critical, affects mission readiness, or too costly to remedy. You should be able to use the INRMP as a basis for identifying management needs and priorities and to provide support for your decisions. However, to use the INRMP effectively, you must adopt a routine for maintaining and updating it. This can be done in several different ways, which are described below. However you choose to do it, it is vital that you choose a method, a routine, and a responsible party for updating your INRMP.

The Low-Tech Approach

A low-tech update approach is fine and is likely to be most readily adopted by installation staff. However, the low-tech approach should be more refined than penciling in information along the margins of the INRMP pages. One option is to use the INRMP update forms provided in the Appendix.

The update forms can be printed and completed by hand and then inserted into the hard copy of the INRMP, or they can be completed electronically and inserted into an electronic version of the INRMP. Exhibit A–2, the INRMP Master Update List, is designed to keep a running list of the various updates made to the INRMP and should be kept at the front of the INRMP. Exhibit A–3, the INRMP Update Report, is designed to be completed with the relevant information and inserted into the appropriate section of the INRMP: use these reports to replace writing notes into the INRMP margins.

Each completed INRMP update report should be logged onto the master update list and assigned the next log number. Maintaining these update forms will help during annual and 5-year reviews of the INRMP. They allow you to document the various activities

accomplished, new projects added, or reasons why a particular project was delayed or cancelled. You will no longer have to rely on your or other staff's recollections as to what did or did not occur in previous years.

The Higher-Tech Approach

A higher-tech approach to updating your INRMP is to submit updates electronically. Most standard installation information technology support can assist you in setting up this process. Exhibit 9–2 shows the key steps to set up the electronic update process.

The objective is to allow electronic submission of INRMP updates through the Web that can be easily reviewed and consolidated in preparation for interim or major INRMP updates. Key installation staff will have access to the Web-published INRMP and will be permitted to submit updates. Although these updates will appear associated with the relevant section of the INRMP, they will not be incorporated into the INRMP until reviewed and approved by the NRM or other assigned individuals responsible for maintaining and updating the INRMP. Because no updates are incorporated until approved, the integrity of the original INRMP is retained. These electronically submitted updates can easily be reviewed, searched, indexed, and so forth by the NRM, and a record of all changes made through multiple INRMP updates can be maintained to provide a historical record for the implementation of the INRMP.

A Fully Internet-Based Approach

A fully Internet-based INRMP can be a valuable management tool to the NRM and other installation and service staff, and it will enhance the usability and effectiveness of the INRMP. Such an INRMP can be made available locally on an installation or Service intranet system, or it can be published on the Web. Using Internet-based INRMP project reporting and tracking can be achieved directly by uploading electronic

Exhibit 9–2. Steps to Submitting Electronic Updates to the INRMP

1. Convert the INRMP to an HTML format suitable for Web publishing. Any electronic form of the INRMP can be converted to HTML.
2. Publish the HTML version of the INRMP on the installation Web site. If the installation does not have a Web site, then have your information technology support establish a Web site for the INRMP updates.
3. Convert the HTML static page forms into an on-line Web-based submission. Use the HTML versions of the INRMP update report forms available at http://www.denix.osd.mil/inrmp and convert them to an on-line Web submission.
4. Identify key installation staff with responsibility for maintaining the INRMP. Provide them with access authority for electronic submission of INRMP updates.
5. Submit updates by going to the relevant page in the Web-based INRMP. Click on the update icon, and enter information into the INRMP update form.

To update a particular page or section of the INRMP, go to the specific page or section in the Web-based INRMP and complete the INRMP update option. These on-line submissions (that is, the INRMP update forms) will be stored and linked to the appropriate pages in the INRMP.

Anyone submitting a new update can easily review any existing updates made to that section. The updates automatically will be logged into the master update form and can be reviewed, sorted, and searched.

forms and reports. Automated data collection and archiving can also be submitted directly into the INRMP database.

By setting up the INRMP as a Web page, the NRM, range manager, review agency or other stakeholder can navigate directly to relevant sections, search for specific topics, or link directly to references. Access to specific areas can be controlled by the installation, and custom home pages can be developed for different user groups, including the public. A fully Internet-based INRMP is also relatively easy to update. Descriptive sections on goals, objectives, and projects would not likely require updating, but sections recording progress to overall goals and objectives, which would be continuously tracked though the use of electronic reporting, can be easily summarized and updated.

Fort A.P. Hill is one of the first installations to develop an Internet-based INRMP. When it is completed, the NRMs will not only be able to write, edit, and review INRMP project reports, but they will also be able to assign access to certain reports so that the USFWS, the Virginia Department of Conservation and Recreation, or others can follow projects of interest by logging on through the Web. Access to reports and sensitive information is controlled through a password system. The public will have access to the overall INRMP and can readily navigate to areas of interest.

The main components of an Internet-based INRMP are the Web-publishable INRMP in HTML format (this forms the foundation of the Web site), the associated databases and report templates, supporting files such as graphics and tables, a user's guide, and a printable version of the INRMP. For information on the Fort A.P. Hill INRMP project,

contact Tim Southard, Natural Resources Specialist, Fort A.P. Hill, (804) 633-8745., e-mail: timothy_w_southard@belvoir.army.mil.

Additional Resources for Implementation

There are many resources available beyond this handbook that may be helpful for INRMP implementation. Exhibit A–4 provides a list of potentially useful Web sites on a range of natural resources topics.

Successful INRMP Implementation

Goals and objectives may not be met in the anticipated time or they may be revised significantly and even eliminated, but if sincere attempts are made to implement plan components, then the INRMP is being successfully implemented. There is no such thing as a failed INRMP — unless there is absolutely no attempt to implement.

In some cases, there may be valid reasons why certain plan components are not implemented. Lack of funds and lack of staff are frequently the cause of delays to implementation and are beyond the control of the NRM. In spite of this, you must continue to ensure that natural resources projects are detailed and prioritized in the INRMP. Ecosystem management cannot be successfully implemented by requesting funds only for Class I projects and activities. All INRMP projects (Class I through Class III) must be kept active by including them year after year in the budget requirements.

Maintaining consistency in your natural resources management, whether fully funded or not, will allow you to defend the INRMP and sustain it as a viable approach. Be true to the goals and objectives that you have worked hard to develop.

It may take several years for ecosystem management as implemented through INRMPs to be recognized as a flexible, cost-effective, sustainable approach to managing DoD lands that benefits both the installation and local communities — but the rewards inherent in implementing and maintaining the INRMP are substantial and far-reaching.

Reference Notes

1. Memorandum of the Deputy Under Secretary of Defense (Installations and Environment), 10 October 2002, *Implementation of Sikes Act Improvement Act: Updated Guidance.* Available at https://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Legacy/Sikes/max0002.pdf.
2. Department of Defense, Memorandum of 1 November 2004 regarding supplemental guidance to the October 2002 implementing guidance on the Sikes Act Improvement Act, *Supplemental Guidance for Implementation of the Sikes Act Improvement Act: Additional Guidance Concerning INRMP Reviews.* Text available at http://www.denix.osd.mil/denix/Public/Library/NCR/Documents/Supplemental-Sikes-signed-2004.pdf.
3. See Note 1 above.
4. See Note 1 above.
5. See Note 1 above.

6. U.S. Fish and Wildlife Service. *Guidance for Coordination of Department of Defense Sikes Act Integrated Natural Resource Management Plans*, 8 June 2001. Available at http://www.fws.gov/r9dhcbfa/sikes.pdf.
7. Section 101(a)(2) Sikes Act - mutual agreement etc. The Sikes Act Improvement Act of 1997, Public Law 105–85, Div. B. Title XXIX, Nov. 18, 1997; and codified at 16 U.S.C. § 670a et seq. (1998) (amending The Sikes Act of 1960, 16 U.S.C. § 670a et seq. (1996)). Full text can be found at http://thomas.loc.gov/home/thomas2.html or http://www4.law.cornell.edu/uscode/16/670a.html.
8. See Note 1 above.

Appendix
Natural Resources Manager Toolbox

This appendix contains various tools to help natural resources managers fulfill their responsibilities in INRMP preparation and implementation. Exhibits A–1 through A–3 contain a briefing checklist form and two other forms useful when managing changes to an INRMP. Exhibit A–4 is a list of natural resources Web sites.

To use the forms contained in Exhibits A–1, A–2, and A–3, you may either photocopy the form in this handbook or download a Microsoft Word electronic form. The electronic form (formatted for an 8-1/2-by-11-inch sheet) can be either photocopied or filled out in Microsoft Word. To access any of these Microsoft Word forms, go to http://www.denix.osd.mil/inrmp. (As Exhibit A–4 is a list and not a form, it is not available as a separate document.)

- **Exhibit A–1, Briefing Checklist.** A checklist for planning and conducting briefings, this form may be photocopied and used as a routine planning tool.
- **Exhibit A–2, INRMP Master Update List.** Use this form, along with the Exhibit A–3, to keep your INRMP current. Maintain a log on the master update list for every update to the INRMP, the time it was created, and which section and page

of the INRMP it affects. Keep the master update list in the front of the INRMP (electronic or hard copy).

- **Exhibit A–3, INRMP Update Report.** Use this form, along with Exhibit A–2, to record any updates to your INRMP. The update report provides a record of detailed information about each update, such as goal or objective, needed resources, start and end dates, and coordination and compliance requirements. Insert the update report into the relevant section of the INRMP (electronic or hard copy).
- **Exhibit A–4, Useful Web Sites for Natural Resources Managers.** At the time of distribution of this handbook, the Web site links were active. If you cannot locate these Web sites through the links provided, search for them using a Internet search engine.

Exhibit A–1. Briefing Checklist (page 1)

Below is a checklist that you can use to plan your briefing. To download your own electronic copy of the checklist, go to http://www.denix.osd.mil/inrmp. Once downloaded, the Microsoft Word file can be filled out electronically or printed.

The list is divided into five sections that cover briefing preparation: event planning, material and equipment coordination, creating a presentation, responsibilities during the briefing, and postbriefing responsibilities. Not every item may pertain to your briefing, and you may wish to add items, as needed.

Phase 1: Event Planning	*Responsible Persons*	*Completed?*
Decide if the briefing is an information briefing or a decision briefing.		
Select focus of briefing.		
Select location of briefing.		
Assign responsibility for reserving meeting space.		
Decide date, time, and length of briefing.		
Decide on participants and target audience.		
Assign responsibility for preparing guest list.		
Assign responsibility for preparing and issuing invitations.		
Make a trip to the briefing site to do a test run.		

Exhibit A–1. Briefing Checklist (page 2)		
Phase 2:Material and Equipment Coordination	*Responsible Persons*	*Completed?*
Briefing slide handouts (black-and-white or color)?		
Transparencies?		
Video equipment?		
Projector for color presentation?		
Writing surface (easel and pad, dry-erase board) and markers?		
Extra pens and pencils?		
Extra paper?		
Name tags?		
Markers?		

Exhibit A–1. Briefing Checklist (page 3)		
Phase 3: Creating the Presentation	*Responsible Persons*	*Completed?*
Identify the main points.		
Create visuals corresponding to main points (for example, PowerPoint slide presentation).		
Rehearse, making sure that time limits are observed.		
Finalize presentation (are main points communicated? is the briefing brief? are necessary approvals in place?), and rehearse again.		
Phase 4: Briefing Responsibilities	*Responsible Persons*	*Completed?*
Assign responsibility for speaking.		
Assign responsibility for operating projector.		
Assign responsibility for taking notes.		
Assign responsibility for distributing handouts.		
Assign responsibility for taking minutes, if needed.		

Exhibit A–1. Briefing Checklist (page 4)		
Phase 5: Postbriefing Responsibilities	*Responsible Persons*	*Completed?*
Meet to discuss how the briefing went and how to improve.		
Send thank-you notes to attendees (if necessary).		
Assign responsibilities for any follow-up actions. Follow-up action no. 1: Follow-up action no. 2:		

Exhibit A–2. INRMP Master Update List (page 1)

Use this INRMP master update list and the INRMP update reports (see Exhibit A–3) to keep your INRMP current. Consolidate forms from each staff member when completing annual or 5-year INRMP updates. For an electronic copy of this form in Microsoft Word, go to http://www.denix.osd.mil/inrmp.

Log each INRMP update report on this INRMP master update list. Complete this form electronically or in hard copy, and insert into the INRMP. Create more pages as necessary. See the particular INRMP update report for more details on that update.

Report Number	Date Created	INRMP Section / Page	Project/Action
1		/	
2		/	
3		/	
4		/	
5		/	
6		/	
7		/	

Exhibit A–2. INRMP Master Update List (page 2)			
8		/	
9		/	
10		/	
11		/	
12		/	
13		/	
14		/	
15		/	
16		/	
17		/	
18		/	

Exhibit A–3. INRMP Update Report (page 1)

Use this INRMP update report, along with the INRMP master update list (see Exhibit A–2), to keep your INRMP current. For an electronic copy of this form in Microsoft Word, go to http://www.denix.osd.mil/inrmp.

Complete this form electronically or in hard copy, and insert into the INRMP. Use this report to list all information related to a change in your existing INRMP. Fill in the top section with the identifying information for the change: the report number (number your update reports sequentially), the relevant INRMP section and page, the name of the person preparing this update report, and the type of change to the INRMP. The bottom section contain areas in which to describe the impact of the INRMP update.Consolidate forms from each staff member when completing annual or 5-year INRMP updates.

Report Number _____
INRMP Section _____, Page _____
Prepared by _____

Type of Update:
- ☐ *Supplement* Existing Project or Action
- ☐ *Remove* Existing Project or Action
- ☐ *Create* New Project or Action

1. Project or action.
2. Goal / objective for the project or action.

Exhibit A–3. INRMP Update Report (page 2)		
3. Related projects. List relevant INRMP sections and pages. Indicate if these projects are contingent on completion of project or action listed in 1 above.		
4. Anticipated start / end dates. Indicate whether one-time (e.g., survey) or routine (e.g., monitoring).		
5. Resources needed.		
Initial Costs (+) / Savings (-): $	Yearly Costs (+) / Savings (-): $	
Installation Labor: hours	Volunteer Labor: hours	Contractor Labor: hours
Equipment:		
Training:		
IT/Information Management:		

Exhibit A–3. INRMP Update Report (page 3)
6. Coordination requirements. Include estimated timeline/schedule.
Installation Offices/Programs:
Local Authorities:
State Agencies:
Federal Agencies:
7. Compliance requirements. List appropriate regulations, documentation, permits.
Service/Installation:
State:
Federal:
8. Briefly describe reason for update.

Exhibit A–4. Useful Web Sites for Natural Resources Managers (page 1)

Colleges and Universities

Colorado University Department of Geography Resources
http://www.colorado.edu/geography/virtdept/resources/data/data.htm

University of Illinois Extension Programs
http://www.extension.uiuc.edu/welcome.html

DoD

Air Force Center for Environmental Excellence
http://www.afcee.brooks.af.mil/afceehome.asp

Air Force Safety Center
http://afsafety.af.mil

Armed Forces Pest Management Board
http://www.afpmb.org

DENIX
http://www.denix.osd.mil

Legacy Resource Management Program
http://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Legacy/legacy.html

U.S. Army Environmental Center
http://aec.army.mil

U.S. Army Environmental Center – Environmental Reporting
http://www.aec.army.mil/usaec/reporting/indtml

U.S. Army ITAM Home Page
http://srp.army.mil/public/home.jsp

U.S. Army Regional Environmental Offices
http://www.aec.army.mil/usaec/reo/index.html

U.S. Marine Corps
http://www.hqmc.usmc.mil/hqmcmain.nsf/frontpage

U.S. Navy Environmental Program
http://web.dandp.com/enviroweb

Federal Government (Non-DoD)

California Desert Managers Group
http://www.dmg.gov

California Information Node
http://cain.nbii.gov

Exhibit A–4. Useful Web Sites for Natural Resources Managers (page 2)

Central Southwest/Gulf Coast Information Node
http://cswgcin.nbii.gov

Cooperative Ecosystem Studies Units
http://www.cesu.org/cesu/rfps/overview.html

Federal Highway Administration – Wildlife Road Crossings
http://www.fhwa.dot.gov/environment/wildlifecrossings/index.htm

Federal Statistics
http://www.fedstats.gov

Great Basin
http://greatbasin.nbii.gov

Invasive Plant Species
http://www.nps.gov/plants/alien

Invasive Species
http://www.invasivespecies.gov

Mojave Desert Ecosystem Program
http://www.mojavedata.gov

National Biological Information Infrastructure
http://www.nbii.gov

National Fire Weather Page
http://fire.boi.noaa.gov

National Park Service
http://www.nps.gov

Natural Resources Conservation Service
http://www.nrcs.usda.gov

Mountain Prairie Information Node
http://nrin.nbii.gov

Pacific Basin Information Node
http://pbin.nbii.gov

Pacific Northwest Information Node
http://pnwin.nbii.gov

Southern Appalachian Information Node
http://sain.nbii.gov

Southwest Information Node
http://swin.nbii.gov

U.S. Department of Agriculture
http://www.usda.gov

Exhibit A–4. Useful Web Sites for Natural Resources Managers (page 3)

U.S. Department of Agriculture Forest Service
http://www.fs.fed.us

U.S. Department of Agriculture Forest Service Fire Effects Information System
http://www.fs.fed.us/database/feis

U.S. Department of the Interior Bureau of Land Management
http://www.blm.gov

U.S. Environmental Protection Agency
http://www.epa.gov

U.S. Environmental Protection Agency Community-Based Environmental Protection Program
http://www.epa.gov/ecocommunity

U.S. Environmental Protection Agency Landscape Sciences
http://www.epa.gov/nerlesd1/land-sci

U.S. Environmental Protection Agency Office of Water
http://www.epa.gov/OW

U.S. Fish and Wildlife Service
http://www.fws.gov

U.S. Fish and Wildlife Service Endangered Species Bulletin
http://endangered.fws.gov/bulletin.html

U.S. Fish and Wildlife Service List of Offices by Region
http://offices.fws.gov

U.S. Fish and Wildlife Service Section 7 Consultation Handbook
http://endangered.fws.gov/consultations/s7hndbk/s7hndbk.htm

U.S. Geological Survey
http://www.usgs.gov

U.S. Geological Survey GAP Program
http://www.gap.uidaho.edu

U.S. Geological Survey Research on Wetlands and Submersed Aquatic Vegetation
http://water.usgs.gov/nrp/proj.bib/sav/wethome.htm

Flora and Fauna

Bats
http://talpa.unm.edu/batcall/index2.html

Exhibit A–4. Useful Web Sites for Natural Resources Managers (page 4)

Biota of North America Program
http://www.bonap.org

Biota of North America Program – Synchronized Checklist of Vascular Plants of the United States, Puerto Rico and the Virgin Islands
http://www.csdl.tamu.edu/FLORA/b98/check98.htm

Bird Conservation Node
http://birdcon.nbii.gov

Invasive Species Information Node
http://invasivespecies.nbii.gov

Longleaf Alliance (restoration of longleaf forests)
http://www.longleafalliance.org

Wildlife Control
http://www.aphis.usda.gov/ws

Wildlife Disease Information Node
http://wildlifedisease.nbii.gov

News and Publications

Congressional Environmental News
http://www.greensheets.com

Ecology and Society
http://www.ecologyandsociety.org/Journal

Ecology WWW
http://pbil.univ-lyon1.fr/Ecology/Ecology-WWW.html

University of Michigan Federal Document Center
http://www.lib.umich.edu/govdocs/federal.html

Vegetative Practices Guide for Nonpoint Source Pollution Management
http://www.hrpdc.org/publications/techreports/abstracts/pep99%2D02.shtml

Wetland Publications
http://www.wes.army.mil/el/wetlands/wlpubs.html

Nonprofit Organizations

American National Standards Institute
http://www.ansi.org

Chesapeake Bay Program
http://www.chesapeakebay.net

Groundwater Foundation
http://www.groundwater.org

Exhibit A–4. Useful Web Sites for Natural Resources Managers (page 5)

International Wildlife Rehabilitation Council
http://www.iwrc-online.org

National Council for Science and the Environment
http://www.cnie.org

The Nature Conservancy
http://nature.org

NatureServe
http://www.natureserve.org

Training

Compendium of Conservation Tools
http://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Biodiversity/eight.html

Defense Information School
http://www.dinfos.osd.mil

Environmental Compliance and Protection Manual
http://www.denix.osd.mil/denix/Public/Policy/Marine/5090.2A/ch5.html

Federal Law Enforcement Training Center (FLETC)
http://www.fletc.gov

Metadata Training
http://www.nbii.gov/datainfo/metadata/training

Natural Resources Research Information Pages
http://www4.ncsu.edu/~leung/nrrips.html

U.S. Air Force School of Aerospace Medicine
http://www.denix.osd.mil/denix/Public/Library/PRO97/usafsam.html

U.S. Air Force Center for Environmental Excellence
http://www.afcee.brooks.af.mil/products.asp

U.S. Department of Agriculture Forest Service Continuing Education for Natural Resource Professionals
http://www.fs.fed.us/biology/education

U.S. Department of Defense Environmental Scholarship/Fellowship and Grants Program
http://cess.afit.af.mil/ISEERB.cfm

U.S. Environmental Protection Grant-Writing Tutorial
http://www.epa.gov/grtlakes/seahome/grants.html

Exhibit A–4. Useful Web Sites for Natural Resources Managers (page 6)	
U.S. Environmental Protection Inventory of Watershed Training Courses http://www.epa.gov/osos/watershed/wacademy/wstrain.html U.S. Fish and Wildlife Service National Conservation Training Center http://training.fws.gov	Wildland Fire and Aviation Management Training http://www.nps.gov/fire/developmental/dev_training_firemgttraining.html

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