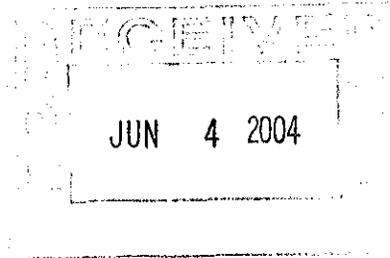




DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS ARNOLD ENGINEERING DEVELOPMENT CENTER (AFMC)  
ARNOLD AIR FORCE BASE, TENNESSEE

Mr. Lee A. Barclay, Ph.D.  
Field Supervisor  
Fish and Wildlife Service  
446 Neal Street  
Cookeville, TN 38501

1 June 2004



SUBJECT: Cooperative Management Agreement (CMA) for Eggert's Sunflower

Dear Mr. Barclay,

The USFWS requested Arnold AFB (AAFB) to enter into a Cooperative Management Agreement (CMA) for the management of Eggert's sunflower, a federally listed threatened species (12 December 2003 USFWS letter, same subject as above). This request is in support of the Eggert's Sunflower Recovery Plan criteria to obtain long-term conservation/protection of 20 geographically distinct, self-sustaining populations provided through management agreements or conservation easements. Management agreements must provide for maintenance or improvement of habitat for the populations of the species.

AAFB proposes a CMA (attachment 1) which incorporates conservation strategies based on ecosystem management principles. The Eggert's sunflower is best sustained on AAFB by using a course filter conservation target strategy developed by the AAFB Ecosystem Management Core Team. Many rare and sensitive species can be conserved and managed if grouped into like natural communities and like ecological processes are employed. Fire and hydrology are the two key ecological processes on AAFB. Therefore, the Barrens community was selected as the course filter (natural community) by the core team to conserve some 47 rare species, including the Eggert's sunflower. Management activities that will be applied include the application of prescribed fire, forest canopy/under-story thinning, invasive pest plant management, restoration of natural hydrology, and control of unauthorized anthropogenic disturbances. Monitoring to track management impacts will be conducted to determine ecological community status and trends.

AAFB will provide long term conservation of Eggert's sunflower through the restoration and maintenance of the Barrens Ecosystem. AAFB will conduct Barrens restoration and management for the facilitation of this conservation target on 3,544 acres (see map, attachment 2). This CMA is for a term of 2 years, however our intentions are to incorporate this agreement into our next Cooperative Integrated Natural Resources Management Plan (INRMP) scheduled for development, coordination, and approval in 2006. The Cooperative INRMP will be jointly developed, coordinated and approved by AAFB, USFWS Region IV, and Tennessee Wildlife Resources Agency.

Please review and sign the CMA at your earliest convenience and return the original to my office at the following address:

AEDC/SDE  
100 Kindel Drive, Suite A-228  
Arnold AFB, TN 37389-1228

We look forward to the implementation of this CMA to further the conservation of Tennessee's important natural resources. If you have any questions please contact my Conservation Manager, Mr. Rick McWhite, at (931) 454-5086.



Charles H. King  
Chief, Environmental Management Division

Attachments:

1. Cooperative Management Agreement
2. Barrens Map

cc:

SDE (R. McWhite)

# COOPERATIVE MANAGEMENT AGREEMENT

Between

**THE U.S. DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
TENNESSEE FIELD OFFICE  
COOKEVILLE, TENNESSEE**

And

**DEPARTMENT OF DEFENSE  
UNITED STATES AIR FORCE  
ARNOLD ENGINEERING DEVELOPMENT CENTER  
ARNOLD AIR FORCE BASE  
TULLAHOMA, TENNESSEE**

FOR

**THE MANAGEMENT OF**

**EGGERT'S SUNFLOWER (*HELIANTHUS EGGERTII*)**

## **Purpose**

This Cooperative Management Agreement (CMA) is entered into between the U.S. Department of Interior, Fish and Wildlife Service (USFWS) and U.S. Air Force, Arnold Engineering Development Center, Arnold Air Force Base (AAFB) in Tullahoma, Tennessee. The purpose of the CMA is to provide long-term conservation of Eggert's sunflower on property owned by the Department of Defense through the implementation of habitat management activities that have shown to be effective in sustaining occurrences of the Eggert's sunflower on AAFB.

The role that AAFB can serve in the long-term conservation of Eggert's sunflower is recognized by both parties. Therefore, the objective of this agreement is to jointly commit to the management and conservation of the species on AAFB. This objective will be accomplished by implementing management activities described in the AAFB Barrens Management Plan (BMP). These management measures have proven effective at maintaining and/or improving the distribution of Eggert's sunflower on AAFB. Management activities that will be applied include the application of prescribed fire, forest canopy/understory thinning, invasive pest plant management, and control of unauthorized anthropogenic disturbances. Monitoring to track management impacts will be conducted to determine ecological community status and trends.

## **Description of the Species**

Eggert's sunflower is a perennial herb with a colonial tendency. Numerous related plants can arise from an individual parent plant through extensive rhizomes. Individual stems can reach heights of over two meters and are smooth and waxy with a distinct blue cast. Leaves are opposite (in 7-15 pairs), entire, sessile (stalkless), taper at the base, and they are scabrous (rough) above and white-glaucous and smooth below. Flowering is primarily in August and September, and there are typically few flower heads composed of both yellow ray and disk flowers. Flower heads are 2.0-2.5 cm across the disk and up to 8.0 cm across the rays. Seeds generally mature during September and October. Since individuals can be established via seed germination or vegetative growth through rhizomatous extensions, genetic composition of clusters of plants is difficult to determine.

Eggert's sunflower typically occurs on rolling-to-flat uplands and in full sun or partial shade. It's often found in open fields or in thickets along woodland borders and with other tall herbs and small trees. It persists in, and may even invade, roadsides, power line rights-of-way, or fields that have suitable open habitat. The distribution of this species shows a strong correlation with the barrens (and similar habitats) of the Interior Low Plateau Physiographic Province, with some records from the Cumberland Plateau Section of the Appalachian Plateau Physiographic Province. Historically, barrens communities were maintained by periodic fires, drought, soil conditions, and grazing, resulting in a semi-open canopy and herbaceous understory.

## **Management Strategies for Eggert's Sunflower Occurrences on AAFB**

Long term conservation of Eggert's sunflower will be achieved through the restoration and maintenance of the Barrens Ecosystem, one of four conservation targets on AAFB. To support this CMA, AAFB will conduct Barrens restoration and management for the facilitation of this conservation target on 3,544 acres. Management regimes to mimic natural disturbances will be used within this Barrens conservation target area for habitat improvement and maintenance. Barrens management will likely increase the spatial distribution and abundance of Eggert's sunflower at AAFB, whereby increasing the coverage of Eggert's sunflower occurrences. Management will be coupled with monitoring to help track impacts to the plant. AAFB and the USFWS will meet every two years to review monitoring data, protocols, and management actions. Revisions to the BMP will be developed cooperatively with the USFWS.

This Cooperative Management Agreement does not obligate USFWS or AAFB to the provision of resources to the other, or to the expenditure of any funds.

This Cooperative Management Agreement is for a term of two years from the date of the last signature hereto, and will be incorporated into the AAFB Cooperative Integrated Natural Resources Management Plan (INRMP) in 2006. The Cooperative INRMP is developed and approved by the Installation Commander, USFWS Southeast Regional Director, and the Executive Director of the Tennessee Wildlife Resources Agency. Signatures on the 2006 INRMP will constitute continued commitment to the management and conservation of Eggert's sunflower on AAFB from 2006-2010.

Arnold Engineering Development Center  
Arnold Air Force Base

*David L. Stringer*      *20 May 04*

DAVID L. STRINGER, Brig Gen, USAF  
Commander

Date

U.S. Fish and Wildlife Service

*Lee A. Barclay*      *6/29/04*

Lee A. Barclay  
Field Supervisor, Cookeville Field Office

Date

