



**Report of
Land Managers and Trainers Workshop
11-12 Jan 1999
Fort Benning, GA**

**Ecosystem Characterization and Monitoring Initiative
(ECMI)**

**Strategic Environmental Research and Development Program
Ecosystem Management Project (SEMP)**

US Army Engineer Research and Development Center
Environmental Laboratory, Vicksburg, MS
Construction Engineering Research Laboratory, Champaign, IL

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INTRODUCTION

The objective of the SERDP Ecosystem Management Project (SEMP), Ecosystem Characterization and Monitoring Initiative (ECMI) is to design a baseline ecosystem monitoring program suited to defense installations in the southeastern U.S. and demonstrate this program at Ft. Benning, GA. As part of the design process, a series of workshops have been conducted to solicit input from several interest groups regarding the types of data to be included in the monitoring program. The five primary interest groups included in the design process are 1) military land managers and trainers, 2) research scientists and academicians and 3) ecosystem model developers, 4) currently funded SEMP ecosystem work units and 5) other established long term monitoring programs.

This report documents the first of these workshops, with Ft. Benning land managers and trainers, held 11-12 Jan 1999 at Ft. Benning, GA. Participants in the workshop included representatives from the Ft. Benning Directorate of Public Works, Environmental Management Division, the Directorate of Operations and Training, Range Division, The Nature Conservancy, and the US Army Engineer Research and Development Center, Environmental Laboratory. Table 1 lists the workshop participants. Table 2 is the original agenda for the workshop. Figure 1 is a photograph of the workshop participants.

WORKSHOP ORGANIZATION

The purpose of the workshop was to get input to the ecosystem monitoring plan in relation to the Ft. Benning natural resource management goals and objectives. The workshop was conducted as a series of small group discussions organized around the goals and objectives as stated in the 1/7/99 draft version of the Ft. Benning Integrated Natural Resource Management Plan (INRMP). Forty objectives were selected from the 1/7/99 draft INRMP for discussion during the workshop. These forty objectives were divided into three broad topic areas. The participants were also divided into three groups. One topic area was assigned to each group. The topic areas were:

- 1) training needs and effects of training activities
- 2) ecosystem characterization, monitoring and management and
- 3) longleaf pine, fire management, and threatened and endangered species.

Table 3 lists the participants by group and identifies the objectives discussed by each group. The objective numbering scheme follows that of the 1/7/99 draft INRMP.

Two goals were established for the small group discussions. The first was to identify a desired endpoint for each objective. The second was to identify information needs required to meet the objective or to verify that the objective had been met. In most cases, time allowed for the identification of only general information needs. Each group summarized their discussion of each objective in a worksheet designed for that purpose. Appendix A contains the complete set of worksheets as completed by the groups. The worksheets are arranged numerically by management goal and objective as presented in the 1/7/99 draft INRMP.

GROUP DISCUSSION SUMMARY

Short summaries of group discussions are presented below. More detail on the endpoints identified and the information needs discussed is given in the worksheets in Appendix A.

Group 1. Training Needs and Effects of Training Activities.

Military training is the primary and dominant installation activity affecting natural resources and associated ecosystem process on the installation. The group identified four general requirement categories associated with training related management endpoints. In addition, the group deliberated on information requirements associated with the status of installation ecological conditions. Each of these general categories are summarized below.

First, the role of natural resources in meeting and sustaining the current and future training mission must be identified. General information requirements identified in this area include:

- a) components of training realism
- b) future training requirements
- c) landscape features and vegetative cover that support training realism
- d) type, distribution and intensity of training activities
- e) effectiveness of “nesting” training corridors within training areas.

Second, the capability of natural resources to sustain current and future training activities must be determined and strategies developed to ensure training activities are sustainable. General information requirements identified in this area include:

- a) status of natural resource conditions
- b) current and future training uses
- c) the ability of the land to support training (carrying capacity)
- d) optimum military land use
- e) natural resource based training use zones
- f) monitoring data on introduced species.

Third, best management practices (BMP's) must be identified and verified to address training impacts and enhance the ability of natural resources to support training with an emphasis on edges between different vegetation types. General information requirements identified in this area include:

- a) pre- and post- BMP implementation conditions of watersheds and reclamation sites
- b) cost effectiveness of BMPs
- c) evaluation of management techniques with emphasis on edge management.

Fourth, management actions such as the development of carrying capacity and zoning strategies must be institutionalized in installation regulation and policy. This will enhance compliance and increase awareness of the contribution of natural resources to support training realism and the overall training mission. General information requirements identified in this area include:

- a) identify a linkage of natural resource condition to the Installation Status Report (ISR) and the Environmental Compliance Assessment System (ECAS)
- b) define focused natural resource management activities which support ISR and ECAS and contribute to an Installation Design Guide (IDG).

Fifth, the group discussed objectives associated with determining the present status or condition of ecosystems on the installation in order to support the development of restoration plans. General information requirements identified in this area include:

- a) identification of ecosystem conditions at reference sites
- b) the degree to which current ecosystem conditions approach reference conditions
- c) location of existing or potential reference ecosystems
- d) ecological status (e.g. successional stage or health) of ecosystems
- e) potential of ecosystems to approach reference conditions.

Group 2. Ecosystem Characterization, Monitoring, and Management

Group two identified five areas that require basic ecosystem characterization and monitoring data to supply an adequate understanding of plant and animal occurrences and ecological processes. Locations of interest for these characterizations were installation specific and regional. Endpoints for the group of objectives represented by the five areas were expressed generally as: 1) conservation of biological diversity, 2) maintenance of ecological integrity, 3) management of selected species, 4) development of restoration plans, and 5) priority setting for management actions relative to resource constraints. There was special focus by the group on aquatic and wetland ecosystems in the belief that their condition is heavily tied to actions in terrestrial systems, especially those activities involving soil disturbance. The five areas where general characterization information is required to support multiple goals were identified as:

- a) most aspects of hydrology
- b) soil biotic properties and nutrient cycling
- c) biodiversity, at several scales
- d) identification and monitoring of keystone species
- e) organization of the installation into ecologically appropriate management units.

A special concern for the group was the existence and maintenance of areas designated as ecologically unique. The concept of maintenance was inclusive of actions to 1) determine suitable and allowable training uses, 2) apply management prescriptions, 3) delineate appropriate and adequate buffers, and 4) identify new areas. In addition, basic information requirements for unique areas included:

- a) physical characteristics, e.g., slope, aspect
- b) sound criteria for defining uniqueness and determining buffers

- c) effects of different training uses
- d) sensitivity of the area to outside influences.

Several objectives referred to managing problematic non-native species to eliminate or minimize adverse impacts to natural resources. Negative effects from non-native species include degradation of military training activities, impacts on listed species and a reduction of ecological integrity. Problem species include plants such as kudzu, animals such as feral swine, and insects and disease organisms that affect timber. General information requirements identified in this area included:

- a) identification of current and potential problem species
- b) description of the growth habit of potential problem species, such as the likelihood it will be a problem, how it will get to the installation, and the characteristics of the organism that make it invasive
- c) description of the types of impacts expected
- d) possible control or eradication measures.

Group 3. Longleaf Pine, Fire Management, Ecotones and Threatened and Endangered (T&E) Species

Sustainable management of red cockaded woodpecker (RCW) habitat is a major goal of the Ft. Benning land management program. This has resulted in significant emphasis on the function of long leaf pine (LLP) and associated ecosystems in support of this goal. The appropriate application of fire and silvicultural practices is a key strategy to maintaining functioning ecosystems that address the requirements of RCW and other associated T&E species. Several program objectives and associated information requirements under this goal were identified.

An appropriate mix of LLP and hardwoods must be maintained using natural processes and management intervention such as fire and silvicultural practices to support the training mission, key target species, and other identified land uses. General information requirements identified to determine the mix included:

- 1) knowledge of historic conditions
- 2) specific conditions of the site
- 3) mix needed to support training goals
- 4) mix needed to support RCW goals.

Emphasis was placed on the need to restore and maintain LLP understory consistent with historical conditions in terms of diversity levels and species composition. The resulting understory conditions are expected to support RCW management objectives and military training goals that require long lines of sight. General information requirements identified in this area included:

- a) appropriate reference understory conditions
- b) existing understory conditions
- c) vegetation map to provide context for stratification
- d) vegetation information at the association level.

Ecotones were identified as key ecosystem components having significant training and ecological importance. Fire was identified as a key element in an effective and sustainable ecotone management program. The group emphasized LLP/hardwood and LLP/wetland ecotones. General information requirements identified in this area included:

- a) information to test the assumption that ecotones can be sustained under natural conditions
- b) hydrologic regime
- c) ground truthed wetlands delineation
- d) characterization of ecotones
- e) post burn monitoring
- f) appropriate mix of hardwoods in ecotone areas.

Administrative requirements for T&E species were identified as a key component of the management program with well defined management endpoints. General information requirements identified in this area included:

- a) T&E species inventories including species distribution and abundance
- b) habitat monitoring data
- c) habitat protection strategies
- d) population monitoring
- e) management plans.

All three groups discussed objectives related to the use of Best Management Practices (BMPs) in all soil disturbing activities. There was general agreement that better methods for measuring or monitoring the effectiveness of applied BMP was necessary.

SUMMARY AND FOLLOW - UP

As mentioned in the introduction, input from five interest groups will be combined to guide the design of the ECMI baseline ecosystem monitoring program. The workshop documented here served to identify information land managers and trainers believe to be important in meeting Ft. Benning integrated natural resource management objectives. A second workshop was conducted with research scientists and academicians 26-28 Jan 1999. The research scientists concentrated on identifying information needed to understand and monitor fundamental ecosystem processes and properties. A review of the information requirements of current and emerging ecosystem models applicable to military lands is underway. The data collection needs and strategies of currently funded SEMP work units to be conducted at Ft. Benning are being tracked by ECMI. In addition to these sources, the experience, structure and content of other on-going long term monitoring programs are being evaluated. The various perspectives and information requirements of these interest groups will be combined, compared and evaluated during the design phase of the Ft. Benning monitoring plan.

Table 1. Land Managers Workshop Participants

NAME	AFFILIATION	PHONE, FAX	MAILING ADDRESS	E-MAIL
Barron, Michael	ATZB-PWN-R	706-544-7080	USAIC Bldg 5884 Ft Benning, GA 31905-5122	barronm@ benning.army.mil
Brent, John	ATZB-PWN	706-545-4766	USAIC Bldg 6, Meloy Hall, RM 309 Ft Benning, GA 31905-5122	brentj@ benning.army.mil
Caldwell, Skip	ATSH-OTR	706-545-3446	USAIS Bldg 2850 Ft Benning, GA 31905-5000	caldwella@ benning.army.mil
Davo, Theresa	ATSH-OTR	706-545-6135 706-545-1124	USAIS Bldg 2905 Ft Benning, GA 31905-5000	davot@ benning.army.mil
Druckman, Randy	ATZB-PWN-R	706-544-7068	USAIC Bldg 5884 Ft Benning, GA 31905-5122	druckmanr@ benning.army.mil
Greenlee, Jack	ATZB-PWN-R	706-544-7080	USAIC Bldg 5884 Ft Benning, GA 31905-5122	greenleej@ benning.army.mil
Hall, John	The Nature Conservancy	706-682-0104	USAIC ATZB-PWN-R Bldg 5884 Ft Benning, GA 31905-5122	john-hall@ tnc.org
Hollon, Gary	ATZB-PWN-R	706-544-7070	USAIC Bldg 5884 Ft Benning, GA 31905-5122	hollong@ benning.army.mil
Jackson, Scott	WES-EN-R	601-634-2105 601-634-3726	3909 Halls Ferry Road Vicksburg, MS 39180	jacksor@ mail.wes.army.mil
Kasul, Dick	WES-EN-R	601-634-3921 601-634-3726	3909 Halls Ferry Road Vicksburg, MS 39180	kasulr@ mail.wes.army.mil
Kesselring, Dick	ATSH-OTR	706-545-3642	USAIS Bldg 2905 Ft Benning, GA 31905-5000	kesselringr@ benning.army.mil

(Continued)

NAME	AFFILIATION	PHONE, FAX	MAILING ADDRESS	E-MAIL
Table 1 (Concluded)				
Kosky, Patty	Colorado State University, CEMML	706-545-7882	USAIS ATSH-OTR Bldg 2905 Ft Benning, GA 31905-5000	davot@benning.army.mil
Kress, Rose	WES-EN-C	601-634-3665 601-634-3726	3909 Halls Ferry Road Vicksburg, MS 39180	kressr@mail.wes.army.mil
Larimore, Bob	ATZB-PWN-R	706-544-7076	USAIC Bldg 5884 Ft Benning, GA 31905-5122	larimorer@benning.army.mil
Markham, Johnny	ATSH-OTR	706-545-4493	USAIS Bldg 2905 Ft Benning, GA 31905-5000	markhamj@benning.army.mil
O'Neil, Jean	WES-EN-S	601-634-3641 601-634-3726	3909 Halls Ferry Road Vicksburg, MS 39180	oneill@mail.wes.army.mil
Price, David	CERL-LL-N	800-872-2375 ext. 5221 217-398-5470	2902 Newmark Drive Champaign, IL 61822	d-price@cecer.army.mil
Swiderek, Pete	ATZB-PWN-R	706-544-7077 706-544-6570	USAIC Bldg 5884 Ft Benning, GA 31905-5122	swiderekp@benning.army.mil
Tazik, Dave	WES-EN	601-634-2610 601-634-3726	3909 Halls Ferry Road Vicksburg, MS 39180	tazikd@mail.wes.army.mil

Table 2. Original Agenda

**ECOSYSTEM CHARACTERIZATION AND MONITORING INITIATIVE
FT. BENNING ECMI /LAND MANAGERS WORKSHOP**

**AGENDA
11-12 JAN 1999**

The overall objective of the workshop is to obtain input to the ECMI from the perspective of Fort Benning land managers and trainers. Because of the complementary nature of the ECMI and INRMP, the workshop will begin with the framework provided by prior work on the INRMP and go forward from there.

Monday, Jan 11 Afternoon, Infantry Hall, Bldg. 4, Room 402

- 1300 – 1315** Introductions – (Davo) (15 min)
1315 – 1345 Summary and Review of ECMI Tasks – (Tazik, Kress) (45 min)
Includes status report on watershed analysis
1345 – 1400 Process for evaluating monitoring needs related to INRMP objectives
Includes instructions for Breakout I (O'Neil) (15 min)
- 1400 – 1415** BREAK (15 min)
- 1415 – 1615** Breakout I (2 hours with break)
1615 – 1630 Review & Comment on Breakout I – (O'Neil, Groups) (15 min)

Tuesday, Jan 12 AM

- 0800 – 0830** Review & Comments – (O'Neil, Groups) (30 min)
Group Reports; Instructions for Breakout II
0830 – 1000 Breakout II (90 min)
- 1000 – 1015** BREAK
- 1015 – 1115** Breakout II con't (60 min)
1115 – 1200 Reports and Summary of Breakout II – (O'Neil, Groups) (45 min)
Includes Q&A; Wrap up; Actions Items etc.

Table 3. Land Managers Workshop Participants by Group

	GROUP 1 Training Needs / Effects of Training Activities	GROUP 2 Ecosystem Characterization / Monitoring / Management	GROUP 3 Longleaf Pine / Pine Ecotones / Threatened and Endangered Species
Participants:	Brent	Davo	Barron
	Caldwell	Druckman	Greenlee
	Hollon	Larimore	Hall
	Kosky	Swiderek	Markham
	Kesselring		
Facilitator, Recorder:	Jackson, Price	O=Neil, Kress	Tazik, Kasul
Objectives*:	1a, 1b, 1c, 1d, 1e, 1f, 3d, 7c, 9a, 9b, 9f, 19b	3d, 5g, 6a, 6d, 9a, 11e, 11f, 12e, 12f, 12g, 12h, 12i, 13b, 14a, 14b, 19b	3b, 3d, 3e, 3f, 3g, 4d, 5d, 7c, 7g, 7l, 9a, 10b, 10d, 10e, 10h, 13c, 13d, 19b

*Objective numbering scheme follows that of the 7 JAN 99 Draft INRMP.

Figure 1. Ecosystem Characterization and Monitoring Initiative Workshop, Ft. Benning, GA, 11-12 JAN 1999



top: Dick Kesselring, Bob Larimore, Michael Barron;
3rd row: Jean O'Neil, David Price, Dave Tazik, Patty Kosky;
2nd row: John Hall, Pete Swiderek, Rose Kress, Randy Druckman, Scott Jackson;
1st row: Dick Kasul, Theresa Davo, Gary Hollon;
front: John Brent; (**not pictured:** Skip Caldwell, Johnny Markham)