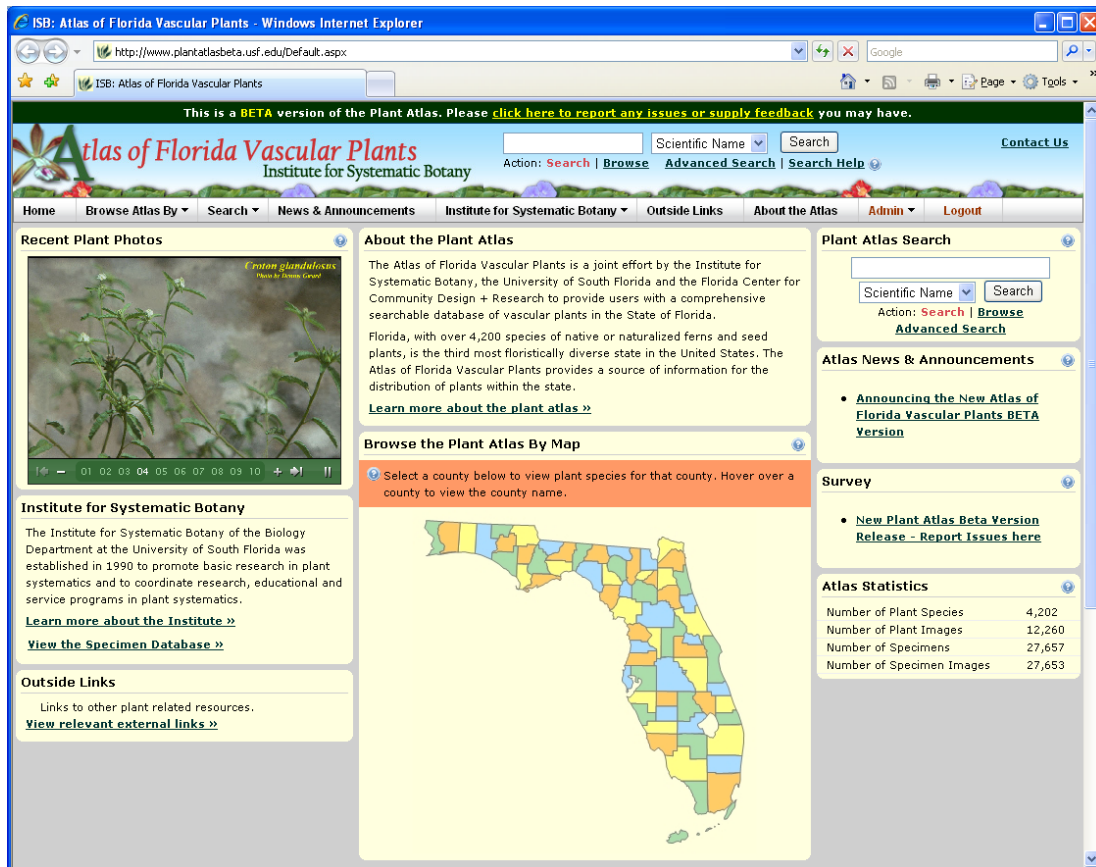

Plant Atlas: An Online Resource for Plant Information, Nomenclature, Distribution and Herbarium Specimens

Program and Technical Summary



Project Overview

The Plant Atlas is an evolving partnership of herbaria, universities, conservation organizations, government agencies and information technology professionals. Project partners are united by a common need to manage and disseminate vascular and non-vascular plant information with colleagues and the public. The online Plant Atlas software application, originally developed by the University of South Florida, represents the tool that these partners have chosen to meet their needs. As a shared technology, project partners share the development and maintenance costs and benefit from the ongoing improvements to the system.

Strategy for Sustainability

While some technology has come and gone, the Plant Atlas application has evolved and remained current since the early 1990's. Project partners initially license the Plant Atlas application from the University of South Florida and inevitably make improvements and upgrades to customize the Atlas to meet their unique needs. Program application upgrades are shared with existing partners and either implemented by local information technology professionals or by the University of South Florida. Project sustainability will be achieved by growing the number of Atlas partners who share in the costs to maintain and improve the technology.

Functionality

The Plant Atlas technology incorporates an appropriate combination of server-side and client-side software applications to manage and share plant information. Plant information, distribution, nomenclature and herbarium specimen data are stored in two databases within the Microsoft SQL Server database management system. A client-side Microsoft Access forms-based software application is used to enter and manage data contained in the SQL Server. The Plant Atlas website incorporates standards-based data-driven internet technologies to disseminate plant information, images and distribution maps to the public. The following is an abbreviated list of functionality available on the website:

- Plant species are searchable by scientific and common name, including synonyms; known presence within a county; nomenclature citation information; availability of a herbarium specimen image; and listing as threatened/endangered, native, endemic, invasive, wetland and other characteristics.
- Search results can be presented as a spreadsheet-style list of plant species or as a gallery of plant images along with summary information for the purpose of comparison.
- Search result pages provide options to improve usability, including: sort or group by family, genus or other columns; filter based on selected characteristics, such as presence of a photograph or specimen image; or create a printer-friendly checklist to take into the field. We are currently implementing a customizable data export option.
- Users can browse for a plant species by selecting a family; genus; common name; or county.
- Information is made available at the family, genus and species taxonomic classification levels, including distribution map and source information, synonymy, citations, and plant photographs.
- Each taxa web page is linked directly to herbarium specimen data and information. We are currently implementing targeted links from Plant Atlas species pages to specific species pages on external websites such as USDA Plants and Natureserve.
- Administrative users utilize a secure web-based editor to manage online content including customized pages about the project, herbarium or institute, external links, and news and announcements.
- Additional functionality is currently being implemented, including: improved performance and functionality of search tools; additional automated links to provide access to specimen data at multiple herbaria; data download tools for advanced users; and additional species information such as ecological, habitat, and phenology information.

Technology Infrastructure Requirements

The Plant Atlas has been built upon a base of standard internet technologies generally available to the information technology departments at most universities and other organizations. The website application incorporates the following technologies: XHTML / CSS, JavaScript, Flash, and the .NET Framework 2.0 (ASP.NET, VB.NET). The following is a summary of the software and components required to support the Atlas.

Required Server Software

- Operating System: Microsoft Windows NT, XP, 2003, Vista
- Web Server: Microsoft Internet Information Server (IIS) version 5 or higher
- Database: Microsoft SQL Server 2000/2005
- Web application components:
 - Dundas Map for .NET –on-demand creation of plant distribution maps (license required)
 - Yahoo! User Interface (YUI) JavaScript library - used for menus and help panels (no cost)
 - SlideShowPro for Flash – used for the photo gallery/slideshow tool (no cost)

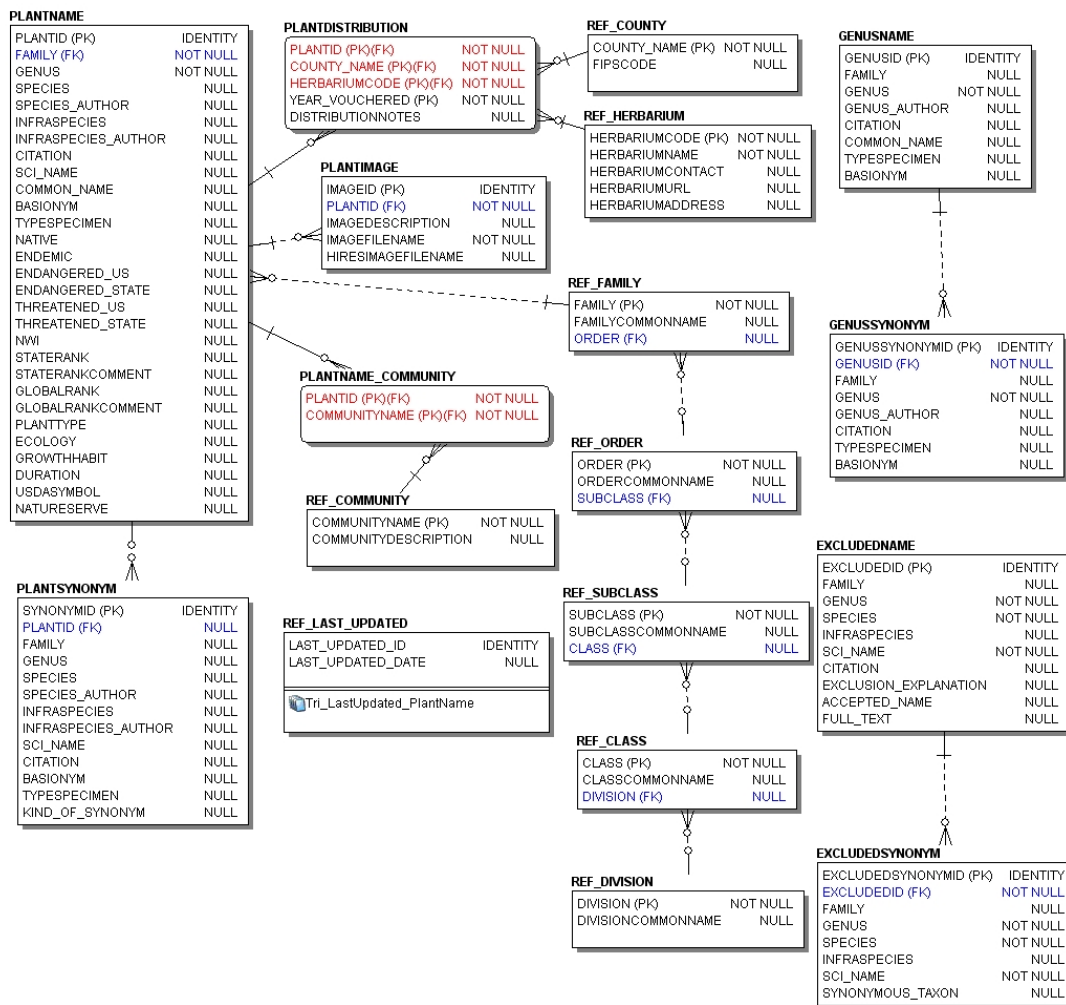
- PicLens Lite - used for fullscreen photo slideshows (no cost)
- Google Analytics – optional collection of website statistics (no cost)

Data Storage & Access

- Data Storage: Microsoft SQL Server 2000/2005
- Data Access: Microsoft Access 2003/2007, form-driven administration of data stored within SQL Server database

Plant Attribute Information Summary

The Plant Atlas and specimen database have been purposefully designed to accommodate customization. Modification of the database and website is fairly easy in order to add or subtract (i.e. hide) plant data attributes based on the needs of the individual data partner. The herbarium specimen database was based on the NY Botanical Garden’s Virtual Herbarium and contains a long list of attributes used by collection managers. The database diagram shown below (taken from the New York Plant Atlas) provides a basic overview of the data attributes and relationships contained within the Atlas database.



Plant Atlas Project Costs

The Plant Atlas is not simply a software application available for sale on the open-market. Potential project partners will be accepted based on the following criteria: 1) they must demonstrate a commitment in principle to the sustainability of the Plant Atlas; 2) they should be willing to exchange specimen and distribution information with other organizations for incorporation into the website; and 3) most or all of the website should be made available for free to the public.

Project costs can be summarized as follows:

1. Partners must pay a one-time software licensing fee to the University of South Florida for the use of the intellectual property originally developed by USF faculty.
2. Partners will be responsible for the costs associated with hosting and managing the Plant Atlas application, including the computer hardware and the required server software specified above. Partners may choose to provide these resources in-house, through a contract with an external entity, or through a maintenance partnership with USF. Potential partners are encouraged to consider the cost-benefit of multiple options.
3. The implementation and configuration of the Plant Atlas will generally require some assistance from USF faculty and staff. USF will provide the application source code and work with the IT staff of the project partners to install, configure and customize (if necessary) the Plant Atlas website, database and other components. The cost of these services will depend on the level of effort required by USF staff.

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