

Adaptation of User Interface to ArcView (Spray Advisor) - GYPSES

FINAL PROGRESS REPORT

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Project Overview and Description:

The USDA Forest Service has coordinated the development of a wide array of computer-based tools used in support of pest control spraying operations. These tools provide guidance in planning and assessing the results of aerial spray applications. The overall goal of this effort is to further the coordination of many of the previously developed tools into a comprehensive, stand-alone software package called the Spray Advisor.

For this project, the Natural Resource Analysis Center (NRAC) at West Virginia University (WVU) has coordinated in Spray Advisor software interface development with others including the Canadian Forest Service (CFS) and Continuum Dynamics Inc.

The CFS is providing overall support for interface development of the stand-alone Spray Advisor system. NRAC responsibilities include development of specific GIS functions for the Spray Advisor using ESRI's ArcView 3.x software product. NRAC is also responsible for technical documentation for the ESRI-based portion of the final Spray Advisor product.

Completion of Project Goals and Objectives:

Project objectives from the original project narrative dated July 16, 2002 are listed below, along with an assessment of actual accomplishments towards each objective during the project's duration.

- Objective: Incorporation of spray block digitizing capabilities with Spray Advisor interface (approximate completion: 2-3 months after project start date)

This objective was met during the project period. The ArcView 3x interface for use with stand alone Spray Advisor now includes spray block editing functions.

- Objective: Capability to perform spray block selection, passing selected spray block information to/from Spray Advisor interface.

Completed during budget period. Data transfer to/from stand alone Spray Advisor interface developed by CFS was programmed.

- Objective: Ability to import/export airborne GPS flight line information within framework of new Spray Advisor interface.

The import/export capabilities for GPS flight line information are still maintained within the ArcView 3 based Spray Advisor extension. These functions were not migrated to the "new" Spray Advisor interface.

- Objective: Additional GIS programming support as needed for Spray Advisor interface development.

Support was provided as needed during this budget period to meet requirements of the Spray Advisor interface development project. NRAC maintained correspondence with CFS programmer throughout project. NRAC programming work in support of Spray Advisor included development of several key functions in the ArcView 3 portion of Spray Advisor.

- Objective: Periodic update and revision of existing Spray Advisor ArcView extension, including possible addition of new airborne GPS software formats.

Objective was met and exceeded during project period. Significant updates to existing ArcView 3 Spray Advisor extension were made during this time, including various bug fixes and enhancements to this software. A two day training class was developed for this extension, including Powerpoint presentation materials and hands-on exercises for participants. The training class, led by an NRAC instructor, was held in February 2003 in Morgantown, WV for approximately 30 participants. The two day training class (again with NRAC instructor) was repeated in Mt Pleasant MI in February 2004. Class materials have been retained by the Forest Service in Morgantown WV for future classes as needed.

Project Summary and Future Work:

The ultimate goal of this project was to work cooperatively with the Canadian Forest Service to produce a stand-alone, centralized Spray Advisor interface that would utilize ESRI's ArcView 3 GIS software for various GIS functions. The stand-alone Spray Advisor interface was developed and programmed by the CFS, while NRAC was responsible for managing Spray Advisor-related data input, output, and display within ArcView 3. Significant progress was realized towards this goal, through meetings and collaborations with CFS personnel. During the project, NRAC also continued work on the Spray Advisor ArcView 3 extension, including development of a two day training class. NRAC staff held two offerings of the training class, with almost 50 total participants trained. While this particular project produced a working Spray Advisor "stand-alone" application, new software releases and other factors have led to future Spray Advisor development efforts being concentrated instead within ESRI's ArcGIS software platform (rather than a stand-alone interface using ESRI's ArcView 3x).

The work covered under this project (Grant Award # 02-DG-11244225-422) has been continued with Grant Award # 03-DG-11244225-461 for the project time period of 10/01/03 to 9/30/05. The project continuation will allow the Natural Resource Analysis Center to build on past experience with the Spray Advisor project to further the completion of the Spray Advisor system within ArcGIS. NRAC's work in ArcGIS for the Spray Advisor project will fall into two general areas: inclusion of various spray support models and tools into the ArcGIS Spray Advisor system and incorporation of the existing ArcView 3.x Spray Advisor extension's capabilities.