

Synthesis

Information Management for Resource Managers and Interpreters

Synthesis is an information management system for efficiently locating, organizing, integrating, and disseminating data and information. Synthesis presents the user with a simple, graphical user interface that functions as a gateway to information that may be stored on local computers, networks, intranets (<http://www1.nrintra.nps.gov/Synthesis/synthdirect.htm>) or the Internet. From this single gateway, a user may view and integrate many types of information including text-based documents, photographic libraries, databases, spreadsheets, presentation graphics, geographic information system (GIS) data, bibliographies, Internet-based information, decision support systems, and multimedia files.

Synthesis provides a means to link and share data, information, and applications. It does not replace existing databases or dictate the structure or function of other databases. Rather it provides a set of pathways that link various sources of information. The Synthesis Project is one component of an enterprise data management system planned by the NPS Natural Resource Program Center (NRPC) and is a core service component that NRPC is providing to National Park System units.

Installing Synthesis puts a large amount of information in the hands of park personnel. Fact sheets, review documents, maps, GIS layers, plant and animal lists, bibliographies, tabular summaries of monitoring data, collections of photographic slides, decision support systems, and multimedia files are loaded during the installation of Synthesis. All data are provided in NPS standard formats, so no new software or software training is necessary. Synthesis allows the user to associate keywords and metadata with each file. Keyword searches can be done across data from a single park or across groups/networks of parks.

In addition to providing natural and cultural resource information from a standard interface, Synthesis includes a software toolbox that allows users to create a custom interface and then link information to that custom interface. An interface/database created in this manner can be designed to serve park-specific information needs. No programming expertise is needed to use this toolbox. WASO offices as well as large and small parks are currently using Synthesis across the NPS System.

Synthesis may be used to find specific facts. However, its greatest utility is its quick and efficient integration of different types of information. For example, in response to an information request, a resource manager can use Synthesis to create a new document that comprises existing documents, a GIS layer, some photographic slides, and the graphical output from a decision support system. Entering all data in standard digital formats facilitates data integration and produces an attractive, professional-looking document.

Another benefit of the Synthesis Project is its encouragement of communication among disparate groups in a park, among parks, and among parks and central offices. The adoption of a standard information management system offers the opportunity to share data at all levels and among all units in the NPS. As resource managers and scientists begin to view data and information from other disciplines, techniques will be shared, new relations will emerge, and cooperation will stimulate a more holistic view of resources. This will improve resource management. Synthesis will ease the preparation of information for the public and will provide a framework to preserve the institutional memory of participating National Park System units. In an organization with considerable personnel change, storing information in a known location is advantageous.

The Synthesis information management system targets primarily NPS staff. However, once materials are entered into the Synthesis system, they may be repackaged for use by our second target audience - students and the general public. To accomplish this goal, we used innovative programming techniques to develop "virtual walks" whereby computer users move through virtual portions of NPS units and click on natural/cultural features. This activates interpretive materials such as illustrations, video, documents, etc. Virtual walks may present current-day conditions/features or historic natural/cultural landscapes that no longer exist. In addition to the "walkthroughs," we are working with WASO and park staff to build digital "knowledge centers" that present basic concepts in geology and other natural resources. The approach is to create basic concept modules that are appropriate for use across the entire NPS System supplemented with specialized modules that provide "local" or more "in depth" information. In this way, we "make data useful" by using information in Synthesis to build a digital educational system for the national and local level.

For more information, please contact:

Bruce Nash
National Park Service - Natural Resource Information Division
PO Box 25287
Denver, CO 80225
303-987-6697
bruce_nash@nps.gov



Synthesis

Information Management System



SYSTEM BENEFITS

- Accelerates data access
- Provides expertise and interpreted data often lacking at "remote" sites
- Consolidates many data types in electronic format
- Facilitates data maintenance and update
- Identifies data gaps and research needs
- Provides links to decision support systems, models, and Internet sources
- Encourages exchange of information among NPS units
- Provides a means to preserve institutional memory
- Keyword searches within and across Parks

The Synthesis software provides a computerized framework for delivering resource information in an efficient manner.

In addition to the desktop version, a prototype web version of Synthesis is accessible via the NPS Intranet at:

www2.nrintra.nps.gov:82/scripts/synth.dll

The NPS Natural Resource Program Center adopted Synthesis as a standard interface for providing data. Synthesis is administered by the Natural Resource Information Division and is being used by many NPS units, WASO offices, and Regional Offices.

SYNTHESIS PROVIDES ACCESS TO:

- Documents, spreadsheets, databases, and multimedia
- GIS functionality via ESRI ArcExplorer™, ArcView, MapObjects™, and ArcIMS™
- Bibliographic information
- Photographic libraries
- Decision support systems
- NPSpecies and other service-wide databases
- Internet sites
- NPS software including: NPS GIS Data Browser and CR-GIS MapObjects applications
- External custom software
- Meta-data

