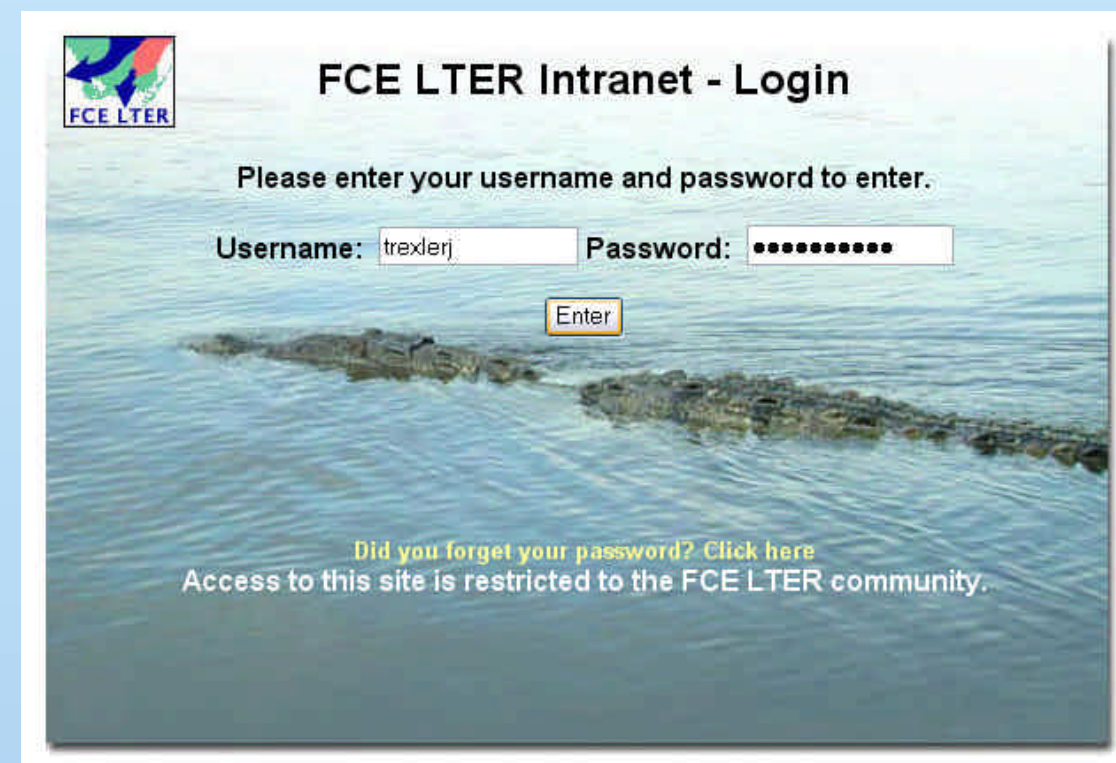


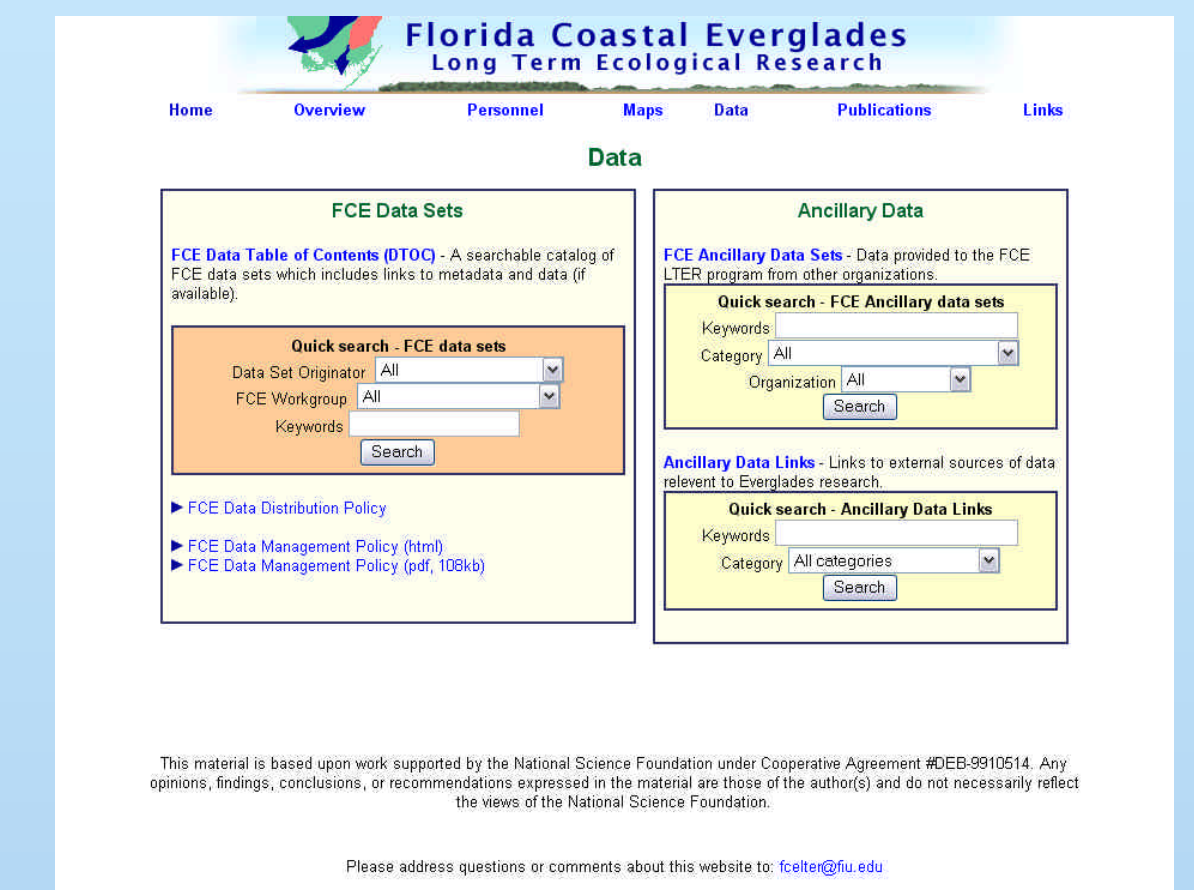
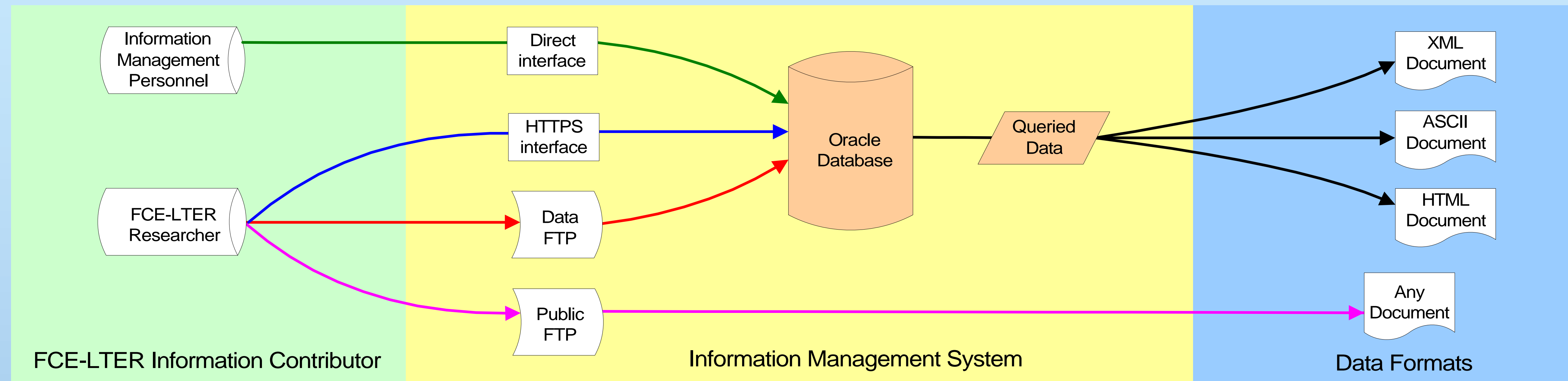


FCE-LTER Information Management System

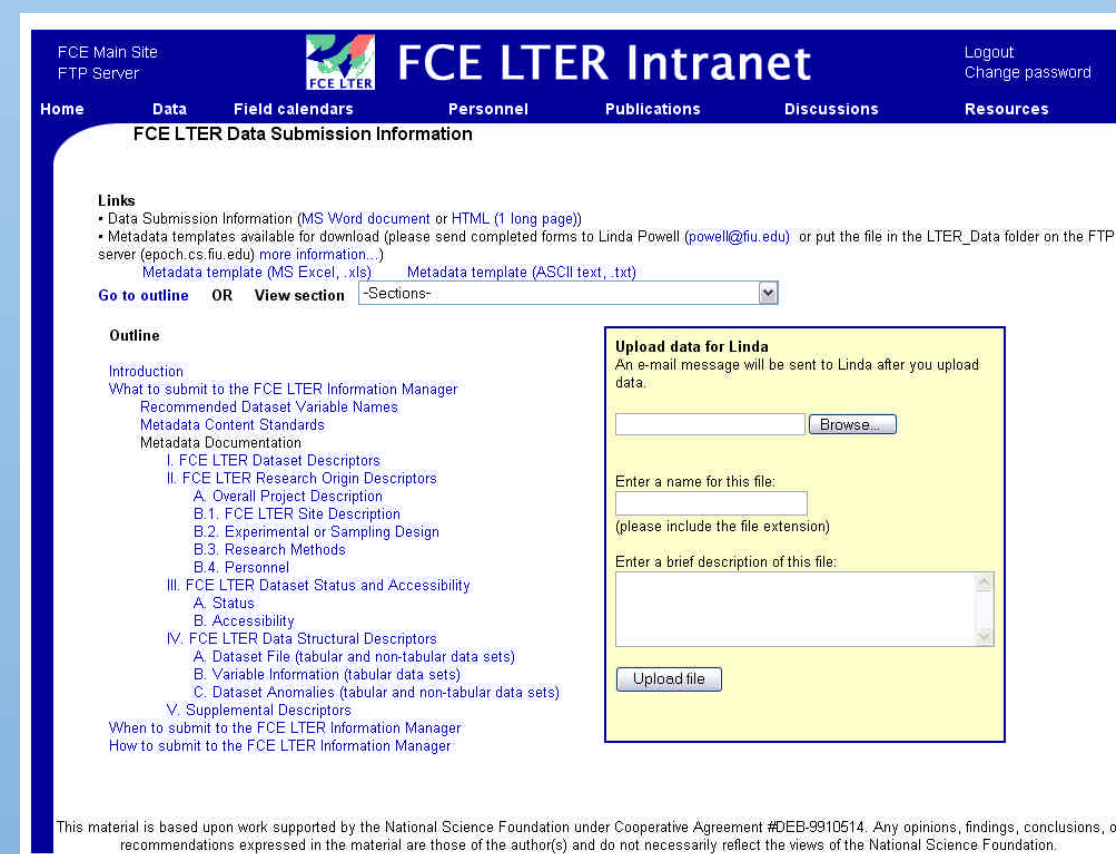
Phil Bayer, Daniel Childers, David Iwaniec, Linda Powell, and Mike Rugge
 Florida Coastal Everglades LTER Program, Florida International University, Miami, FL



Login to the secure intranet allows FCE-LTER researchers to update personnel information, publications, calendar events, and submit data.



FCE-LTER data can be queried easily through a web interface by originator, workgroup and keyword. Ancillary data can be queried by keyword, category and organization.



Data can easily and securely be submitted via HTTPS to the Data Manager in the Data Section of the Intranet.

FCE-LTER Information Contributor

- Information Management Personnel
 - Contributed Data Types:
 - Data & Metadata (research data, graphs, GIS coverage, imagery, photos, maps, etc.)
 - Project Management Documents (publications, calendar, personnel information, funding information, etc.)
 - Data Management Documents (user policies, data submission guidelines, etc.)
- FCE-LTER Researcher
 - Contributed Data Types:
 - Data & Metadata
 - Project Management Documents
 - Direct sharing and collaboration between researcher through the public FTP server
 - Screenshots on the left display the current HTTPS interface for submitting data on the FCE-LTER Intranet

Information Management

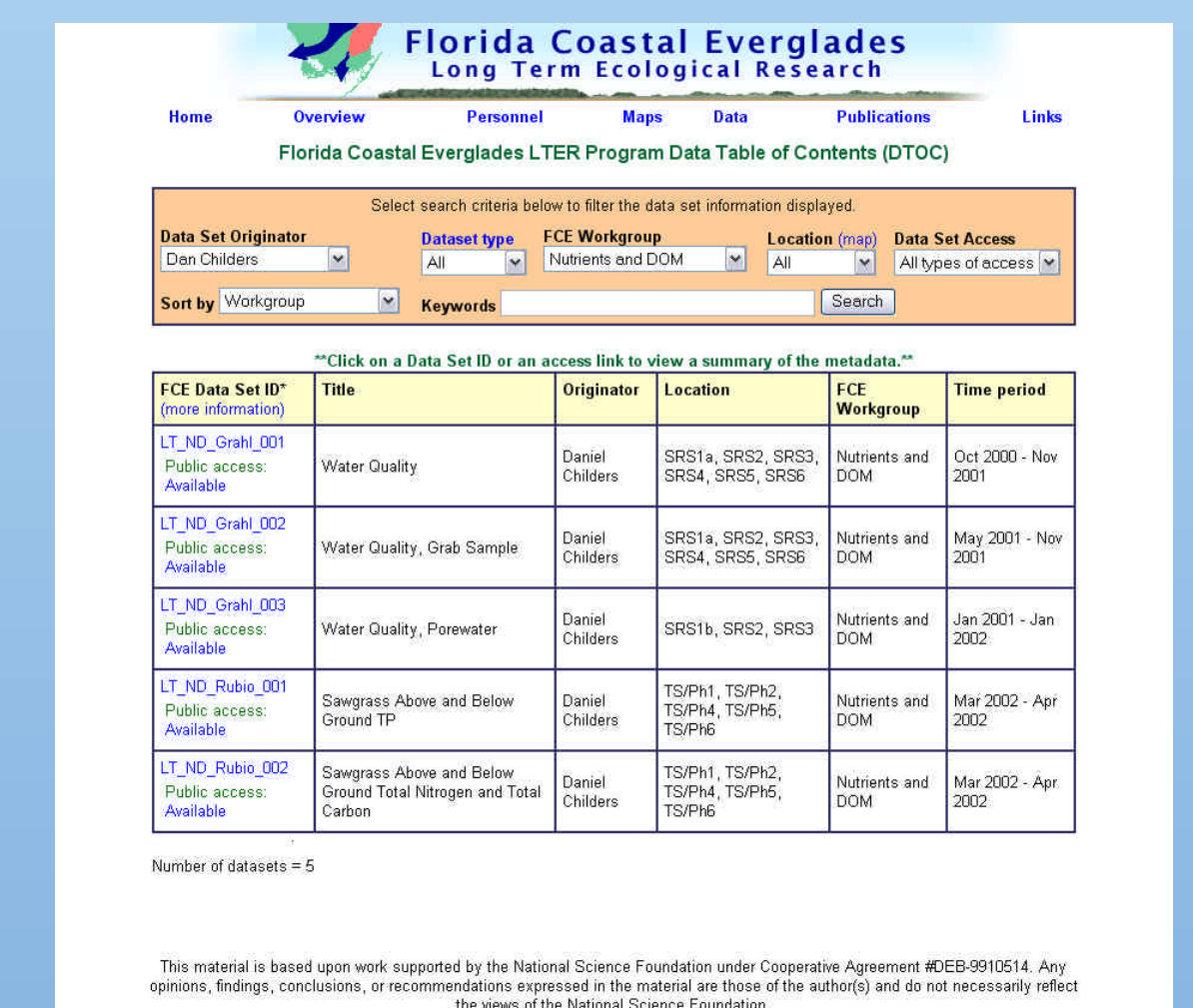
- Data Submission Vectors
 - A direct interface written in PERL provides an ODBC connection for Information Management Personnel to modify the database.
 - An HTTPS web form provides an easy way for FCE-LTER data contributors to submit data to the database. Metadata is submitted directly to the database through an ODBC connection, and data is transferred to the FTP server for the Information Manager.
 - A secure FTP server allows an alternative way to submit data to the Information Manager. After QA/QC for data-metadata matching the data is placed in the database.
 - A public FTP directory allows for direct sharing of files between FCE-LTER researchers.
- Workstation/Server Security
 - Updates and patches
 - Dynamic firewalls on servers
 - Secure Socket Layer (SSL) on servers
- Archive and Backup of Oracle Database and FTP Servers
 - Nightly incremental Oracle database backups & FTP RAID mirroring (Level 0)
 - Two sets of weekly tape backups of all servers (Level 1). One set of tape backups are stored at an off-site location. The second set is stored in a firebox safe.
 - Monthly drive imaging of all servers (Level 2)
- Response and Recovery Procedure developed for 30 minute response time and 10 hour recovery time.

HTTPS Web Query Description

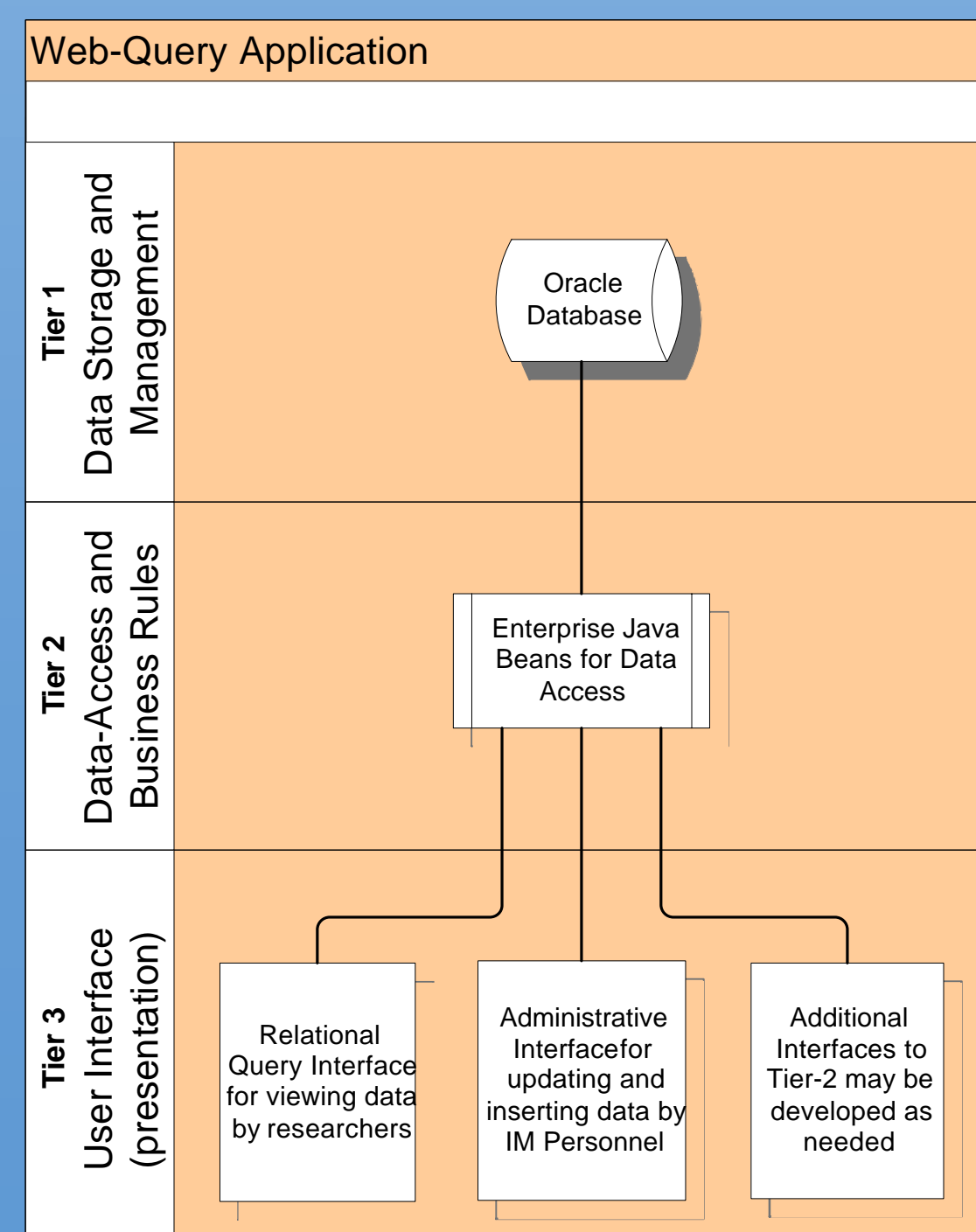
The web-application described in the orange boxes offers researchers the opportunity to perform 'live' queries to the database. Three document formats are offered through a choice box on the query page:

- The XML document format complies with Ecological Markup Language (EML) version 2.0 and allows the data to be used with EML-supporting applications as well as with standard database and data-management tools.
- The ASCII format provides a convenient way for researchers to download data in a human-readable format for later reference.
- HTML offers the data in the most human-readable format with clearly distinguishable columns and rows. This format is the best choice for quality control and for quick perusal of data.

The web-application will be open to the public, and the data will be available on-line for anyone who requires it in all levels of education and academic research.



The datasets matching your query appear in a hyperlinked table of contents.

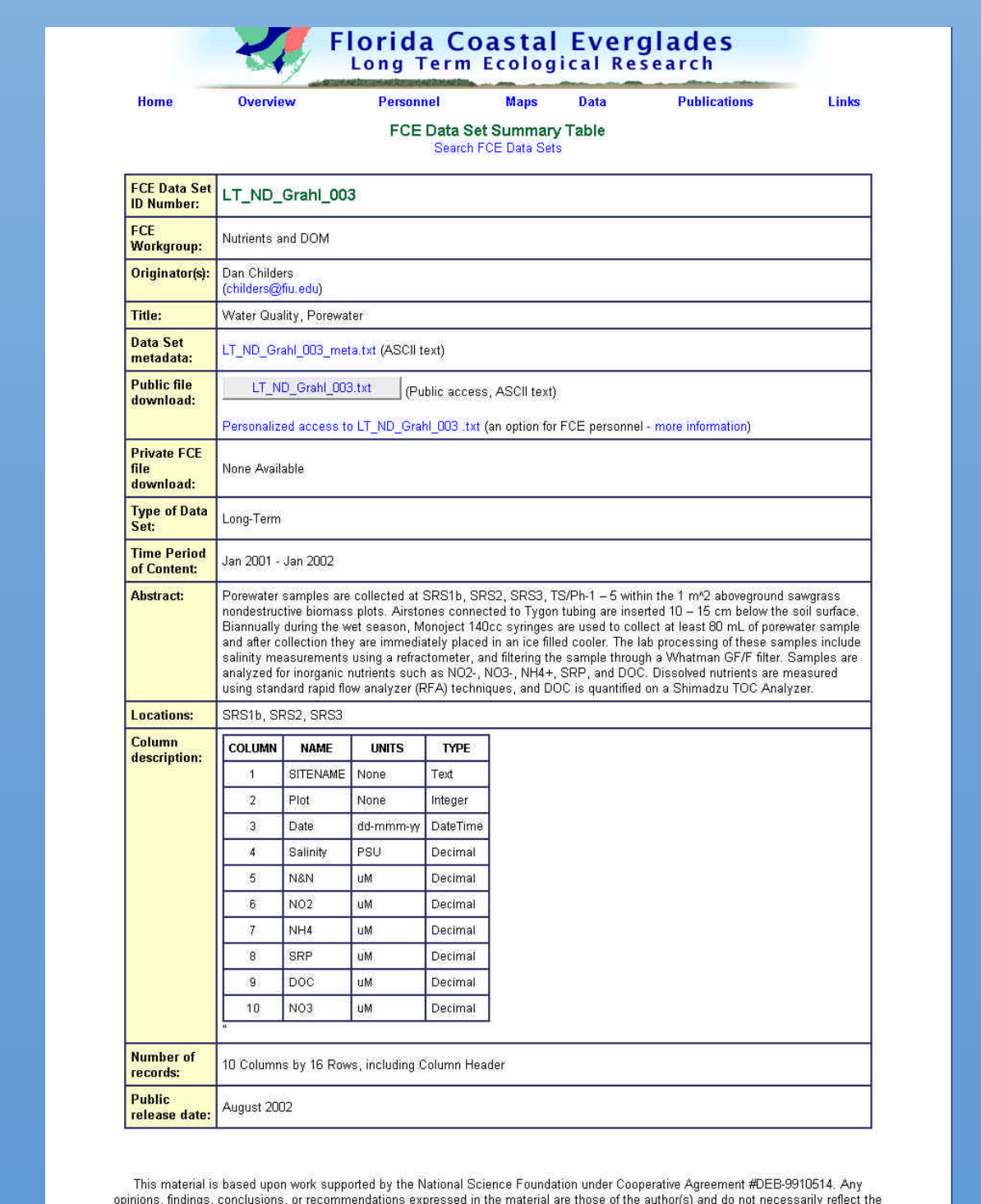


In the diagram to the left, the web-application used for performing relational queries on the system is shown as a 3-tier architecture. This architecture was chosen for its high-scalability, security, and short development times.

- Tier-1 includes the Oracle database, Oracle data-management tools, and internal procedures for updating user information. Also included on this tier are several small applications developed by the IM office for transposing data in various formats into a common format that can be added to the database easily.

- Tier-2 contains a series of Data-Access Objects (DAO) implemented using Enterprise Java Beans. The objects provide an application layer for performing standard queries and updates to the database without the need for SQL. This allows for much more rapid interface development.

- Tier-3 consists of 2 (or more) Web interfaces that utilize the public procedures of the DAO tier. These interfaces can be web-based, for use with a web-browser, or standalone client applications launched as an executable.



The summary table provides information about the selected dataset from the results and a link to download the files.