



IRMA: Integrated Resource Management Applications

Background

The National Park Service - Natural Resource Stewardship and Science Directorate (NRSS) is transforming the way it manages and delivers resource information to parks, partners, and the public. Integrated Resource Management Applications, or IRMA, is the beginning of a web-based “one-stop” for resource-related data and information, including reports and other documents, data sets, maps, images, links, and more.

IRMA allows users to easily search, view, download, and print information from multiple sources and systems, all from a consistent user interface. User identity is automated, eliminating the need for logins or passwords. IRMA is replacing many of the older, stand-alone NRSS information “silos” that were often difficult to use and duplicated effort and data. The goal is to streamline and simplify how park resource data are entered, managed, discovered and shared.

The architecture supporting IRMA simplifies data sharing with other systems, and IRMA is serving as a model for other Department of Interior bureaus. As an example, the new U. S. Fish and Wildlife Service Inventory and Monitoring (I&M) Program is building a data discovery and retrieval system for the National Wildlife Refuge system that is based on IRMA, and the two systems will be linked and mutually searchable.

The full functionality and content of IRMA is currently available to all NPS staff at <http://irma.nps.gov>. A subset of records is also available to partners and the general public via the same URL. The number of publicly-available records will increase as the quality assurance steps are completed and sensitive data have been protected.

Framework

The underlying technical framework for IRMA is “service-oriented architecture” (SOA), which is both an industry standard and Department of Interior best practice. SOA allows data exchange and integration among different data systems through a system of agreed-upon data standards. The development of IRMA involved taking complex, stand-alone data systems and reducing them to smaller, more concise and far more maneuverable services that can be easily shared and re-used. Park units are a good example: rather than each information system managing its own set of park codes and park names, IRMA relies on a “unit service” that makes this information available to many systems. Data are contained and managed in one place only, eliminating duplication and minimizing mistakes. Similarly, if another agency or a cooperator needs to display a list of national parks on a website or download a list into a spreadsheet, the unit service can automate these transactions.

IRMA is one of the first significant implementations of SOA within the National Park Service and the Department of Interior, and NPS has



Bass Harbor Head Lighthouse at Acadia National Park.

received a special recognition award from DOI for “Best Agency SOA Application.”

Status

All NPS staff can search, view, create, and upload records in IRMA. Public users have access to records that are non-sensitive and have been reviewed for quality. No logins or passwords are needed. Data from three legacy systems, NPSpecies, NatureBib and the NPS Data Store, have been migrated into IRMA and the legacy systems have been retired.

While initially focused on natural resource-related information, in the summer of 2011 IRMA has broadened its scope to encompass all types of park resource data. For this reason, the earlier name, Natural Resource Information Portal (NRInfo), is being phased out and replaced by the more inclusive name IRMA (Integrated Resource Management Applications).

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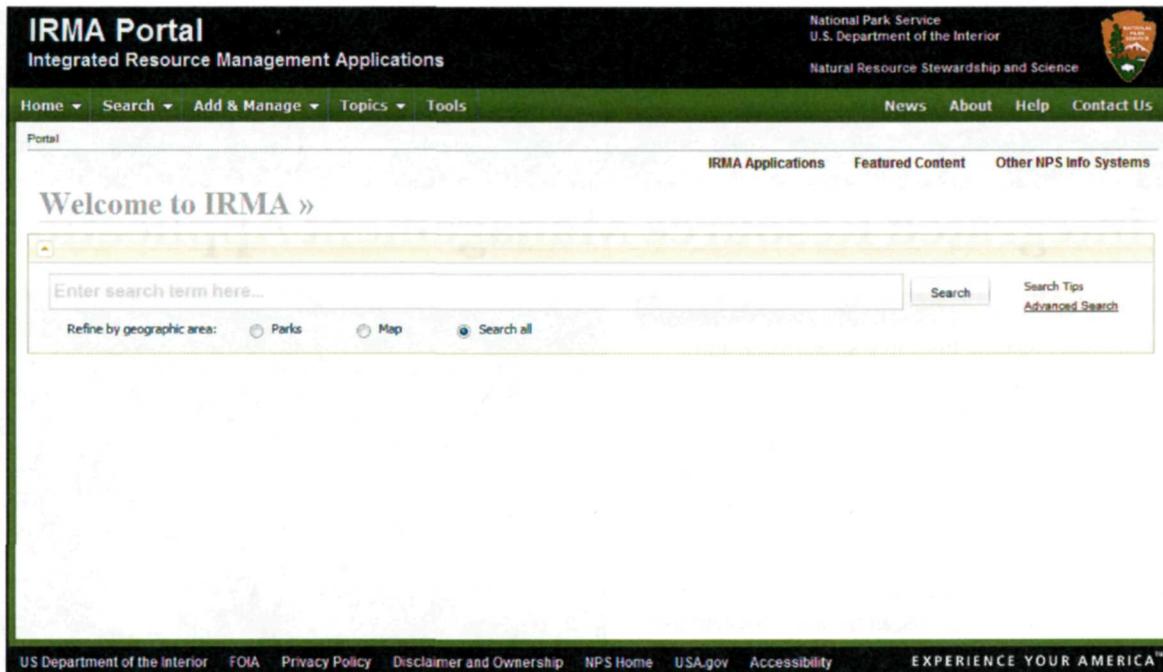
More Information

Dr. Steve Fancy
I&M Division Chief

Phone/E-mail
970-225-3571
steven_fancy@nps.gov

Natural Resource Stewardship and Science
Inventory & Monitoring Division
1201 Oakridge Drive, Suite 150
Fort Collins, Colorado 80525

<http://irma.nps.gov/>



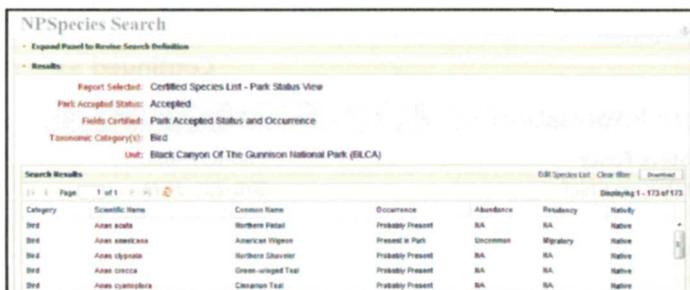
The Integrated Resource Management Applications Website (IRMA): <http://irma.nps.gov>.

Key features currently available on IRMA include:

- **Search for documents and data:** IRMA gives you easy access to over 400,000 documents, data sets, and other information resources related to national parks. Entering a search term and the park unit(s) will retrieve a list of titles and associated information, many of which have the full-text document or data file attached.



- **Get a species list for a park:** IRMA gives you simple tools for viewing, printing, or downloading a park species list and associated status categories such as abundance, residency, or nativity. You can also select a species and see a list of all the parks in which it is reported, view associated information such as T&E status, and see full taxonomic hierarchy information.



- **Add a Data Store record and upload the associated file:** Users can create records and upload the associated files. This makes valuable information resources immediately discoverable and available to other park staff, researchers, or the general public (if appropriate).

- **Find information on air, climate, geology, water, cultural resources, and more:** Clicking on IRMA topics will take you to multiple data sources and websites, including maps, webcams, inventories, and tools.



- **Access IRMA data directly using REST:** An advantage of the underlying framework is the ability to fetch data directly without going through the IRMA user interface. REST (Representational State Transfer) allows users to compose a URL using specific patterns, and then execute a command to retrieve data. For example, a URL can be embedded in a park website that will retrieve and display the most current list of references or a species list directly from IRMA.

New releases of IRMA occur every three or four months, with each release providing additional data and functionality. The goal of IRMA is to help users find, manage, and disseminate park resource information quickly, easily and reliably.

We appreciate your comments and suggestions, which are essential to the IRMA improvement process.

Contact us at: irma@nps.gov.