



Quality Plan for the Division of State Lands January 2020

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Signature Page

The undersigned have read and understood this Quality Plan, are charged with managing and improving the quality system and are responsible for ensuring that all staff properly executes the procedures discussed in the plan.

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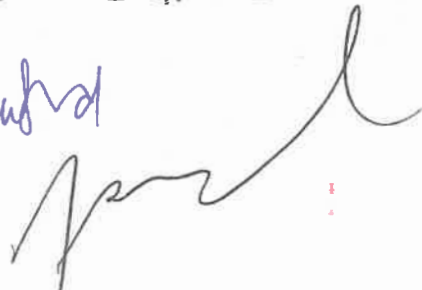
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Introduction

The Florida Department of Environmental Protection's (DEP) Quality Assurance (QA) program involves the implementation of a management system (planning, review, training, and assessment) to ensure that data collection, generation, interpretation, reporting, evaluation and archiving is of sufficient quality to support Department decisions. A component of the DEP QA program, the Division of State Lands' (DSL) QA program's effectiveness is dependent upon the actions of all DEP staff, from "front line" employees to management, meaning QA is a function distributed throughout the organization. One aspect of the program is to ensure that Department QA activities are carried out according to commitments made to the Environmental Protection Agency as enumerated in the DEP Quality Management Plan (QMP), 2-10-2014 (Rev.7).

The DEP Secretary is committed to implementation of the quality assurance requirements in the QMP and as authorized by program area 403.0623, F.S. and Chapter 62-160 Florida Administrative Code (FAC). It is the Secretary's intent to carry out these obligations and requirements as detailed in the Department's QA Directive (September 18, 2009).

In order to execute the components of the DEP QA Directive, the Division of State Lands has developed a quality system, which is executed through this Quality Plan document. The document describes the steps DSL takes to ensure the scientific and legal defensibility of environmental data it uses and that the necessary checks and balances throughout the division are intact. It details the process of planning, training, execution, assessment and corrective action DSL undertakes to ensure that the environmental data it uses and the checks and balances exercised meet the established quality criteria.

Basic Elements of the DSL Quality Plan

DSL's Quality Plan explains both the process and criteria by which the quality system is managed. The plan is utilized as an instrument of internal communication to inform staff of current and future quality assurance activities. DSL will revise the Quality Plan as needed, and pledges to ensure the consistent application of procedures and criteria for the use of the QA checks and balances and environmental data. The Quality Plan will also be used as a training document for new staff and as a reference for experienced personnel. The plan and its revisions also serve as an archival record of our formal quality system.

Existing internal and external documents, including rules, training manuals, guidance documents, SOPs, tables, etc. are cited throughout the plan.

The division expects all staff to understand and follow the procedures and criteria as discussed in this plan, and to carry out their assigned responsibilities for effective utilization of our quality system.

Policy Statement

DEP's Division of State Lands is Florida's lead agency for environmental land management and stewardship, serving as staff to the Board of Trustees (BOT) of the Internal Improvement Trust Fund (Governor and Cabinet). As such, the Division's role goes far beyond just acquiring lands for protection. It provides oversight for the management of activities on more than 12 million acres of public lands including lakes, rivers and islands. DSL administers the Florida Forever Program, Florida's blueprint for conserving our natural resources and renewing our commitment to conserve our natural and cultural heritage. The Division of State Lands also assists landowners who want to sell land to the state, buy land

from the state or gain access to public lands. As such, The Division of State Lands believes in sound and useful Quality Assurance/Quality Control management practices to effectively complete the various tasks and goals associated with carrying out its mission.

It is the Division of State Land's policy to:

- Use scientifically valid and legally defensible data for decision making that affects the protection of the environment.
- Have and implement the quality system described in this document.
- Adaptively manage the quality system to be consistent with provisions of the DEP Quality Assurance Management Plan.
- Ensure that each individual is properly trained to execute their assigned functions.
- Implement procedures to evaluate the quality of the data DSL uses and to implement corrective actions when data does not meet our data quality objectives.
- Periodically audit the performance and record-keeping practices of data generators for which DSL has responsibility.
- Implement quality assurance procedures for the management of the data repositories.
- To provide the Secretary with information regarding DEP's ongoing QA efforts, DSL describes and compiles the results of all appropriate QA activities and relays it to the Standards and Assessment Program area for an annual report.

Ethics

All employees of the DEP Division of State Lands are held to high professional ethical standards in the performance of their duties. All employees are required to read, understand and sign an 'Ethics Statement' attesting to their commitment to honesty and integrity in performance of their duties. In addition, all employees are required to receive ethics training annually. Improper, unethical or illegal actions are dealt with according to the published Administrative Directives of the Florida Department of Environmental Protection.

Organization and Responsibilities

The Division of State Lands is organized into eight separate program areas: The Director's Office (DO), the Office of Environmental Services (OES), the Bureau of Public Land Administration (BPLA), the Bureau of Real Estate Services (BRES), the Bureau of Appraisal (BA), the Bureau of Survey and Mapping (BSM), Land and Recreation Grants, and the Bureau of State-owned Lands Inventory. All eight program areas within DSL provide different functions for the Division.

In the Division of State Lands, quality assurance and quality control are monitored by those individuals involved in each in-house process, as well as supervisors and bureau chiefs, and at times, hired contractors along with DSL's associated contract managers. The quality assurance officer (QAO) for the division is not involved in the many processes that are executed throughout the division on a daily basis, but rather, acts as a policy leader for the division as a whole.

DSL program staff performs necessary tasks in every instance to ensure that all work performed and all products generated are completed with full adherence to the applicable DEP rules and policies.

DSL's senior management, listed on the signature page of this document, ensures that this quality system is fully operational within the program, designates the Quality Assurance Officer and provides general oversight. These managers also evaluate the numerous processes in the program to ensure they meet the program's needs, and periodically evaluate the effectiveness of staff's data quality activities, including review of audit results. They also evaluate corrective action policies and procedures to be implemented when data does not meet program objectives. In the future, DSL's managers will discuss audit results with the QA Officer, review the annual Quality Assurance Report to the Secretary, and discuss findings with the QA Officer, as needed.

The following is a breakdown of the division by bureau; included in each bureau's explanation of their QA function are the various documentation, data review, contract management, and corrective action practices that are normally adhered to. DSL understands the need to evaluate the quality and usefulness of environmental data prior to making decisions. DSL conducts data review on a regular basis within each applicable working group to determine the usability of data for determination of compliance with rules, etc. Additionally, DSL carries out numerous record-keeping procedures such as calculation checks, data archiving, checks of database entries, document control and maintenance, and record generation, retention and storage procedures to ensure appropriate documentation. This ensures that the DEP contracts that are administered through the division are properly managed to assure appropriate data quality as well. Corrective actions, when necessary, are practiced routinely at DSL in an effort to improve both working areas effectiveness and the public's ability to utilize DEP resources. Such actions can come about via user commentary, complaints, or other reports received from data users and the public requesting revisions, etc.

Director's Office

Among many of its roles, the Director's Office (DO) manages DSL's budget. All data regarding the budget (appropriation by the Legislature, encumbrances, expenditures, release of funds, revenue received, etc.)

are used to support the functions and operations of the Division. These data are evaluated by staff and used to assist with numerous budget decisions and many reports for management, the Legislature, other divisions within DEP, other agencies and to support DSL's Legislative Budget Request. They also provide information used to project anticipated revenue expected to be deposited into the Internal Improvement Trust Fund, which partially funds and therefore supports the Division of State Lands.

QA/QC Function:

The Division's financial data is tracked primarily in Excel spreadsheets and reconciled with Florida's Accounting Information Resource (FLAIR) to ensure proper accounting of state funds. DSL expenditures regarding land acquisition are currently tracked via Excel spreadsheet. Historical data was migrated into APIS in 2012 and there was a QA/QC check after the data was migrated. Since that time, land acquisition data has been entered into APIS at the time of closing. Staff is currently being trained and refining procedures for adding data into APIS throughout the entire acquisition process from beginning to end and ensuring there is an ongoing QA/QC process in place.

The billing and collection of fees and payments for the use of state-owned land is posted daily in the Submerged and Upland Public Revenue System (SUPRS). The payments are reconciled with the Cash Receiving Application within the Bureau of Financial Management Revenue Section on a monthly basis. SUPRS allows only certain employees to perform certain tasks to avoid any conflicts (the staff member who creates the invoice cannot accept or post payments). Administrative Services Bureau of Finance and Accounting reconciles FLAIR with the Cash Receiving Application monthly on all revenue received into the Internal Improvement Trust Fund.

Office of Environmental Services

The Office of Environmental Services (OES) provides land management oversight for both conservation and non-conservation lands, monitors conservation easements, and acts as staff to the Acquisition and Restoration Council (ARC) and the records repository of the Land Management Uniform Accounting Council (LMUAC)

The OES uses scientific and technical data which is generated, maintained and interpreted by the Florida Natural Areas Inventory (FNAI). The FNAI-acquired data is used as an evaluation tool for the land management strategies and management plan reviews of state-owned land. The data is also used as a ranking tool for the priority list of land ownerships the division utilizes when developing DSL's land acquisition work plan. The data allows the Division of State Lands (DSL) to meet the goals and objectives of DSL, the Acquisition and Restoration Council (ARC), the BOT and the legislature by allowing selection and acquisition of the most important lands under the Florida Forever Program and of oversight management of the state's 3.8 million acres of conservation lands.

The OES is also the repository of land management data used to ensure compliance with statute by all agencies/entities that manage conservation or non-conservation lands on behalf of the BOT. Additionally, OES staff provide the Environmental Site Assessments (ESAs) and Baseline Documentation Reports (BDRs)

for the Bureau of Real Estate Services, as well as monitoring and developing the annual report for conservation easement monitoring.

QA/QC Function:

Land management data is received by the OES in the form of Land Use Plans and Land Management Plans and are reviewed for compliance with statute.

The OES contract with FNAI gives the office access to a wide range of scientists with expertise in botany, zoology, ecology, conservation planning, GIS and database management. While there are no specific FNAI contractual provisions for QA/QC measures, FNAI, as a member of the international network of Natural Heritage Programs, participates in a unique conservation database (Biotics) development system implemented throughout the world requiring rigorous, consistent data standards and methodologies. More information can be seen at:

[Hyperlink to the NatureServe website standards and methods](#)

In addition, FNAI establishes technical advisory groups when developing and updating new data sets to ensure that the best possible, most accurate and uniform sources of data and applications are utilized properly. Most of the FNAI data and the reports generated from them are available for public review on the web and at public hearings where many scientists and other experts provide comments on their accuracy for assistance in the dataset development. FNAI's element occurrence data is validated on an ad hoc basis when staff conducts onsite reviews of managed areas with experts.

The FNAI procedures are presented in Appendix B of this document.

From within, the FNAI data, including mapping data is reviewed by staff from OES and BSM to ensure accuracy. Land management data is reviewed by staff from OES and the managing agencies and culminates in reports to the ARC and an annual report to the Governor and Cabinet. Acquisition planning data is reviewed by staff from OES and the Bureau of Real Estate Services to develop a division work plan which is submitted to the ARC and the Governor and Cabinet. Data submitted for land acquisition proposals are reviewed by OES staff, the ARC, and are then reported once a year to the Governor and Cabinet in a report covering more than 100 ARC-recommended projects.

OES staff generates Land Management Plan data (due dates, notification dates, etc.) and enters data into the management plan tracking system which will eventually migrate to the Integrated Land Management System (ILMS) database. The entries into the management plan tracking system are validated by distribution to cooperating agencies and by OES staff, with the cooperation of BPLA staff. As cooperators reveal errors, a lead staff person corrects the data. The land management data from the management plan tracking system are used to ensure compliance with statute by all agencies/entities that manage conservation or non-conservation lands on behalf of the BOT.

Data generated in the process of performing Land Management Reviews are entered into spreadsheets for compilation by staff. Data entry is reviewed by another staff member, who also compiles the annual Land Management Review Report to the Governor and Cabinet.

QA/QC is also conducted for boundaries of managed areas and Florida Forever projects. Individual project maps are updated for inclusion in reports during project development and re-evaluation.

QA/QC for other data, such as the Florida Forever measures, is performed at a gross level by comparing statistics from previous reports to identify gross disparities. When disparities occur, FNAI staff is consulted to determine if data errors or other factors are the cause.

The ESAs that are utilized as due diligence products for real estate closings sometimes involve the use of scientific data. The scientific data is generated from the sampling and analyses performed under the Environmental Site Assessment Reports Contract by the Environmental Contractor when completing the work needed for an Environmental Site Assessment Phase II Report. The Environmental Contractor must conform to the requirements set forth in Chapter 62-160, F.A.C. and the Quality Assurance Requirements for Department Contracts. The Contractor follows QA/QC measures during the collection of samples (ex: duplicate, split and equipment blank samples). The laboratory (subcontractor) used by the Contractor also follows its own QA/QC measures. The lab used is listed in the Contractor's contract, audited by the DEP QA program area and certified annually by the Florida Department of Health. Each report is reviewed for evaluation of information and data regarding the property in question, and how they may affect the general public usage of the property. The report states the laboratory scientific data, which are generated from sampling work that occurred during a Phase II (or beyond) ESA performed under a task assignment description detailing the tests needed due to Recognized Environmental Conditions found during the initial ESA Phase I report. The findings are compared to the residential, recreational, commercial and industrial cleanup target level tables and criteria set forth by the regulatory side of DEP.

Bureau of Public Land Administration

The Bureau of Public Land Administration (BPLA) is the Board of Trustees (BOT) real estate administration program within the Division of State Lands and generates revenue from a variety of instruments benefiting the Board of Trustees and other state agencies, for the management, administration, protection and conservation of state-owned lands. BPLA staff works on behalf of the BOT and coordinates with state agencies, state universities, governmental stakeholders and the general public to meet their real estate needs through the administration of state land inventories. These activities involve over 3.3 million acres of upland property, as well as, the 9 million acres of sovereignty submerged land held in trust by the BOT. The Upland Section administers the necessary land approvals for all state parks, forests, wildlife management areas, historic sites, correctional facilities, educational facilities, private uses and municipal public uses of BOT-owned lands. In administering the following instruments, the section coordinates with DEP-Title and Land Records, DEP-Office of General Counsel, DEP- Office of Cabinet Affairs, Acquisition and Restoration Council, outside counsel, environmental consultants, surveyors, appraisers, conservation organizations, municipalities and members of the public. There are currently approximately 2500 upland land instruments (public and private leases, commercial leases, easements, use agreements, Release of Reservation, etc....). The Submerged Lands Section administers the necessary land approvals for all marinas, docks and other structures located on BOT-owned submerged land. The submerged land staff works closely with DEP-Regulatory District Offices, DEP-Title and Land Records, Water Management

Districts (WMD), DEP-Office of General Counsel, outside legal counsel, environmental consultants, and members of the public. There are currently approximately 3100 submerged land instruments (lease, easements, conservation easements, dedications, etc....). BPLA also plays a key role in: locating Federal Emergency Management Agency (FEMA) sites during emergencies such as hurricanes; and recommending surplus lands to the Bureau of Real Estate Service (BRES) for disposition.

QA/QC Function:

BPLA staff produces the documents necessary for the management of the BOT land portfolio. Additionally, BPLA staff provides to BRES the lands available for surplus after a release of lease is requested, a site inspection is conducted, if applicable and noticing has been completed. BPLA tracks instrument data through the Land Management System (LMS). The processing of new upland leases or lease amendments begins by a receipt of an acquisition package from BRES. BPLA enters all land management data into ILMS and provides electronically the instrument information to Title and Land Records. The upland data is fed into SOLARIS by the Land Inventory System (LITS) and a match is made through the Facilities Inventory Tracking (FITS) system for those leases that include facilities (state buildings, warehouses, maintenance yards, etc....). All instrument legal descriptions are verified through these processes against ownership records. In addition, the submerged land instrument information is entered into ILMS and subsequently entered into the Board of Trustees Land Document System (BTLDS). The submerged land data is not currently tracked in SOLARIS. Both the upland and submerged land revenue data is housed in the Submerged and Upland Revenue System (SUPRS). All disposed lands deeded with restrictions and/or reversion deed language are being brought into SOLARIS for tracking and review as necessary.

Staff has the ability to compare information from ILMS against the other databases (ILMS, SUPR, LITS, FITS, and BTLDS) to provide quality control of the data. After a lease is prepared by staff, the file is given to the Division of Operations, Recurring Revenue staff to prepare the invoice, at which time, SUPRS and ILMS are compared to ensure each data system lists the correct name, address, etc. Leases are billed on the 1st and 15th of each month and SUPRS provides a link to the last invoice to confirm the billing is correct.

BSM's GIS (Geographic Information System) and Title and Land Records, BTLDS are utilized as tools to ensure accuracy. BPLA staff works directly with lessees on data review (ex. management plan tracking system), including state agencies, to ensure matching data with outside records so that any errors may be pin-pointed and corrections may be made to the databases. This data is compared in LITS and FITS.

Data is used for renewing instruments, creating agenda items for the BOT's approval, preparing reports for management activities, measuring productivity, track consistency of authorizations, answering questions for Florida's Legislators, etc....

Bureau of Real Estate Services

The Bureau of Real Estate Services (BRES) is responsible for activities related to the negotiation, acquisition, disposition, exchange, donation and closing of real property as agents to the Board of Trustees

of the Internal Improvement Trust Fund of the State of Florida (BOT). In addition, the Bureau is responsible for the management of statewide contracts for title and closing services.

The acquisition team is responsible for negotiating the land transactions necessary for full fee acquisitions, conservation easements and other less-than-fee acquisitions. DEP's Office of Resilience and Coastal Protection, Division of Recreation and Parks and the Office of Greenways and Trails within the Division of Recreation and Parks, utilize the assistance of BRES' acquisition program area. BRES also assists the Florida Fish and Wildlife Conservation Commission, the Florida Forest Service and other non-conservation entities such as state universities and other state agencies in the same capacity. Each negotiation involves organizing the acquisition with title commitment, an appraisal map, appraisal report, a negotiation strategy and offer and drafting up contract terms and obtaining the BOT's approval via a pre-planned approval process.

The disposition team is responsible for marketing lands owned by the Board of Trustees (BOT) that have been identified as not needed for public purposes via sale or land exchanges. The disposition process consists of review and coordination with the managing agency and ARC review when applicable, evaluation, assessments (appraisals, title, surveys), marketing, sale by competitive bid when required, negotiated direct sale, contract preparation, coordinating legal and management reviews and approvals, agenda process for BOT approval, deed preparation for Governor & Cabinet execution and closing. The team is responsible for handling problem resolution, inquiries and questions from the public received on a daily basis regarding available lands, process, and general information. The Disposition of State Land and Facilities Report required each year (per F.S. 216.0153) is also maintained and prepared by the disposition team in coordination with the Department of Management Services (DMS).

The closing team is responsible for preparing land transactions for conveyance to state ownership which include full fee acquisitions, conservation easements, less-than-fee acquisitions, donations, mitigation lands and exchanges. Contractors are utilized for due diligence products including title searches, title insurance, closing services, environmental site assessments (ESA) and baseline documentation reports (BDR.) The closing team manages the statewide contracts for title insurance and closing services for accuracy and compliance with Florida's statutes and DEP's policies and procedures. Any issues that might arise during the acquisition process must also be resolved before the land is conveyed to the BOT.

QA/QC Function:

The BRES acquisition team is responsible for negotiating, reviewing and preparing real estate contracts to purchase fee simple and less-than-fee acquisitions. Title commitments and appraisals are reviewed by staff to determine proper contractual particulars. Agents maintain required Communication Logs and Offer Chronologies for each acquisition, as well as preparing Negotiation Strategy forms for management approval of the negotiations. This team also prepares BOT agenda items and enters data into the BRES acquisition plan. Real estate contracts, as well as title commitments and other pertinent documents, are reviewed and approved by DEP's Office of General Counsel (OGC.).

Lands owned by the State and titled to the BOT may be disposed of as surplus lands. The disposition team within BRES manages the process for disposing of surplus land. Generally, land that is not considered useful for conservation or some other governmental use will be considered surplus. (The disposition process may be initiated by DEP or a request may be made to dispose of surplus land from other State agencies, local governments, and other parties from outside DEP.)

Surplus land is disposed of through sale or exchange. Parcels of land may be sold by negotiated direct sales, auction, competitive sealed bid, proactive marketing and by any reasonable means. Disposition staff is responsible for facilitating the surplus sale from start to finish including preparation of all documents and coordination with OGC and DEP Management for all reviews and approvals. Real estate services may be obtained through real estate companies contracting with the State to facilitate the sale of surplus property. BRES is currently utilizing the expertise of brokers under contract with DMS to maximize marketing potential and monetary return on the lands. The team is responsible for managing each project that is marketed through a real estate broker.

The disposition team acquires an appraisal from the Bureau of Appraisal on parcels of land being disposed of as surplus when the estimated value is \$500,000 or more. However, the BRES does have the authority to use a comparable sales analysis or a broker's opinion of value when the estimated value of the land is under \$500,000. Either the buyer or the buyer's closing agent may obtain a settlement statement (BRES is not required and does not always obtain a settlement statement for surplus sales but does for all exchanges.). The settlement statement is a form furnished to the parties of a real estate transaction summarizing the actual settlement costs. It includes costs paid to and by the settlement agent and those costs paid outside the closing.

Surplus records for lands being proposed for disposition which have not already been created in FL-SOLARIS Land Inventory Tracking System (LITS) by the Uplands Operations Management Consultant Manager are created by the assigned GOC II or III. Each parcel will be assigned a unique LITS surplus number which is connected to the originating LITS Acquisition Number. In addition, all surplus dispositions are recorded and tracked in the Disposition Tracking database (a Microsoft FoxPro database.) Surplus land data is entered into the database for each surplus land file. The information is also reviewed by the responsible parties. Staff uses the data in the Disposition Tracking database to prepare quarterly reports of sales, which are reviewed by the responsible parties. BRES keeps track of sales until closing. The funds received for surplus land and exchange transactions are forwarded to the Bureau of Financial

Management (FM) within the Office of Operations with a copy of the Money Deposit Information Sheet. The deposit form is also sent to the Finance and Accounting Revenue Section (F&A). FM deposits the funds and notifies F&A. Disposition staff notifies F&A in the case of an expected wire transfer which is deposited directly into the Treasury and F&A notifies the disposition staff when it is received.

After closing, the documentation for surplus lands is entered into LITS and is assigned a unique Disposition number which is linked to the LITS Acquisition and Surplus numbers. The file is then forwarded to the Title and Land Records Section where the LITS disposition record is completed

The BRES closing team is responsible for procurement contracting in which task assignments are prepared for DSL and other division offices that need assistance. Task assignments are created for title/closing services using department object and financial codes required for tracking and processing payments. The various products obtained under the procurement contracts are then reviewed by staff and approved by DEP attorneys for closing and post-closing documentation.

Warrant requests are prepared by the closing team for DEP's Finance and Accounting. The warrants are for compensation for closings and eminent domain court-ordered payments. A checklist is reviewed against the warrant request for accuracy.

The closing team not only closes the real estate contracts that are negotiated for purchase by the acquisition team, but also oversees all QA/QC for each individual file that is closed, including the use of checklists to identify the necessary steps to bring the file to closure and problem resolution of issues that may need to be addressed prior to closing. The closing team also works closely with OGC staff to ensure all legal requirements are met. After closing, staff verifies that the documentation for acquisition/donation lands has been entered into the Acquisition Process Information System (APIS) Tracking System. Title contractors may be tasked to close acquisition files as well. Several BRES staff members monitor the many various processes for compliance. ESAs in particular, as discussed under the QA/QC heading for OES on previous pages, utilize even further quality control/quality assurance checks.

The same closing team reviews and coordinates receipt of any corrections necessary to finalize the Title Policy, corrective instruments, FLAIR, BTLDS, and other reconciliation in cooperation with BSM's Title and Land Records group. Closed deeds and title policies are processed to the Title and Land Records group for entry into the records system and file storage recordkeeping. The closing team works closely with F&A to provide accurate land cost information as needed, and formally on a quarterly basis.

Eminent domain case reconciliation is performed by the closing team. Court documents that require warrant requests for court-ordered payments are also processed. Court deposits and additional payments are reconciled with the OGC who reconciles with the Attorney General's Office (AG) and the Collier County Clerk of Court to assure proper payments.

The BRES closing team is also responsible for overseeing post-closing escrow agreements and funds. When a closing occurs and money is held in escrow, the Closing Section Supervisor is notified when the escrow agreement has been complied with, and at that time, the supervisor confirms compliance with the appropriate party before the release of escrow funds is authorized. If the issue is environmental in nature,

the request for release of escrow monies goes to the OES. An OES staff member then checks to make sure that all areas affiliated with the request for release of escrow monies have been complied with, calculates then reviews the amount of monies to be released and finally submits the approval for the escrow money release prior to authorization of the release of funds. The Closing Section Supervisor then communicates with escrow agent for final release of funds.

Bureau of Appraisal

The objective of the Bureau of Appraisal is the protection of the public's trust while supporting the land acquisition, disposition and management activities of the Division by contracting with independent appraisers and review appraisers throughout the state for professional appraisal services. The purpose of these appraisals is to obtain an unbiased opinion of value of a property to be purchased or sold, or the values of easements, leases, conservation easements, or special purpose properties, such as boat slips. The same appraisal services are offered to other agencies outside the Division of State Lands. The bureau maintains a list of state-certified appraisers who meet the requirements to perform appraisals for the Division and the Board of Trustees. This list is made available to counties, municipalities, water management districts and other governmental agencies for their use in selecting appraisers.

QA/QC Function:

The Bureau of Appraisal (BA) ensures that appraisal products received from contractors meet the requirements of the Supplemental Appraisal Standards for the Board of Trustees (SASBOT), the Uniform Standards for Professional Appraisal Practice (USPAP), and when federal funding is involved, the Uniform Appraisal Standards for Federal Land Acquisitions (UASFLA) also known as the "Yellow Book".

Each contract for appraisal services specifies the appropriate standards to be followed, and the contract appraisers and reviewers provide a certification within each report that he or she is both geographically and technically competent to have taken the assignment and meets the applicable competency standards. In the event that a property has been appraised for acquisition purposes and the appraised value exceeds a specific value threshold, a *USPAP Standard 3 Review* is required by either a contract review appraiser or a BA Senior Appraiser to ensure conformity with all appraisal standards and instructions applicable for the assignment.

The BA Senior Appraisers serve as appraisal contract managers but also perform appraisals, appraisal review, and other valuation services as needed. Each is familiar with the requirements of SASBOT, USPAP, and reviewing to UASFLA standards. Each staff appraiser attends regular, biennial training on USPAP as well as other applicable appraisal training. All products require ultimate approval by the Appraisal Bureau Chief.

Bureau of Survey and Mapping

The Bureau of Survey and Mapping (BSM) is responsible for maintaining a repository of land records, determining the location of land and water boundaries, protecting the State's interest in land by clearly

delineating and defending the boundaries of state-owned lands, issuing opinions of title and defending the State's title and ownership interests in property vested in the BOT

BSM is arranged into three work groups (program areas): Land Acquisition & Management, Title and Land Records, and Public Land & Geodetic Survey.

- The Land Acquisition program area of BSM performs survey and mapping services for the former Preservation 2000 and current Florida Forever and other agency programs. This program area also performs reviews for the acquisition and sale of state lands.

QA/QC Function:

The Land Acquisition section of BSM oversees the review of land surveys, appraisal maps and legal descriptions for land acquisition purposes. Although generation of these products is at times completed in-house, the projects are usually provided to the Division of State Lands by private sector consultants under contract. Reviews of products for accuracy, correctness and completeness, against contractual (task assignment) scope provisions and applicable statutes and rules most commonly found in Chapter 177, F.S., and Chapter 5J-17, F.A.C., are performed in-house or by private contractors. Contracts contain verbiage which holds the consultant responsible for the products and services:

"The CONTRACTOR shall perform the services in a proper and satisfactory manner as determined by the DEPARTMENT. Any and all equipment, products or materials necessary to perform this Contract shall be supplied by the CONTRACTOR, unless otherwise specified herein."

BSM staff checks and verifies surveys and related products. Designated staff acts as contract managers and assign tasks to contractors for services. All tasks are reviewed and approved via separation of duties and involve another staff member, in addition to a separate funding authority. Products and services are reviewed for accuracy and completeness by internal staff and in some cases by contract consultant review staff.

Surveys are used for the acquisition and management of land. Acquisition surveys and products are matters of due diligence for land acquisition. Management surveys are typically prepared for land managers who enforce/defend boundaries.

- BSM's land management program area provides surveys and maps of state-owned lands in the past in order to resolve boundary issues. This program area also uses land surveys and legal descriptions, most of which are provided by private sector consultants under contract for land management purposes. This program area also contracts out for review of surveys and legal descriptions for land managers which enforce/defend land boundaries.
- The Land Management Section of BSM is also involved with providing water level, Safe Upland Line and Ordinary High-Water Line information for lakes, streams and rivers. The water level data is used to assist in the determination of safe upland lines.

QA/QC Function:

All surveys, maps and legal descriptions are reviewed by staff, or by separate contract consultant review staff, for accuracy, correctness and completeness against contractual scope provisions and applicable statutes and rules most commonly found in Chapter 177, F.S., and Chapter 5J-17, F.A.C. All tasks are reviewed and approved via separation of duties and involve another staff member, in addition to a separate funding authority. Further, contracts contain verbiage which holds the contract consultant responsible for the products and services:

“The CONTRACTOR shall perform the services in a proper and satisfactory manner as determined by the DEPARTMENT. Any and all equipment, products or materials necessary to perform this Contract shall be supplied by the CONTRACTOR, unless otherwise specified herein.”

The water management districts routinely inspect the gauges and new levels are run to them about every three years. There are base gauges and reference gauges at the sites so that independent readings can be made.

- The Title and Land Records program area of BSM provides presentation, reproduction, research and general administration of the land records of the BOT. It also provides maintenance of existing records; the processing of new incoming records, which includes preparation for scanning into BTLDS; Data processing and integration with FL-SOLARIS; title research for management, acquisition, disposition, permitting and general state land ownership requests; and filling of orders relating to reproduction of the various records, including public records requests.

QA/QC Function:

This program area of BSM utilizes internet accessed data and services, such as historic aerial photographs, government surveys and official records, from many county property appraiser offices, county clerk's offices, and aerial photograph sites (ex. from UF and DOT), as well as documents that are maintained in the Title and Land Records program area files to assess current issues and contextualize new information into the basis for real property ownership of the Board of Trustees. Staff members utilize in-house mapping and bureau talent and expertise when analyzing any new data submitted. The program area assigns tasks to title companies for basic title related services. Contractors are required to prepare products in accordance with statute, specifically Section 253.03(8)(a), (b) and (c) F.S., which corresponds to BSM's contract with FSU's FREAC (Florida Resources and Environmental Analysis Center) to compile and distribute the Public Land Inventory to Public Agencies and for integration in FL-SOLARIS with payment subject to Department review and approval. Contracts specify responsibilities and services required of the contractor such as the minimum detail requirements for reports, data and/or instruments provided by the contractor, identity of the program manager or other contract supervisor, and description of the duration and conditions under which the contract shall be fulfilled.

Records staff review and compile historic and current documents and mapping data for integration into the BTLDS, FL-SOLARIS and land records vault. For the mass upload of records in BTLDS that were migrated to FL-SOLARIS staff performs ongoing review and verification of documents and data for QA/QC. For new documents, after review for accuracy, records staff prepares the documents for scanning into the BTLDS database. After scanning, staff performs QA/QC of BTLDS land inventory property management data for

BOT owned lands as well as linking newly scanned acquisition, management and conveyance documents to the land inventory in BTLDS and LITS component of FL-SOLARIS. Scanned documents are used as the basis for creation and updating of the BTLDS property management inventory component. Records staff also reconciles BTLDS data with the Public Lands Inventory (PLI) tax parcels, FL-SOLARIS and with FLAIR for land acquisitions.

The Title Research staff provides accurate and timely title determinations of the BOT's ownership interest in environmental resource applications for projects within the State for the district permitting offices and water management districts. Research staff completes determinations as well as conducting state land ownership research at the request of the Cabinet and Legislative offices, tax assessors and property appraisers, law enforcement agencies, private and state attorneys, other offices within DEP, other agencies, governmental entities, corporations, surveyors and the general public.

Research staff is assigned specific counties so that new ownership queries are continually evaluated by review with previous determinations and valid new information is incorporated into the program area files. Determinations are reviewed by supervisors to verify accuracy and consistency and have additional work completed when necessary. Completed determination reports and images are stored in BTLDS.

BTLDS has undergone a significant upgrade due to the outdated technology of the previous system. BTLDS has been modernized with updated technologies that now meet the standards and requirements of DEP's Office of Technology and Information Services (OTIS). Business processes between mission critical applications, BTLDS and Florida State Owned Lands and Records System (FL-SOLARIS), have been enhanced to include seamless integration and web-enabled access for greater user efficiency. This "Refreshed" BTLDS now provides enhanced functionality in the following areas: Document Management, GIS, Land Use Summary, Worksheet, Mapping, Administrator, DEP Data Search, BTLDS Public Data Search, and Reports. Title and Land Records staff continue to be active participants in the maintenance of BTLDS.

- The Public Land and Geodetic Survey program area of BSM is responsible for providing survey and geographic data for LABINS. This group also provides for the collection of water level and meteorological collection and geodetic control data for the state. The same program area of the bureau performs identification, restoration and preservation of the controlling corner monuments established during the original cadastral surveys related to the Restoration of Corners Act (F.S. 177 Part III). Responsibilities also include locating the mean high-water line as recognized in the State Constitution as the boundary between state sovereignty land and uplands subject to private ownership for the Coastal Mapping Act (F.S. 177 Part II) and providing liaison and technical assistance with the National Ocean Service/National Geodetic Survey and the public.

QA/QC Function:

All horizontal and vertical control surveys performed by BSM require QA/QC on observed measurements which must also meet the National Geodetic Survey (NGS) specifications and be checked by federally developed software. Level lines are processed using Translev. Mark descriptions are prepared, checked and entered into WinDesc. WinDesc is the NGS approved software program for Windows-based computers for the purpose of creating, editing, and submitting recovery information for a bench marks(s) and is

incorporated into Translev. The vertical control surveys are performed using compensating levels and the data that is collected and processed for closure checks to multiple benchmarks. Field measurements for vertical control are automatically accepted or denied by internal instrumentation software provided by NGS for the automatic electronic leveling units. Staff ensures that NGS specifications are followed in field collections of data and office computations. When surveying horizontal control for latitude and longitude locations, measurements are collected and evaluated by calculating mathematical closures to known existing horizontal control points. Horizontal control data is obtained utilizing the manufacturer's post processing GPS/GNSS software. (Currently the bureau uses GNSS Solutions 3.00.07 by Magellan Navigation, Inc. to process the measurements.) and calculations are performed until required accuracies are attained. The horizontal and vertical control survey data is published through the NGS and state agencies for surveyors and mappers, engineers and the public.

The Public Land and Geodetic branch of BSM is responsible for the construction and maintenance of tide and meteorological stations throughout the state. These stations contain sensors that capture the following data: water level, wind speed, wind direction, air temperature, humidity, air pressure, rainfall, conductivity, water temperature, dissolved oxygen and pH. The sensors are calibrated by the manufacturers at the time of purchase. QA/QC is performed on the sensors in the field bi-monthly or monthly, depending on the type of sensor. During monitoring, when measurements are found to be an "out of range" reading and the sensor is deemed out of range, it is re-calibrated by BSM or replaced by sending it back to the manufacturer for re-calibration or replacement. BSM is currently providing the data digitally and are sharing the data via website: [Florida DEP tide and meteorological stations](#).

BSM is providing digital water level data used to model the flow of water and pollutants, determine tidal datums, determine mean high-water line boundary determinations, and navigation by the boating community.

All Mean High-Water surveys are filed pursuant to Chapter 177, Part II, F.S. and are checked by staff for compliance with that applicable statute and National Ocean Service (NOS) specifications. Mean High Water Elevations displayed on the LABINS website ([Florida DEP Land Boundary Information System](#)) are checked based on the scientific information that is supplied by the National Oceanic and Atmospheric Administration, National Ocean Service. Corner records that are filed are reviewed for compliance pursuant to Chapter 177, Part III, F.S. The Mean High-Water elevations and surveys, Erosion Control Line surveys and Certified Corner records are published for private and public distribution. BSM acts as the public repository for Mean High Water surveys and Certified Corner records, pursuant to Chapter 177, Parts II & III, F.S. After Erosion Control surveys are approved by BSM, they are recorded in the official records of the applicable county or counties.

Land and Recreation Grants

The Land and Recreation Grants Section's programs assist Florida's local communities that have unmet financial needs for conservation and recreation.

The Land and Recreation Grants Section administers four state and federal grant programs: Florida Communities Trust (FCT), (Parks and Open Space and Stan Mayfield Working Waterfronts Programs), Florida Recreation Development Assistance Program (FRDAP), Recreational Trails Program (RTP) and Land and Water Conservation Fund Program (LWCF)

- FCT grants are funded through Florida Forever. They include:
 - Parks and Open Space provides grant funds to local governments and nonprofit organizations to acquire conservation lands, urban open spaces, parks and greenways.
 - Stan Mayfield Working Waterfronts provides grants to acquire interests in land for the restoration and preservation of working waterfronts

Small local governments and cities with a population of 10,000 or less, small counties with a population of 75,000 or less, and nonprofit organizations qualify for a 100 percent grant. A local match is required of all other applicants.

QA/QC Function:

Title to lands acquired under Florida Forever through the FCT program is vested in the local grant recipient, however, the deed or other instrument of conveyance includes a reversionary interest to the State in case any essential term or condition of the grant is violated. Because of the revisionary interest to the state, the land acquisition procedures utilized by FCT are consistent with those established by DSL for acquisition of state lands. FCT utilizes the services of the Bureau of Real Estate Services, the Bureau of Appraisal, the Bureau of Survey and Mapping, and the Office of Environmental Services in each land acquisition and applies the same QA/QC functions implemented in those programs.

- Florida Recreation Development Assistance
 - Provides state funds to acquire or develop lands for public outdoor recreation. Eligible applicants: municipal and county governments and other authorized entities with the legal responsibility to provide public outdoor recreation

Projects of \$50,000 or less qualify for a 100 percent grant. A local match is required for grants greater than \$50,000. Maximum grant amount is \$200,000.

- Recreational Trails

Provides federal grants for projects that provide, renovate or maintain motorized and non-motorized recreational trails, trail heads and trailside facilities. Eligible applicants: municipal or local governments, state agencies, federal agencies, Indian tribal governments and nonprofit corporations that have an agreement with a governmental agency to develop public lands.

All grant awards must be matched. Applicants choose either 50:50, 60:40, or 80:20 match. Refer to the current application for maximum grant amounts.

- Land and Water Conservation Fund

Provides federal funds to acquire or develop lands for public outdoor recreation. Eligible applicants: local governmental entities with the legal responsibility for providing public outdoor recreational sites and facilities.

Grant awards must be matched 50:50.
Refer to the current application for maximum grant amounts.
Funding is contingent upon approval by the National Park Service

➤ Economic Impact of Local Parks

The Land and Recreation Grants Section within the Division of State Lands promotes and fosters partnerships to enhance and sustain Florida's natural land and cultural resources through grant funding for conservation and outdoor recreational opportunities. Local and regional public parks add significant value and benefits to their communities in terms of conservation, health and wellness, and social equity. Beyond that, local and regional park agencies are also engines of economic activity in their communities.

The Grants Section also houses the Florida Green Lodging and Florida Green School Designation Programs.

Contract Development and Management

- Responsible for the development, execution and oversight of grant agreements with local sponsors outlining the scope of work, programmatic requirements and financial responsibilities of the state and grantee

Fiscal Oversight and Cost Reimbursement

- Review performance and financial reports for statutory and programmatic compliance. Review, reconcile and approve submitted invoice packages for processing by Finance and Accounting for reimbursement to local governments for dollars expended on specific projects

Site Inspections

- Conduct physical inspection of project sites to ensure compliance with terms of grant agreement and statutory and rule compliance

Stewardship Reporting and Management

- Verify conditions imposed at the time of the grant award are being followed and monitor the management and use of a project site to include revenue generated

Technical Assistance

- Provide training and assistance in the completion of grant applications, statutory compliance and programmatic rules and procedures

Bureau of State-Owned Lands Inventory

The Bureau of State-Owned Lands Inventory (BSOLI), or Modernization Section as it was called in the beginning, began in the mid-1990s. It was created because of legislation, Florida Statute: 253.0325(1), mandating that the Department of Environmental Protection "Initiate an ongoing computerized information systems program to modernize its state lands records and documents that relate to lands to which title is vested in the Board of Trustees of the Internal Improvement Trust Fund." An illustrative component was created to generate and store maps of the state-owned parcels. The DEP created the Board of Trustees Land Document System (BTLDS) to meet the requirements of the statute. The BSOLI creates and maintains the spatial data.

BSOLI has three primary responsibilities:

- GIS mapping production services to the Governor and Cabinet for the Board of Trustees Land Document System (BTLDS), which functions as Florida's title provider to the Board of Trustees.

BSOLI has mapped 226,494 parcels described in 95,880 documents archived in BTLDS. These parcels form the basis of the FL-SOLARIS State Lands Inventory.

QA/QC Function:

The GIS mapping team within the Bureau of State-Owned Lands Inventory (BSOLI) maps all land document vested in the Board of Trustees of the Internal Improvement Trust Fund (TIITF). These documents are scanned into the Board of Trustees Land document System (BTLDS) by the Title and Land Records Section of the Division of State Lands (DSL). Once the documents are scanned into the BTLDS, the system directs them to the GIS mapping team. The mapping staff uses the legal description with the document to research the location of the property described. Using the legal description, previously mapped documents, and any other research material including but not limited to, boundary surveys, General Land Office plats, county tax parcel records, county Clerk of Court records, Department of Revenue (DOR) cadastral data, Department of Environmental Protection (DEP) GIS layers, DSL land acquisition files, and DSL upland & submerged land lease files; a geospatially referenced polygon is created and submitted to the BTLDS. As new documents are added to the BTLDS, and newer, possibly better information, becomes available, previously mapped documents are constantly being reevaluated and updated as necessary to improve and maintain the accuracy of the BTLDS GIS Data.

- Responsible for the development and operation of the legislatively mandated Florida State Owned Lands and Records Information System (FL-SOLARIS). This system serves as the State's repository of State-owned lands and facilities inventory data and has become a valuable resource for the effective management of over 22,000 facilities and 71,000 state owned land parcel records for state agencies, legislators, cabinet offices and the public.

The information within the FL-SOLARIS comes several other systems such as APIS, BTLDS, and LMS. So along with all the quality checks that the data goes through for those systems, FL-SOLARIS has verifications that were built into the system during the design which further help to insure the quality and accuracy of the data. The system flags any discrepancies and those are then reviewed and if necessary, updated in the appropriate system.

Along with the maintenance of the FL-SOLARIS, BSOLI also manages the GIS data for the system. The data for the DEP is a subset of the GIS data in the BTLDS. So again, the GIS data has already gone through numerous checks related to that system, but once it is submitted to the FL-SOLARIS, it undergoes further verifications. The system compares the newly submitted GIS data to the current data in the system to check for errors and it also compares the data with DOR data to find any discrepancies between what we are reporting as state-owned land and what the counties are reporting.

- Responsible for the development and management of the legislatively mandated enterprise systems such as the Land Management Plan module (LMP), Conservation Land Easement and Recreation (CLEAR), Submerged and Uplands Revenue Systems (SUPRS), the Acquisition Process Information System (APIS) and the Board of Trustees Land Document System (BTLDS). The Bureau is challenged to keep all systems up and running while staying abreast of new technologies.

To ensure that the figures (acres, closed prices, estimated values, acquisitions by county, invoice totals, etc.) provided in Qlik reports are accurate the numbers are checked and double-checked by queries written against the database to check for accuracy. Also, when reports are converted from one technology to another (for example from Crystal Reports to Qlik, the figures are balanced against each

other and if there is a discrepancy or difference the cause for that difference is determined before proceeding with publication in the new technology.

In the past, the key figures in APIS were compared to the same key figures in the “Acquisitions” spreadsheet kept by Sheryl Boutin. At that time, cleanup was performed (to make small changes where necessary and defensible) to bring those key figures into balance with one another (APIS to the spreadsheet).

A check on the accuracy of the figures from SUPRS is that these are balanced against an independent system outside of DSL, the Cash Receiving Application figures.

Training

All DSL personnel are properly trained to perform their duties. Supervisors periodically assess staff performance to ensure conformance with the policies and procedures of the unit. Though many of DSL’s members hold varied types of degrees and education, as well as various certifications and licenses, only certain types of training are actually required for employment within DSL. DSL’s training requirements include:

DO

- DEP provides employees with an entire suite of online courses that provide a one-stop reference for online training needs. This is the source for employee compliance training along with supervisory, professional development, safety, and workers' compensation courses. Link: [Online | Training | Administrative Services | Florida DEP](#)

OES

- The ESA reviewer is trained in the applicable ASTM E 1527-13 and ASTM 2247-16 standard which correspond with Phase I ESAs.

BPLA

- BPLA maintains procedures manuals, video tutorials, and PowerPoints in printed and interactive digital formats for staff in four program areas: uplands administration, submerged lands administration, asset management, and document management. In addition to these materials, BPLA creates and maintains training manuals and presentations for the benefit of public and private stakeholders.

BRES

- BRES Staff must have knowledge of real estate principles. BRES procedures manuals are available as training and refresher tools.

BA

- The Bureau of Appraisal (BA) requires that its staff appraisers have and maintain state appraisal certifications or appraiser trainee status. To maintain the state appraisal certification or trainee status, 30 hours of appraisal continuing education must be taken biennially. The Bureau Chief ensures and oversees that completion of the continued education is accomplished by the appropriate individuals within the BA. Educational course material options are approved by the Florida Real Estate Appraisal Board, Department of Business and Professional Regulation. Included in the 30 hours of required continuation education are courses regarding current training in appraisal theory and technical appraisal methodology, as well as the Uniform Standards of Professional Appraisal Practice. These appraisal standards must be met by contract appraisers and reviewers for all BA appraisal assignments. Failure to obtain the required continuing training education will result in loss of professional certification or license.

BSM

- Professional Surveyors and Mappers are required to have a license which must be renewed every two years. In addition, the Surveyor must take 24 hours of Continuing Education Credits (CEC) every two years before the license can be renewed, with at least six of those hours being an approved provider's course or seminar on Florida's laws affecting the practice of surveying and mapping. Training manuals are provided by the educational provider. A BSM supervisor oversees and ensures that each Division surveyor completes the CEC in a timely manner, and the documentation to support the CEC completion is maintained by the supervisor for five years, as well as the Board of Professional Surveyors and Mappers within the Department of Agriculture.
- All Professional Surveyors and Mappers are required to be licensed pursuant to Chapter 472 FS and Rule 5J17 FAC.
- Land management surveyors in BSM must also be certified to operate watercraft and trailers per DEP Directive 620, which is renewed every five years. This certification involves the corresponding training manuals. This group must also be versed and trained in the newest releases of Autodesk and ESRI mapping software which comes with corresponding manuals that are used to train surveyor staff. A supervisor both ensures that the surveyors receive the training and maintains all certificates of completion.
- The Title and Land Records group have procedure manuals for BTLDS and individual procedures for Records Management.

Land and Recreation Grants

- In accordance with subsection 287.057(14), Florida Statutes, each FCT Planner completes training in contract management and becomes a certified contract manager. Certification requires successful completion of eight online training modules, a two-day instructor-led training, and a final assessment with a minimum score of 80%.
- Bureau of State-Owned Lands Inventory

Recommendations

To further improve the division's quality of production and achievement, the following are general recommendations DSL may want to employ for the future viability and success of its missions:

Establish a written protocol for each database to be used by data entry personnel throughout the division's bureaus, so that inaccuracies and mistakes are discovered and resolved prior to user operation of the database systems.

- KYRA Solutions is currently developing protocols for the APIS database
- After the completion of the database integration that has been undertaken by the Division, establish a uniform QA/QC protocol for all data entry personnel.

Appendix A: Glossary of Acronyms

AG	Attorney General's Office
APIS	Acquisition Process Information System
ARC	Acquisition and Restoration Council
BA	Bureau of Appraisal
BDR	Baseline Documentation Report
BTLDs	The Board of Trustees Land Document System
BOT	Board of Trustees (of the Internal Improvement Trust Fund)
BPLA	Bureau of Public Land Administration
BRES	Bureau of Real Estate Services
BSM	Bureau of Surveying and Mapping
BSOLI	Bureau of State-Owned Lands Inventory
BTLDs	Board of Trustees Land Document System
CAD	Computer Aided Drafting
CLEAR	Conservation Land Easement and Recreation
DEP	Department of Environmental Protection
DO	Director's Office
DOR	Department of Revenue

DSL	Division of State Lands
ESA	Environmental Site Assessment
FAC	Florida Administrative Code
FCT	Florida Communities Trust
FCO	Fixed Capital Outlay
FDEP	Florida Department of Environmental Protection
FEMA	Federal Emergency Management Agency
FLAIR	Florida's Accounting Information Resource
FL-SOLARIS	Florida State Owned Lands and Record Information System
FNAI	Florida Natural Areas Inventory
FRDAP	Florida Recreation Development Assistance Program
FS	Florida Statutes
GIS	Geographic Information Systems
ILMS	Integrated Land Management System
LABINS	Land Boundary Information System
LWCF	Land and Water Conservation Fund Program
NGS	National Geodetic Survey
NOS	National Ocean Service
OES	Office of Environmental Services
OGC	Office of General Council
OGT	Office of Greenways and Trails
PLI	Public Lands Inventory
PMDC	Performance Measures Data Collection
QA	Quality Assurance
QAO	Quality Assurance Officer

QA/QC Quality Assurance/ Quality Control

RTP Recreational Trails Program

SASBOT Supplemental Appraisal Standards for the Board of Trustees

SQL Structured Query Language

SUPRS Submerged and Upland Public Revenue System

TIITF Board of Trustees Internal Improvement Fund

QMP Quality Management Plan

UASFLA Uniform Appraisal Standards for Federal Land Acquisitions

USGS United States Geologic Survey

USPAP Uniform Standards for Professional Appraisal Practices

WMD Water Management District

Appendix B: FNAI Procedures
FNAI PROCEDURES FOR PROCESSING OF
ELEMENT OCCURRENCE RECORDS (EORS)
(An In-house Guide)

Produced by the Biotics Data Committee composed of Glenn Woodsum, Sally Jue, Linda Chafin, Katy NeSmith, and Carolyn Kindell

RESPONSIBILITY FOR EOR PROCESSING

Data Management Staff is responsible for monitoring the flow of the process. They will notify Senior Scientists of any procedural problems or systematic errors and update all pertinent staff with any changes in the procedure. After staff is notified via e-mail or a memo, the changes will be recorded in the FNAI Operations Manual (in revision).

Project Managers are responsible for the processing of all EORs associated with Special Projects. Special Projects will require a prior commitment of staff time for EOR processing, which must be coordinated with the staff member and his/her supervisor.

Senior Scientists and/or Program Area Leaders from each program area are responsible for all EORs of their program area type (plant, animal, or natural community) that are not part of a Special Project. Senior Scientists and Program Area Leaders can, of course, delegate tasks to staff members within their program area (or outside their program area if agreed upon by the appropriate supervisor) but they are ultimately responsible for ensuring that the work required to complete all the steps in the processing of an EOR is done in a timely manner. This will involve reviewing finished EOR data packets and communicating with Data Management Staff to assure that there are no backlogs, bottle-necks, or other problems causing delays. This will also involve correcting any problems and assigning the necessary tasks to staff members to make sure that the EORs are progressing in accordance with office and/or program area schedules (as per office-wide calendar).

All Scientists and Scientific-support staff are responsible for working on every step of the process described below, as directed by their supervisors or as per their job objectives (particular staff members will not be assigned specific tasks as part of this procedure; supervisors will be responsible for coordinating and assigning tasks to appropriate staff).

THE EOR PROCESSING STEPS

EOR Entry for new EORs

1. Assemble the EO source materials

Gather all the source documents (hard-copy and/or digital) you will need for mapping of the EO and (later) entry of the associated text fields. These materials could include a field form, published or unpublished report, printed program areas of spreadsheets or attribute tables, digital shapefile, field notes, copy of a quad map, etc. Attach a copy of the EOR cover sheet form as the first page in each EO source packet. Fill in the element name on the EOR cover sheet. Check the box for New EOR on the cover sheet and indicate whether or not this is to be a sub-EO and, if so, give the EO_ID and EO_number of the parent EOR (if not known at the time you create the EO then you will have to come back to fill in this field).

2. Map the EO source(s)

- Enter Biotics Mapper and proceed to Input/Edit mode for creation and placement of source features for the EOR. Details of feature making are not presented here. For each EOR, add the element code (from the “create source feature” window) to the cover sheet.
- If you define multiple source features that will comprise a single EO representation, enter the total number of features on the cover sheet. For multiple source features it is a good idea while mapping to enter a descriptive source feature label to assist in later checking of the data.
- If a copy theme is used for the source feature shapes, enter the path to the file on the cover sheet.
- Check the box for “Defer calculation of spatial attributes” if you plan to map several EOs during your current session. Enter data as appropriate in the Identifiers and Mapping tabs for each of your source features.
- If your EO will be made from a single source feature, you may check the box for “Create EO Representation from Source Feature” in the create source feature window. For a compound EO (multiple source features) leave this box unchecked for each source feature.

3. Generate the EO representation

- If your EO will be made from a single source feature and you checked the box for “Create EO Representation from Source Feature” in the create source feature window, Mapper will automatically proceed to generate the EO rep when you finish the source feature.
- For a compound EO (multiple source features) you must use the “chain tool” followed by a selection of all of the related source features for the EO. This will initiate the generation of the EO rep.
- Record on the EOR cover sheet the EO number and EO_ID assigned by Biotics.
- Record your initials and the date of mapping on the EOR cover sheet.

- Exit the Input/Edit mode when you have finished all of the source feature and EO creation activities for your session. At this time, you should specify that deferred spatial attributes should be calculated.

4. Enter the EO tabular data

Tabular data for the EO are now entered directly into the computer as opposed to being transcribed to a hard-copy form. We will also refer to this direct entry process as transcription.

- Launch the Tracker application and enter the view mode for “Element occurrences”.
- Use the find button or menu item to select an EOR for which you want to add tabular data. The simplest method is probably to enter the EO_ID on the Code/ID tab (find element occurrence window) as recorded on the EOR cover sheet when the EO representation was created.
- When the record is found, click on the “Details” button, then proceed through the various tabs in the EO window to enter the data fields appropriate to the EOR. For help with filling out EOR fields in Biotics Tracker, please refer to the FNAI data content and standards document (in preparation) or use Biotics’ on-line help system (click on the “?” button when your cursor is in the desired EOR field to bring up the help screen).
- When you have completed tabular data entry, set the Data QC status field on the Version /QC tab to “Incomplete”. Then on the EOR cover sheet check the corresponding box for setting QC status, enter your initials as the data transcriber, and add the date of entry.

5. Print the EOR data and assemble QC package

- Using one of the Crystal Reports programs for EO proofing (EO_Proof_ID, EO_Proof_WL_id, EO_Proof_WL_name), obtain a printed copy of the EOR.
- Assemble the final EOR QC package by inserting the proof report after the EOR cover sheet and before any of the supporting source materials (field forms or notes, hand-drawn maps, copies of quads, etc.).
- Deliver the finished QC package to an FNAI scientist different from the one who originally processed the data or place it in the QC1 staging area for the appropriate type of EOR (Plant, Animal, Natural Community, or Special Project) and the Data Manager will assign QC responsibility. Until the GMF is reorganized, the QC staging area is in Data Manager’s office.

6. QC1 – mapping QC (must be performed by someone other than the original mapper)

- With Biotics Mapper running, the EO.Reps (Polygons) theme active, and an EOR QC package (headed by an EOR cover sheet) in hand, use the “Zoom by” tool or the Query (“hammer”) button to go to the vicinity of the EOR you want to QC. Select the Query Active Theme(s) button and draw a rectangle around a portion of the view that includes the EOR to check. If multiple EO reps are presented in a “Query Element Occurrences” window, select the appropriate one and click on “Details”.
- Verify that the EO rep is for the correct element and that the Shape ID (EO rep feature ID) matches the one recorded on the EOR cover sheet. This will seem circular if these were used to select the EO rep in the first place, but other methods can be used to query the EO rep and in those instances these checks will be necessary.
- Make sure that the number of source features in the EO rep matches the data on the EOR cover sheet.
- Click on a source feature in the Query Element Occurrence window, then the “Details” button, and verify that the conceptual feature type, locational uncertainty type and distance class, and mapping attributes agree with what you would expect based on the source data included in the EOR data packet.
 - Use the “View shape” button to check the digitizing of the source features and verify that each source feature is consistent with the source data.
 - If there is a problem with any of the source features set the QC status on the General tab to “FAILED” and note the reason(s) for failure in the Remarks field
- Repeat the above step for all of the source features
- After all of the source features have been checked, move to the “Spatial Attr” Tab in the query element occurrence window and verify that the spatial attributes have been calculated. If you see that spatial attributes have not been calculated for this EOR, notify Data Management staff who will make sure that these attributes are calculated. Note also whether or not any attributes for site or MA are consistent with source data.
- Examine the shape of the EO representation and verify that it makes logical sense given the nature of the source feature(s) and supporting data.

If at any point in this process the data do not match your expectations based on the information on the EOR cover sheet or the data in the EOR source materials, confer with the person responsible for mapping and attempt to resolve any differences of opinion or interpretation before completing the QC process.

- When all of the above checks have been performed, proceed to the QC/General tab of the Query Element Occurrence window. If all checks were successful set the Quality Control Status to “PASSED”. If any checks were unsuccessful and were not able to be resolved after consultation with the original mapper, set the QC status to “FAILED” and note the reason(s) for failure in the quality control Remarks field. In both cases enter your name (using the form “last

name, FI. MI.”) and date on which you performed the mapping QC.

At this point you may 1) continue on with QC2 (Tracker data QC), or 2) return the EOR packet to the EOR staging area in the “Ready for QC2” file (for EORs with QC=PASSED) or the “QC failed” folder.

NOTE – if you intend to proceed directly to Tracker QC you may want to save one or more of the EORs you have been working on to a working list (BIOTICS menu “Save Working List...” item). This will facilitate finding the EORs quickly (with the List menu “Open List... item) after you open Tracker.

7. QC2 – Tracker QC

QC of the text fields associated with an EOR has necessarily changed considerably since the days when data were rewritten (transcribed) to a hard copy form prior to computer entry. Now EO information is typed directly into the computer based on the contents of various source materials, typically field report forms, field notes, published reports, or other scientific literature. The job of the QC2 checker is thus primarily to ensure that the data as entered conform to FNAI and/or NatureServe data entry standards, are free of typographical or grammatical errors, and are logically consistent within the set of fields comprising the EOR and with the source material. In the absence of transcription forms, there may not be any hard copy text against which the reviewer can perform a word-for-word type of comparison.

The ‘QC2’ part of the EOR procedure really consists of three steps: proofing, updating Tracker with the corrected data, and setting the ‘Data QCStatus’ field to a value of “Passed”. It is very important that the ‘QC’ field be updated on the paper copy and in Tracker, as this field will be used to determine if an EOR is complete and ready for dissemination to the public.

First check the EO proof report printout to verify that all of the required fields have been entered. These fields are highlighted with white text on a black background on the proof report. If all fields are present, check the box on the EOR cover sheet. If not, return the data package to the transcriber for completion.

Check contents in EO data program areas for logical consistency, consistency with data from the source materials, spelling, punctuation, grammar, and data content and format standards. This is not necessary for the Locators, Sources, and Spatial data program areas, which are either entered automatically by Biotics or have been previously QCed in Mapper.

- For all EORs, data program areas include Identifiers, Site/Directions, Rep. Detail, Rep. Extent, Survey Information, EO Rank, Description, Protection, MA/Ownership, Additional Topics, Documentation, Version/QC, and Extensible Data. Natural community EORs also include program areas for Rel. to Std, EO Rank Factors, Environment, Composition, Structure, and Inventory.
- Mark changes directly on the EO proof printout, using red pencil.
- To make corrections arising from your proofreading of the EO record, first open Biotics Tracker,

select the Element Occurrence View mode, then find the EOR(s) you want to revise. The best methods are probably to use the Find menu or Find button, along with the EO_ID as recorded on the EOR cover sheet for the EO, or to open a previously saved working list containing a set of EORs to QC.

- Locate the tab(s) containing the data to revise and make the corrections. As you make a correction make a small red check mark next to the revision notes on the proof report.
- When all corrections are complete, proceed to the “Version/QC” tab and set the “Data QC Status” field to “Passed”. Enter your name (using the form “last name, FI. MI.”) into the “Data QC By” field.

8. Final QC and disposition of the EOR

- When the mapping and data QC processes are complete, deliver the finished EOR data packet to the senior scientist or program area leader responsible for your project or type of data.
- Senior scientist or program area leader only – review the finished EOR data packet as you want, then place the packet in the “completed EORs” file (currently in Glenn’s office). This review is simply to enable you to keep in touch with the data being generated within your discipline and can be as detailed as you wish.
- Data management staff – perform a final QC on the data packet, initial and date the EOR cover sheet, then place the EOR packet in the “to-be-filed” file. This is a process-oriented QC, not another content QC. It will allow data management staff to monitor overall data flow and to ensure that standard procedures are being followed.

**FNAI PROCEDURES FOR PROCESSING OF
ELEMENT OCCURRENCE RECORDS (EORS)
(An In-house Guide)**

Produced by the Biotics Data Committee composed of Glenn Woodsum, Sally Jue, Linda Chafin, Katy NeSmith, and Carolyn Kindell

Edited 2015 to reflect processing procedure for Biotics 5 by Frank Price (FNAI data manager)

RESPONSIBILITY FOR EOR PROCESSING

Data Management Staff is responsible for monitoring the flow of the process. They will notify Senior Scientists of any procedural problems or systematic errors, and update all pertinent staff with any changes in the procedure. After staff is notified via e-mail or a memo, the changes will be recorded in the FNAI Operations Manual (in revision).

Project Managers are responsible for the processing of all EORs associated with Special Projects. Special Projects will require a prior commitment of staff time for EOR processing, which must be coordinated with the staff member and his/her supervisor.

Senior Scientists and/or Program area Leaders from each program area are responsible for all EORs of their program area type (plant, animal, or natural community) that are not part of a Special Project. Senior Scientists and Program area Leaders can, of course, delegate tasks to staff members within their program area (or outside their program area if agreed upon by the appropriate supervisor) but they are ultimately responsible for ensuring that the work required to complete all the steps in the processing of an EOR is done in a timely manner. This will involve reviewing finished EOR data packets and communicating with Data Management Staff to assure that there are no backlogs, bottle-necks, or other problems causing delays. This will also involve correcting any problems, and assigning the necessary tasks to staff members to make sure that the EORs are progressing in accordance with office and/or program area schedules (as per office-wide calendar).

All Scientists and Scientific-support staff are responsible for working on every step of the process described below, as directed by their supervisors or as per their job objectives (particular staff members will not be assigned specific tasks as part of this procedure; supervisors will be responsible for coordinating and assigning tasks to appropriate staff).

FNAI Biotics 5 EO Mapping Cookbook

April 17, 2014

1. In Biotics observations are mapped as [Source Features](#) and these are grouped together in [Element Occurrences](#) (EOs). An EO is “is an area of land and/or water in which a species or natural community is, or was, present.” and can be thought of as similar to a population. [EO Specifications](#), or EO Specs, are rules for creating EOs and may be specific to a species or a larger group. For MOST plants, EO specifications are simple so you can skip to step 2. For animals, not every observation is suitable for development into a source feature that will become part of an EO. For example, an observation of a wood stork in a ditch wouldn’t necessarily be suitable for EO creation because the EO specifications for nonbreeding occurrences states:

“Evidence of recurring presence of flocks of non-breeding birds (including historical), including non-breeding birds within the breeding season and breeding individuals outside the breeding season; and potential recurring presence at a given location. Normally only areas where concentrations greater than 10 birds occur regularly for at least 20 days per year would be deemed occurrences. Be cautious about creating occurrences for observations that may represent single events.”

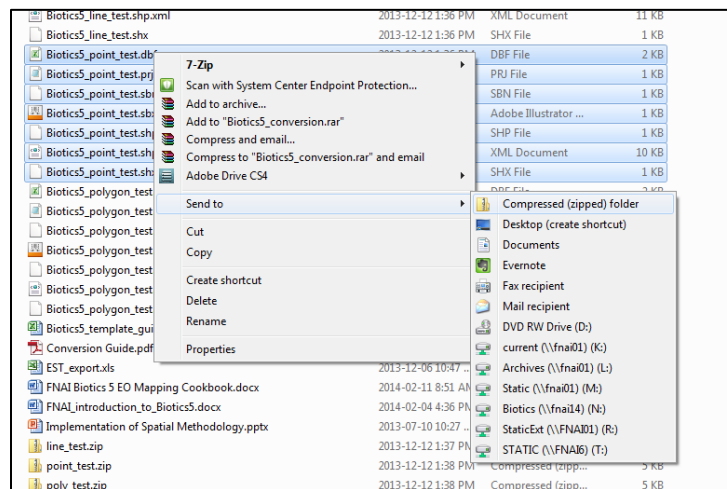
To determine if your animal data are suitable for development into an EO:

- a. Log into Biotics 5 at <https://bioticsfl.natureserve.org/>
- b. Under **Record Management** click **Elements**
- c. Click the  **Search** icon on the far left.
- d. Enter the scientific or common name, being sure to check “common name” if that’s what you’re searching by, and click the blue search button at the bottom of the pop up window.
- e. There will be three matching results for every species (a subnational, national, and global level record, see the “Geo Level” column). Click the green **Element ID** link in the first column of the search results for any of these records.
- f. Click the blue Related Record Menu button in the upper left, hover over **EO Specs** and select **For Global Element** OR, if this choice is grayed out, select **For Element Group**.
- g. Read through the Minimum EO Criteria to determine if your data are suitable for EO creation. If it is, proceed to step 2. If it is not STOP, your data should not be entered into Biotics.

NOTE: Some species may have multiple **Location Use Classes**. If this is the case, you will see multiple numbered lines at the top of the EO Specs window right below the **EO Specs Details** heading. Find the applicable **Location Use Class** for your observation and click anywhere in the line to view the specs for the appropriate class.

2. Once you determine that your data is **suitable for development into an EO** you need to decide how you are going to enter your data into Biotics. There are three general ways to do this:
 - a. If you have coordinates for just a few points, you can create a source feature directly from the coordinates. Proceed to step 3.
 - b. If you have a shapefile of points, lines, or polygons with fewer than 30 features suitable for development into source features then you'll want to import your shapefile into Biotics as follows:

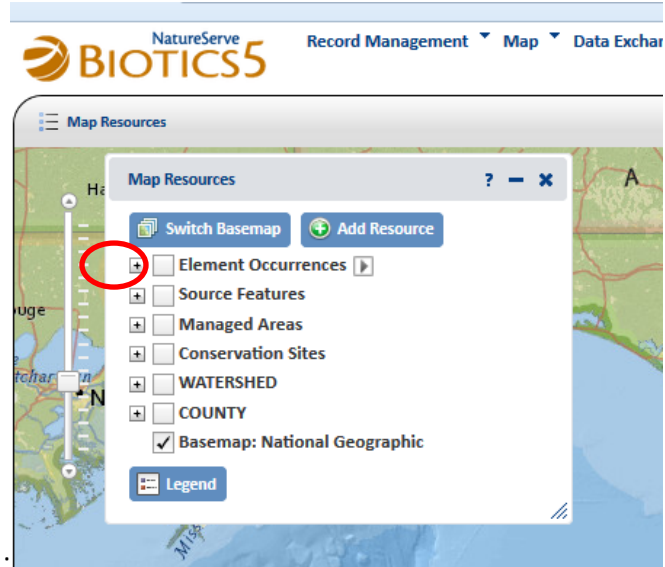
- i. In Windows Explorer navigate to the folder where your shapefile is stored
- ii. Check that one of the files has a .prj extension. If you don't have a file with a prj extension, refer to the FNAI GIS Manual for instructions on how to define and/or project your shape file.
- iii. Once you have a shape file with a prj file, select all of the components of your shape file (EXCEPT FOR ANY HTML METADATA), right click on them and hover on "Send to" and then click Compressed (zipped) folder. This will create a zipped version of your shape file in the same folder which you can import into Biotics.



- iv. Log into Biotics 5 at <https://bioticsfl.natureserve.org/>
- v. Click **View Map** under **Map**.
- vi. Click the **Map Resources** link in the upper left.
- vii. Click the blue Add Resource button.
- viii. Check off File instead of the default Library.
- ix. Type a short name for the shape file that you are going to upload in the "Unique Title for Resource:" box
- x. Click the blue Select File to Upload button, navigate to the location of the shapefile you just created and click Open. Your shape file will be added to the map. You can close the Add Resource box.
- c. If you have a shapefile of points, lines, or polygons with MORE than 30 features suitable for development into source features you may want to bulk load them directly into Biotics as source features. Contact Frank for guidance on how to proceed.

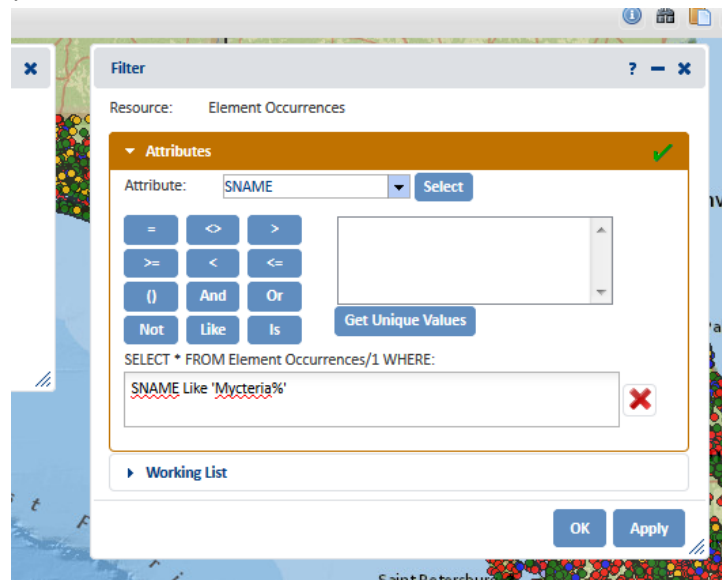
3. Next you need to check that the data you want to enter **has not already been entered** into Biotics.

 - a. Log into Biotics 5 at <https://bioticsfl.natureserve.org/> if you haven't yet done so
 - b. Click **View Map** under **Map**.
 - c. Click the **Map Resources** link in the upper left.
 - d. Filter for just the species you want to map as follows
 - i. Hover your cursor on Element Occurrences and click the "Play" button that



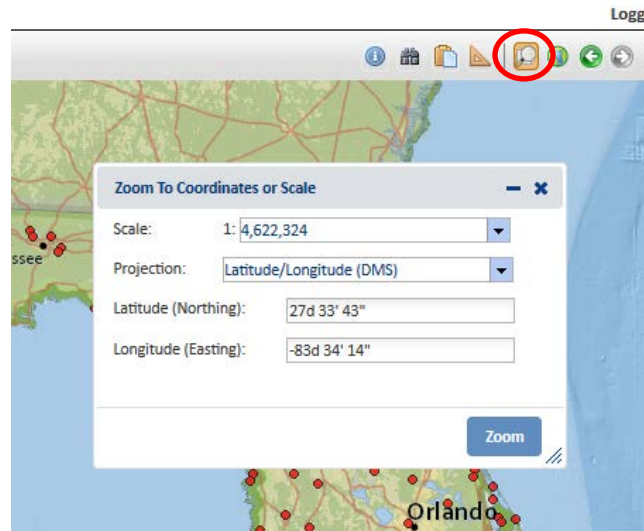
appears to the right :

- ii. Click Filter
- iii. Enter a filter in the filter dialog box similar to below to display just the EOs for your element:



Common filters would be SNAME='Genus species' or, when not sure of part of the spelling or to get all of the species in a genus, SNAME Like 'Genus spec%', with the % acting as a wild card.

- iv. Click OK. Only the EOs for your element should be displayed. If no points are displayed on the map reopen the filter dialog and check your spelling, etc.
- v. Repeat the steps above for the Source Features layer
- e. Zoom into the area of the new observation you want to enter by holding the Shift key and drawing a box on the map. If you are going to enter a point from coordinates you may want to zoom to the coordinates where your point will be mapped. You can use the Zoom to Coordinates or Scale tool to do this:



- f. After zooming to the location of your new observation, click the  Identify Tool and then click on each of the existing source features in the vicinity of your observation and examine the tabular data (click the green SF ID # link at the top of the window to open the full tabular record) to ensure that the data you are trying to enter has not already been recorded in Biotics. It is fine to enter more current or historical observations of an occurrence; you just want to avoid entering duplicative observations made by the same person on the same date.
4. After determining that your data is suitable for mapping AND is not already mapped you need to **determine if it should be mapped as a new source feature** (this is the case 99% of the time) or added as a new visit to an existing source feature. There are only two circumstances in which you would add a visit to a source feature:
- a. When you are sure that you are revisiting the entire area previously mapped (no larger and no smaller). This is only likely to occur for visits to established plots, single plants, cavity trees, etc.
 - b. When an entire source feature has been resurveyed during the appropriate phenological time and the element hasn't been found (in this case the source feature rank field should be set to "Failed to Find").

If your data meets one of the above criteria you should not edit anything on the map. Just open the tabular record for the source feature, by clicking on the **SF ID** at the top of the **Details:** popup window produced by the Identify tool, and add a new Visit record (date, observer, and visit data), ensure that all other source feature and EO fields are up-to-date (as detailed below) and reflect the data you added and pass the record along for QC (as detailed below).

5. You are now ready to **create a source feature**.

- a. On the Biotics Map page click **Map Resources** link in the upper left.
- b. Hover your cursor on Source Features and click the  "Play" button that appears to the right.
- c. Click Create Source Feature.
- d. A box will pop up that will allow you to search for the species that you want to map. Enter the scientific or common name, making sure to check off the appropriate circle for Scientific Name or Common Name, and click the blue search button.
- e. In the search results click on the **Scientific Name** of the species you want to map or anywhere in its line except for the green **Element ID** on the left.
- f. Select the Location Use Class (certain animals only) for your occurrence as described in the EO Specs
- g. For the [Conceptual Feature Type](#), if you observed an area to be occupied by the element that is:
 - i. Less than **9m** in length and width then select Point
 - ii. Greater than **9m** in length but not width then select Line
 - iii. For all other features select Polygon

NOTE: Separation distance in the EO Specs has nothing to do with how you decide to represent your source feature. It just determines when different source features should be part of a single EO.

- h. For [Locational Uncertainty](#) if you hover your cursor over the icons for the various uncertainty types, the cursor will appear with a question mark next to it and you can click to get more detailed information but for most things you map you'll do one of the following:
 - i. For conceptual points collected with a Trimble data logger select [Negligible](#)
 - ii. For conceptual points collected with a different GPS select [Estimated](#) and >6.25, <25 Meters
 - iii. For groupings of points to be represented by a polygon the selection depends on how tightly you are drawing the polygon to the points and how homogenously the area is occupied by the species. If the polygon is drawn very tight to field points and is entirely occupied by the species then you can select Negligible, if not, select [Delimited](#).
- i. Click the blue Next button

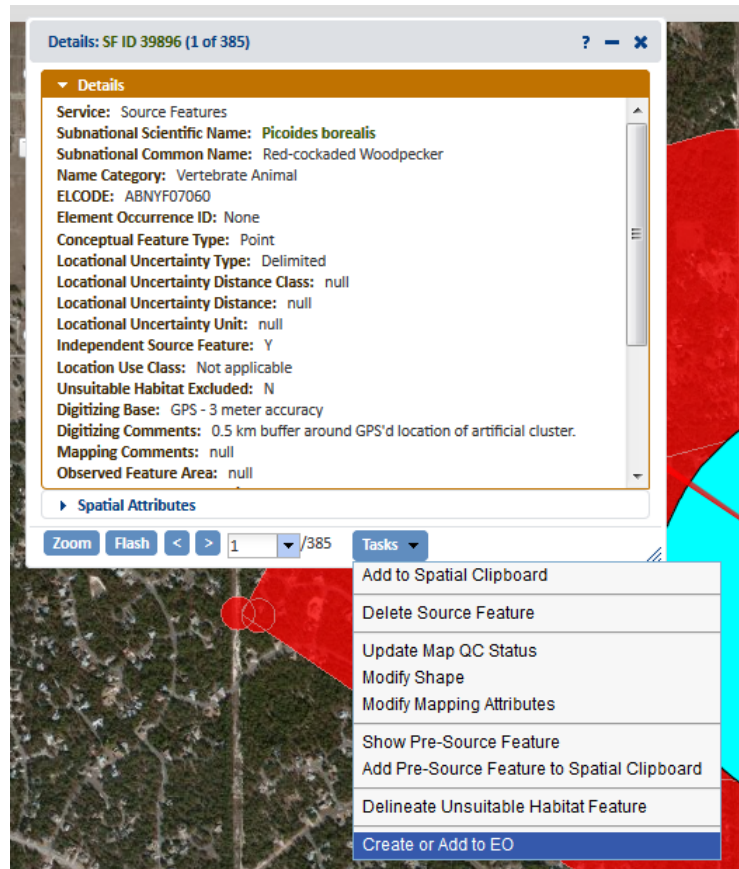
- j. The next window gives you the opportunity to select what source features you want to have displayed while you are mapping. For plants, or animals with the only Location Use Class choice being Not applicable, select the option to Show only Source Features for [your species] (first option). For animals with Location Use Class choices, select the option to Show only Source Features for the particular Location Use Class (second option).
- k. Click the blue Next button.
- l. This is when you actually create the shape for your source feature. How you do so depends on what type of data you are entering:
 - i. If you want to draw a point or polygon in Biotics:
 1. Zoom to the correct location and in to the 1:1,128 scale.
 2. Draw the shape on the map and double click to complete.
 3. Click the blue Next button.
 - ii. If you want to map a point using coordinates
 1. Zoom to the correct location and in to the 1:1,128 scale.
 2. Click the  icon in the middle of the Draw/Edit toolbar.
 3. In the Source drop-down box select Coordinates.
 4. Enter your coordinates and check that the location shown on the map is correct. (Note: After the application zooms you to the correct lat/long that you just entered do not pan or zoom before you hit next or it will move your mapped location).
 5. Click the blue Next button.
 - iii. If you want to copy a shape from another layer (such as a shapefile that you imported or a Managed Area boundary):
 1. Zoom to the correct location and in to the 1:1,128 scale.
 2. Click the  icon in the middle of the Draw/Edit toolbar.
 3. In the Resource drop-down box select the name of the layer that you'd like to copy a shape from.
 4. Click the blue Select from Resource button.
 5. Drag a box on the map on top of the feature that you'd like to use to create your source feature (IF YOU JUST CLICK THE MAP NOTHING WILL BE SELECTED).
 6. A Details box will pop up with the details of the feature you have selected. Confirm that this is the correct feature and close this box.
 7. Click the blue Next button.
- m. For Digitizing Base select one of the GPS values if you entered a point location using GPS collected coordinates. If you drew a point, line, or polygon on the map select the ESRI imagery value appropriate for the scale that you created the feature. Unless you are mapping a very large source feature you should have mapped it at 1:1,128 and so you should select ESRI imagery 1:1,128. If you copy a shape (a managed areas for example),

do not put a value in the dropdown but instead note in Mapping Comments how you created the source feature.

- n. Only check the [Unsuitable Habitat Excluded From Source Feature](#) box if you excluded unsuitable habitat when you digitized the source feature OR if you created an [unsuitable habitat feature](#) for the element that overlaps with the source feature. .
- o. Explain any anomalies in the digitizing process in the Digitizing Comments field. (e.g. "This Source Feature was created using a combination of GPS data and a 1:24,000 quad.")
- p. Explain how /why a feature is mapped in particular way in the Mapping Comments field (e.g. "Polygon drawn around 57 field points to cover homogenously occupied area").
THIS FIELD IS REQUIRED IF YOU ARE MAPPING A LINE OR POLYGON.
- q. Enter an estimate of the observed area if at all possible. Representation accuracy for source features will be automatically calculated periodically based on the "Guidelines for Determining Representation Accuracy (in dichotomous key form)". Entering the observed area will ensure the most accurate calculation of Representation Accuracy.
- r. Representation Accuracy will be automatically calculated for source features so it is not required.
- s. Click the blue Finish button. YOU ARE DONE CREATING THE SOURCE FEATURE SHAPE. This is a good place to take a break.
- t. If you will be creating multiple source features for the same element in the same area you may wish to repeat step 5 and create them now before proceeding to step 6.

6. Now you need to **associate your new Source Feature(s) with an EO.**

- a. When you create a Source Feature a Details window will pop up with the details. You can also display this Details box by clicking on the Source Feature with the ID tool . Click the Tasks drop-down at the bottom of this window and select Create or Add to EO:



- The next window gives you the opportunity to select which source features you want to have displayed while you are mapping. For plants, or animals with the only Location Use Class choice being Not applicable, select the option to Show only Source Features for your species (first option). For other animals, select the option to Show only Source Features for the particular Location Use Class (second option).
- Click the blue Next button.
- Consider the source feature you are evaluating in relation to the EO Specifications if there are EO Specifications for the element or its group. If you click on the **EO Specs for Element** link, the specs will open in a new tab. Select either the Default Suitable or Unsuitable Habitat Separation Distance or enter a Custom distance as appropriate. For plants click on the **Use the Habitat-based Plant Element Occurrence Delimitation Guidance (2004)** link. In most cases plants will have a 1km separation distance. Select or enter a Separation Distance.
- Click the blue Next button. All of the Source features within the separation distance of the Source Feature you created will be evaluated, including any Source Features already attached to EOs
- The Source Features to Include in Proposed EO window will allow you to examine all of the Source Features that are within the separation distance that you specified from the Source Feature that you started with.

- i. If the number directly to the right of the blue View All button is a “1” then only the single source feature will be added to an EO. Click the blue Next button to proceed.
- ii. If the number after the View All button is anything other than “1” then your new Source Feature is going to be incorporated into an existing EO. You can click the View All button to click through each Source Feature that will be included in the new EO.
- iii. To disregard separation distance (usually inadvisable unless there is a separation barrier between source features) and **remove a Source Feature** from the EO click the blue View button next to the green square. Click the blue “>” button at the bottom of the Details window until the Source Feature you want to remove is selected and then select Remove from Include List from the Task drop-down. Close the Details window when you are done removing.
- iv. To disregard separation distance (usually inadvisable) and **add a Source Feature** from the EO click the blue View button next to the red square. Click the blue “>” button at the bottom of the Details window until the Source Feature you want to remove is selected and then select Remove from Include List from the Task drop-down. Close the Details window when you are done adding.
- v. When you are happy with the Source Features to be included in the final EO, click the blue Next button.
- vi. The Choose EO for Adding Independent Source Features window lets you decide whether the Source Features that are within separation distance of one another and not currently attached to an EO (the Independent Source Features) should be added to an existing EO or used to create a new EO. **ALMOST ALWAYS YOU’LL WANT TO ADD THEM TO AN EXISTING EO.** To do so click on the yellow circle representing the Independent Source Features and drag it to the row for the EO you want to add them to.
- vii. The window that you see next will depend on whether or not multiple Source Features within separation distance are attached to separate EOs or not.
 1. If you have multiple Source Features within separation distance attached to separate EOs you will see the Modify EO Relationships window. The key here is to **NEVER CREATE SUB-EOs. If you ever see EO IDs indented, as shown below, CLICK CANCEL and proceed to the next step.**

Modify EO Relationships ? - X

Drag the EOs into the desired Parent / Sub-EO groups.

If an EO should not be part of a Parent / Sub-EO relationship, do not nest it within another EO

EO ID	EO Num	Last Observation Date	Rep Accuracy	EO Rank	Separation Comments	Actions
9922	6	1-19	Low	NULL		▶
18234	40					
18375	40					
21682	40					
20587	2					
13804	10	09-19	Low	NULL		▶
20809	36	1985-11	Low	NULL		▶
2167	7	2005-08-03	High	NULL		▶
20697	16	2013-10-24	High	NULL		▶
17093	26	2005-08-05	High	NULL		▶
2363	23	1985-11	High	NULL		▶
20238	21	1985-11	High	NULL		▶

Group all EOs without Subs to EO with new SFs

Cancel Previous Next

MUST BE MERGED!! CLICK CANCEL!

2. If you don't have multiple Source Features within separation distance that are attached to other EOs, things are simpler. You will just see the Separation Distance Comments window. Enter comments if needed and click the blue Finish button and proceed to entering your reference information.

g. MERGING EOs

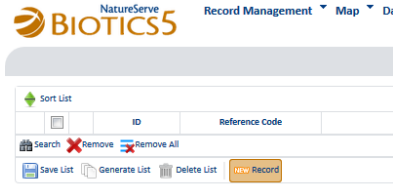
- i. Merging EO is necessary when multiple Source Features within separation distance are attached to separate EOs. All data currently stored in the EOs that will be merged must be moved to the source features, all the old EOs except one must be deleted, and then all the old source features can be added to the remaining EO. When you have decided which EO to keep, run [this query](#) on the other ones that will be deleted and save the results in a QC folder in your staff folder clearly labeled by species and the EO Number of the one that will remain. This will allow the QCer to make sure that all of the data that were in the deleted EOs was transferred properly. Do the same with [this query](#) for references. (For a brief introduction to how to use a query in Query Builder, see [here](#).) Do this as follows:

1. Right-click Element Occurrences on the Record Management drop-down menu at the top of any Biotics 5 page and then click Open Link in New Tab
2. Click the Search (binoculars) icon
3. Click on Code/ID to expand this section of the window
4. In the EO ID box enter the EO ID of an EO you want to merge
5. Click the blue Search button
6. In the Search Results right-click the EO ID number (green) and select Open Link in New Tab
7. Open the tab for the EO
8. Scroll down to the Source Features section of the EO record
9. Right-click each of the green Source Feature ID links and select Open Link in New Tab. You should now have the EO record open in one tab and each of the Source Feature records open in its own tab.
10. Scroll back to the top of the EO record
11. The following information need to be copied from the EO record to the correct Source Feature (SF) Record:
 - a. EO Directions to SF Detailed Directions
 - b. EO Data to Visits (**NOTE:** A visit record should be created for each unique date in the EO data as well as the Survey Date, First Observation Date, and Last Observation Date. For EOs with multiple Source Features it is often tricky to figure out which portion of the EO data refers to which Source Feature but just do the best you can. If it is unclear what was observed on a particular date just put “species present” in the Visit Notes. If you can’t figure out who observed a Source Feature on a particular date just put “unknown” in the Visited By field.).
 - c. EO General Description to SF Description
 - d. EO General Comments and any other important information in other fields to SF Comments
 - e. EO Reference Code(s) to SF References
 - f. Select the appropriate value for the Source Feature Rank field
12. Repeat the preceding steps, starting with the EO ID search, for each of the EOs you need to merge INCLUDING the EO that will be retained.
13. Once all important information has been copied from the EOs to the Source Features you can **delete the extra EOs, remembering NOT to delete the one you will merge everything into.**
 - a. To keep track of WHY you are deleting the EO(s):
 - i. Go to the EO data field and at the end of the existing entry put the following:
“Deleted by [insert your user name here] because [insert reason here].”

For example: *"Deleted by fdp because EO was merged with EO_ID 1234."*

DO NOT include a deletion date because Biotics will store the date that you delete things in the deleted schema automatically.

- ii. Then proceed with deleting the EO
 - b. On the Biotics Map page click the binoculars icon to search for the EO you want to delete
 - c. Select Element Occurrences from the Resource drop down box
 - d. Select EO_ID from the Attribute drop down box
 - e. Click the blue Select button
 - f. Click the blue "=" button
 - g. After the "=" type the EO_ID of an EO you'd like to delete
 - h. Click the blue Search button
 - i. Select Delete EO from the Tasks drop down menu
 - j. Click Yes
 - k. Click Retain Source Features. The EO will be deleted but the attached Source Features will be kept.
7. If you had to merge EOs, you can now **repeat step 6** (Now you need to associate your new Source Feature(s) with an EO.) to add all of the Source Features that you just separated from other EOs to a single EO. After this, you will move on to working with the tabular data.
8. Entering a **Reference**. A Biotics reference is used to record information describing a data source and its location. Each EO and Source Feature must have at least one reference.
 - a. From any Biotics screen select Record Management at the top of the screen and click References
 - b. We do not want duplicate references to be entered for the same material so if there is any chance the source material you want to refer to has already been entered as a reference please search for it as follows:
 - i. Click the binoculars icon 
 - ii. Enter information related to your new reference material (NOTE: the search is additive so results will only be shown if the match ALL of the terms you are searching for)
 - iii. Click the blue Search button
 - c. Once you have determined that your reference has not already been entered you should create a new reference record
 - i. Click the NEW Record button



- ii. Enter a 12-digit Reference Code in the Ref Code field following the format specified in the Biotics Help: <http://help.natureserve.org/biotics/#cshid=2926>

If you are entering a reference code that begins with a “P” please read and understand Appendix 1 to this document. It explains “PND...” reference codes.

- iii. Also complete the following fields following the Biotics Help formats:
 1. Full Citation
 2. Short Citation Author
 3. Short Citation Year
- iv. The **Shelf Note** is critical. This field specifies where the reference material is stored. For books or paper reports not available in digital format this location could be the FNAI library or a person’s office, etc. For most references, the source material will be digital or scan-able (i.e., scan all source documents possible such as field report forms, pages from articles or reports, pages from field notebooks), and should be stored in K:\Science_Information\EORepSourceMaterial in a folder with the Reference Code as the name. Gainesville staff need to make sure that all of their reference material makes it to this folder on the K drive and is appropriately filed in a folder with the Reference Code as the name. The Shelf Note for digital information should be the path to the folder containing the data.
- v. All other Reference fields are optional
- vi. You have now created a reference. You may wish to note the code to make it easier to add to Source Features and EOs

9. You can now proceed to entering the tabular data for your Source Feature(s)

- a. From any Biotics screen select Record Management at the top of the screen and click Source Features or use the Identify tool to open up the Details window from the map and click the SF ID at the top.
- b. Populate the required fields (those NOT shaded in gray) in the table below. If you want to populate other fields you should refer to the Biotics help to determine the content and format of suitable entries. When entering data please try to enter each piece of information in only the one most appropriate field.

SOURCE FEATURE FIELD DEFINITIONS (all not shaded ARE required)

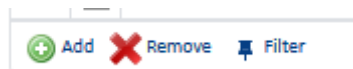
Field name	Contents	Format
Source Feature Descriptor	Descriptive name mainly used to help the person doing the mapping keep track of different features	<u>Suggested:</u> Last name, First name year_consecutive id number (unique to that survey)
Source Feature Locator	A descriptive location/directions, especially local names like “Post Office Bay”, formatted as County, managed area and/or specific location within the Managed Area.	
Mapping Comments	Required only for polygons and lines, NOT required for POINT source features. Mapping Comments are used to explain how /why a feature is mapped in particular way (i.e. “Polygon drawn around 57 field points to cover homogenously occupied area”). When a source polygon is drawn to provide a spatial summary of multiple source features it must be flagged in this field using the phrase “multi-source summary polygon”. This should only be used for ANIMALS.	none
Observed Feature Area	Estimate if at all possible to ensure accurate calculations of representation accuracy.	
Observed Feature Area Units	To ensure accurate calculations of representation accuracy	
Observed Feature Length	Estimate if possible only for line source features to ensure accurate calculation of representation accuracy	
Observed Feature Length Units	Only for line source features to ensure accurate calculation of representation accuracy	
Visited By	Person(s) who observed the element at this location on this date	Last, First, First Last...and First Last
Visit Date	Date of the observation. Should be a SINGLE date if at all possible. Repeated observations of a source feature can be bulk loaded so don’t enter multiple visit dates in a single record	YYYY-MM-DD or YYYY-MM or just YYYY, for a date range any of the above formats may be separated using a double dash with a space on either side, i.e. 1998 -- 2000-12-17

Visit Data	“Information describing the observation (represented as the Source Feature) made by the person(s), entered in the associated Observer field.” For multi-source EOs this field will be more location specific than the EO_Data field but for single source EOs the two fields should be identical. Do not include dates, reference codes, personal names, or locations as these data are recorded in other fields.	none
Source Feature Rank	Extant / Failed to Find / Extirpated In order to record a source feature as “Failed to Find” or “Extirpated” the entire procedural buffer must be surveyed.	
Source Feature Description	“General (capsule) description or word picture of the area where the Element Occurrence (EO) is located (i.e., the physical setting/context surrounding the EO), including a list of adjacent communities. Also, when available, information on surrounding land use should be included.” “This field should be a short descriptive field (suitable for export to the general public).” “This General Description field should be used to describe the general landscape surrounding the EO. The Landscape Context field should be used to describe intactness, use of, and threats to, the surrounding landscape as they affect EO viability. Element-specific data should not be entered in this field, but should be recorded in the Visit field Dates and reference codes may be included, particularly if the description includes information that may change, or has changed, over a short time period (i.e. burn frequency details, storm damage, etc.) or if multiple descriptions for multiple observations need to be entered.	
Detailed Directions	Specific directions that will not fit in the locator field and can not easily be obtained through Google Maps or a similar service (e.g. Approximately 100 m past the gate, turn west onto a small path and follow this for approximately 50 m...).	

Comments	General comments regarding the source feature not suitable for inclusion in another field	
References	Reference codes for each reference associated with this source feature. Reference codes are checked against references in the database, so you must enter and save any new references before adding them here.	

10. After entering the data for each of the Source Features attached to an EO you should complete or update the EO fields:

- From any Biotics screen select Record Management at the top of the screen and click Element Occurrences
- Populate the required fields (the ones NOT shaded in gray) in the table below. If you want to populate other fields you should refer to the Biotics help to determine the content and format of suitable entries. When entering data please try to enter each piece of information in only the one most appropriate field.
- There are some fields, such as EO References, for which multiple records can be entered for a single EO. These fields are indicated by the presence of the Add, Remove, and Filter buttons:



Enter data using these fields as follows:

- Click the Add button
 - For fields like the EO Reference you will need to enter search terms to find a previously entered reference and then select the reference you want to add from the search results
 - For fields like the EO Specimen clicking the Add button will bring up a yellow Details box. Enter the information you'd like to add and then **BE SURE TO CLOSE THE YELLOW DETAILS BOX BEFORE SAVING.**
 - To add another record click the Add button again
 - To remove a record click the check box next to record you'd like to remove and then click the Remove button

EO FIELD DEFINITIONS (all not shaded ARE required)

Field name	Contents	Format
Identification Confirmed	N - No; Identification of the Element has not been confirmed; other, different reports of an occurrence of this Element have been determined to be wrong**. Y - Yes; Identification of the Element has been confirmed.	none

	? - Questionable; Identification has been checked but is uncertain or disputed. (null) - Identification of the Element has not been checked (as is the case with many secondary-source reports or reports based on incomplete specimens). **If you select “N” or “?” here you should consider that it should not be an EO OR consider keeping the QC status as incomplete so that the information does not go out to public.	
Data Sensitive EO	Indicates that locational information of this Element Occurrence (EO) is sensitive and should be restricted from unsecured use. ALL FNAI EO information is only given out for valid uses. Read Appendix 2: Data Sensitivity before designating any EO data sensitive.	none
Reason EO Data Sensitive (Required only when EO is declared to be data sensitive)	Explanation of why locational information of this Element Occurrence (EO) is sensitive and restricted. Sensitivity of the entire element is not sufficient reason to designate an EO as sensitive since FNAI already designates sensitivity at the element level for sensitive species. Suitable reasons may include: • Cases where information on an occurrence from a source is considered proprietary until such time as the data are formally published. • Cases where an element is generally not susceptible to collection but the location of this particular location may be. For more information see the FNAI Data Sensitive Declaration Policy	none
Directions	Should not duplicate information that can easily be obtained through Google Maps or a similar service.	
Representation Accuracy Value	Very high / High / Medium / Low / Very Low / Unknown Accuracy varies on the basis of area observed to be occupied by the Element relative to the area contained within the footprint of the EO Rep. Differences in these two values result from incorporation of additional area within the EO boundary to incorporate associated locational uncertainty. Representation Accuracy (RA) provides a common index for the consistent comparison of EO Reps, thus helping to ensure that aggregated data are correctly analyzed and interpreted.	N/A

	RA assignment MUST be based on the "Representation Accuracy Dichotomous Key" which is APPENDIX 3 at the bottom of this document.	
Confidence Extent	Indicates whether the full extent of the Element is known (i.e., has been determined through field survey) at that location and, therefore, is represented by the Element Occurrence (EO). Domain values for Confidence Extent are Y - Confident full extent of EO is known N - Confident full extent of EO is NOT known ? - Uncertain whether full extent of EO is known (null) - Not assessed	N/A
Survey Date	Date of the last (i.e., the most recent) field survey for the Element Occurrence (EO), regardless of whether it was found during the visit. Data entry details: The following formats may be used for entering the survey date: If the EO was found during the survey, then the Last Observation Date field should also be updated.	yyyy-mm-dd / yyyy-mm / yyyy-aaaaa (e.g. 1965-Sprg,1979-80Wtr, 1930-Pre). for a date range any of the above formats may be separated using a double dash with a space on either side, i.e. 1998 -- 2000-12-17
First Observation Date	Date that the Element Occurrence (EO) was first reported at the site.	yyyy-mm-dd / yyyy-mm / yyyy-aaaaa (e.g. 1965-Sprg,1979-80Wtr, 1930-Pre) . for a date range any of the above formats may be separated using a double dash with a space on either side, i.e. 1998 -- 2000-12-17
Last Observation Date	Date that the Element Occurrence (EO) was last observed to be extant at the site. All entries MUST begin with a four digit year. Note that the last observation date is not necessarily the date the site was last visited (i.e., the survey date) or the date on which the occurrence was assigned an EO rank (i.e., the EO rank date).	yyyy-mm-dd / yyyy-mm / yyyy-aaaaa (e.g. 1965-Sprg,1979-80Wtr, 1930-Pre) . for a date range any of the above formats may be separated using a double dash with a space on

		either side, i.e. 1998 -- 2000-12-17
EO Data	For species Elements, data collected on the biology of this Element Occurrence (EO), including the number of individuals, vigor, peculiar characteristics, and other details specific to the rare species being observed; information on the habitat, soils, associated species, etc. should go in the General Description field “For community Elements, summary text (i.e., capsule) description of the vegetation of the EO, including structure (strata) and composition (dominant/characteristic species), heterogeneity, successional stage/dynamics, any unique aspects of the community or additional noteworthy species (including animals).” <u>“This field should be a short descriptive field (suitable for export to the general public).”</u> Generally this should be less than 250 characters. For EOs with more than one SF, this field should be a summary of all the data in the SF visit records. To get a list of all visits to all SFs of an EO, run this query. “The EO Data field should not include information related to EO ranking, threats, environment, landscape setting, phenology, or directions since these are stored in other fields.” Items to consider including include number of sources, number/range of years population has been visited for, etc. Information on directions should also be excluded. Dates are not required since these are stored with the source feature and in the first obs, last obs, and survey date fields. Reference codes may also be included however, as these are unlikely to do anything but confuse the general public and it is now possible to store a reference for each source feature, they are not required.	none
Basic EO Rank	http://help.natureserve.org/biotics/#Record_Management/Element_Occurrence/EO_Basic_EO_Rank.htm?Highlight=EO%20rank	
EO Rank Date	Date of the field survey on which the Element Occurrence (EO) rank is based.	
General Description	“General (capsule) description or word picture of the area where the Element Occurrence (EO) is located (i.e.,	

	the physical setting/context surrounding the EO), including a list of adjacent communities. Also, when available, information on surrounding land use should be included.” <u>“This field should be a short descriptive field (suitable for export to the general public).”</u> “This General Description field should be used to describe the general landscape surrounding the EO. The Landscape Context field should be used to describe intactness, use of, and threats to, the surrounding landscape as they affect EO viability. Element-specific data should not be entered in this field, but should be recorded in the EO Data field and, for communities, in fields on the COMPOSITION tab instead.” Dates and reference codes may be included, particularly if the description includes information that may change, or has changed, over a short time period (i.e. burn frequency details, storm damage, etc.).	
Reference	All EOs must have at least one reference and one of the references must be designated as the “Primary Reference”. Generally the primary reference should be a data file, publication, or other physical or digital reference and NOT a person (PND) PND references are used to list a particular person (NOT a particular communication with person) as a reference and to store their current contact information. Please help to keep contact information in PND references up to date AND DO NOT create duplicate PND references for the same person. See HERE for more information.	
Version Author Name	Name of the person principally responsible for preparing this version of the Element Occurrence (EO) record. What constitutes a new version of an EO is subjective but generally a new version is created when a substantive revision occurs that incorporates new data.	Lastname, F. M.
Version Date	Date of the current version of this Element Occurrence (EO) record (i.e., the date that this record was first completed, or since then, comprehensively revised).	

11. The final step in EO data Entry is preparing your EO for QC:

- a. **The person who enters data** is responsible for making sure it gets QC'd.
 - i. After you map an EO or make a substantial modification to the **shape**:
 - 1. In the map view identify on the EO
 - 2. Click the blue Task menu at the bottom of the window
 - 3. Select "Update QC Status"
 - 4. Change the Map QC Status to Incomplete
 - ii. After you map an EO or make a substantial modification to the **table data**:
 - 1. Scroll to the Version/QC section of the EO record
 - 2. Click the  **Update Data QC Status** button
 - 3. Change the Data QC Status field to Incomplete
 - iii. In the QC Comments field (same field is edited in the map or table data) make sure you **list the changes** you made to the EO including how many source features were added or removed, any EOs that were merged with this EO AND indicate the location of the source material.

For example: *"The following EO numbers were incorporated into this EO in 2014 by Amy Jenkins: 19. Three new Source Features were also added to this EO based on the following Source Data:*

K:\Projects\USFS\2013_USFS\EO_processing\EO_Processing.gdb\Biotics5_point_USFS2011_2013amj"

Note: If you only edited some source features of an existing EO with many source features you may want to mark the existing source features as QC'd and the new/edited ones as incomplete to indicate which need to be QC'd.

- iv. Add the EO to your QC working list:
 - 1. Everyone should have a QC working list where you keep a list of EOs that you have entered that haven't yet been QC'd. If you don't have one you can create one. Contact Frank or Dave if you need help.
 - 2. The most reliable way to add EOs to your working list (assuming you have remembered to fill out the version author field...) is to select them with a query as follows:
 - a. From any Biotics 5 page, hover over the Queries and Reports menu at the top of the page and select Query Builder (you may want to right-click on Query Builder and select Open Link in New Tab)
 - b. Paste the following query into the Query box and insert your last name where indicated. It will find any EOs that you are version author on and that either the map or data QC is not passed. It will not find them if you spelled your name incorrectly:

```

SELECT EO.EO_ID
FROM element_subnational est, EO, SHAPE, ELEMENT_GLOBAL,
element_national
WHERE
est.ELEMENT_NATIONAL_ID=element_national.element_nation
al_id
and
element_national.element_global_id=element_global.element_
global_id and est.element_subnational_id =
EO.ELEMENT_SUBNATIONAL_ID
and SHAPE.SHAPE_ID=EO.SHAPE_ID
and EO.VERSION_AUTHOR_NAME like '%YOUR
LASTNAMEHERE%'
and (EO.D_DATA_QC_STATUS_ID is null or
EO.D_DATA_QC_STATUS_ID = 1 OR EO.D_DATA_QC_STATUS_ID
= 3 or SHAPE.MAP_QC_STATUS = 'F' or SHAPE.MAP_QC_STATUS
= 'I' or SHAPE.MAP_QC_STATUS IS NULL)

```

- c. Select Html as the Query Output
 - d. Click the Run Query button
 - e. Under Status, click “**Open the html query result in a new browser window.**” A list of EO IDs will open in a new tab. These can be copied and used to create or update a QC working list. (see http://help.natureserve.org/biotics/#Record_Management/Working_Lists/Create_a_Working_List.htm#QueryBuilder)
- v. Notify another scientist (Gainesville staff should have all of their work QC’d by Tallahassee staff for the time being) that they need to QC your EO(s). If you want to check on progress of the QC of your EOs, [this query](#) will give various QC-related details for any of your un-QCed EOs.
- b. **Gainesville staff need to e-mail the EO Rep source material to Tallahassee** to facilitate QC and need to make sure someone files it in K:\Science_Information\EORepSourceMaterial under the appropriate reference code
 - c. **The person QC’ing** should examine the mapping of all new or edited source features and check to make sure they were correctly mapped with a correct feature type and locational uncertainty in the location indicated by the source material. They should also check to make sure that all of the required EO and source feature fields are filled out correctly. Fields entries should be concise. Fields should not contain any information that is stored in another field or which can be queried from the database.

- d. Once these QC checks have been passed the EO should be **removed from the QC working list**, although if the EO is QCed properly, it will not show up in the query used to create or update your QC working list.

Appendix 1: PND References

The Biotics “P” reference type definition describes its use for the “personal communication” sort of reference (conversation, memo, interview, email, etc.). It calls for the full citation for such a reference to contain no more than a job title, organization, and city for the person. Full addresses, phone numbers, email addresses etc., if available, should be contained in a “Contact” table record related to the reference.

Prior to the advent of Biotics, however, the “P” reference type was also available for use as a sort of generic reference to a person, and information such as addresses and phone numbers were legitimately contained within the full citation. FNAI did this routinely going all the way back to the 80’s and 90’s. For a general reference to a person, therefore, and not any specific time-oriented communication from the person, the “ND” (i.e. no date) identifier was inserted into the reference code following the P reference type code. Such references were (and still are) the “best source” reference for many of our EOs.

At FNAI, within Biotics we will continue to recognize the former “PND...” use of reference records to contain aspects of contact information. This need not prevent anyone from using the full capacity of Biotics’ design, however, so feel free to enter Contact table information as you wish, and to use such records to link to EOs and other references.

An important note of caution here is that by using “PND”-style references to contain contact information, it becomes incumbent upon us to keep the contact information up to date. Thus if you become aware of a change in position, organization, phone, email address, etc. for someone we identify with “PND”, please take it upon yourself to update their “PND” entry. To the best of our ability, then, a “PND” record then should always contain the most recent contact information for a person. If you do not want to lose the historical contact information, put it into the Comments field on the “Version” tab of the Reference record. A time-oriented personal communication reference (e.g. P02WIL...), if it contains contact information, does NOT need to be updated, as contact information at the time of the reference may be an important feature of the record.

Appendix 2: Data Sensitivity

FNAI Data Sensitive Declaration Policy

Revised 02 August 2011

FNAI tracked elements data can be designated as “sensitive” at the element or the occurrence level. Designating data as sensitive is a tradeoff for FNAI. While it may help to protect certain elements and encourage data submission from some sources, it also complicates our relationship with our data users and restricts the use of our data to help protect elements. Decisions to designate an element or EO should not be made lightly and the tradeoff discussed above should be explained to any data sources who request that data for non-sensitive elements be designated sensitive.

Element Data Sensitivity

“... indicates that information on all occurrences of this Element is sensitive and should not be distributed without permission.”

Examples of elements which warrant this designation include:

- Certain orchids or butterflies subject to collection
- Caves, which are inherently sensitive
- Shell mounds, which are archeological sites subject to collection

Decisions to designate an element as data sensitive should include the lead for that element group (Amy J. / Dan H.) and the reason for designating an element as data sensitive should be recorded in the “EO Tracking Comments” field adjacent to the element level data sensitivity checkbox.

EO Data Sensitivity

“... indicates that locational information of this Element Occurrence (EO) is sensitive and should be restricted from unsecured use.”

EOs should not be designated as sensitive just because the element is data sensitive. In certain cases (such as an occurrence on private property), it may be appropriate to designate an EO as data sensitive even when the element is already sensitive just to ensure that the occurrence will remain sensitive if the element level designation is removed in the future. In such a case, as with all EO data sensitive designation:

It is MANDATORY that the Reason EO Data Sensitive field be populated with a descriptive reason. It is also helpful to put more in this field than “Source requested”, or “This species is rare in Bay County”, or similar, because it helps the data distribution staff make judgments about when they should or should not identify an element.

Examples of occurrences which may warrant this designation include:

- Cases where information on an occurrence from a source is considered proprietary until such time as the data are formally published
- Cases where an element is generally not susceptible to collection but the location of this particular location may be

EOs for which distribution is “Prohibited by source”

This is a subset of EO sensitivity which indicates that certain data must never be distributed to ANYONE under ANY circumstances.

Designation is indicated by including the phrase “DISTRIBUTION PROHIBITED BY SOURCE” in the Reason EO Data Sensitive Field in Tracker.

Examples of occurrences which may warrant this designation include:

- Information submitted by an employee of a private company who feels that if the information was made public it might put their job in jeopardy
- Information submitted by a land manager on the condition that distribution be completely prohibited.

According to Gary Knight:

“I personally think we should make an effort to limit our use of the super sensitive designation. If we aren’t providing these data to our partners (land managers and regulators), we are severely limiting our ability to influence the conservation of these elements. We do want to ensure we respect the wishes of data sources that request that their information be managed as data sensitive, but we should strive to limit the use of this designation.”

Appendix 3: Representation Accuracy

Guidelines for Determining Representation Accuracy (in dichotomous key form)

1. Locational uncertainty type is **negligible**RA is **very high**
1. Locational uncertainty type is **areal-estimated, areal-delimited, or linear**.....2
 2. Procedural Feature* is 1 hectare (ca. 2.5 acres) or less RA is **high**
 2. Procedural Feature is larger than 1 hectare3
 3. Conceptual feature type is **point**4
 4. Procedural Feature is 50 hectares (ca. 125 acres) or less.....RA is **medium**
 4. Procedural Feature is larger than 50 hectares5
 5. Procedural Feature is 2500 hectares (ca. 6178 acres) or lessRA is **low**
 5. Procedural Feature is larger than 2500 hectares..... RA is **very low**
 3. Conceptual feature type is **line or polygon**6
 6. More than 80% of the Procedural Feature is comprised of the observed area (i.e., less than 20% of the Procedural Feature is comprised of area added for locational uncertainty) or the Procedural Feature is 1 hectare or less..... RA is **high**
 6. 80% or less of the Procedural Feature is comprised of the observed area (i.e., 20% or more of the Procedural Feature is comprised of area added for locational uncertainty) or the observed area is unknown (Procedural Feature greater than 1 hectare).....7
 7. 20% or more of the Procedural Feature is comprised of the observed area (i.e., less than 80% of the Procedural Feature is comprised of area added for locational uncertainty)RA is **medium**
 7. Less than 20% of the Procedural Feature is comprised of the observed area (i.e., 80% or more of the Procedural Feature is comprised of area added for locational uncertainty) or the observed area is unknown8
 8. Procedural Feature is 50 hectares (ca. 125 acres) or lessRA is **medium**
 8. Procedural Feature is larger than 50 hectares.....9
 9. Procedural Feature is 2500 hectares (ca. 6178 acres) or lessRA is **low**
 9. Procedural Feature is larger than 2500 hectares..... RA is **very low**

NatureServe Conservation Status Assessments: Factors for Evaluating Species and Ecosystem Risk -
https://www.natureserve.org/sites/default/files/publications/files/natureserveconservationstatusfactors_apr12_1.pdf

NatureServe Conservation Status Assessments: Methodology for Assigning Ranks -
https://www.natureserve.org/sites/default/files/publications/files/natureserveconservationstatusmethodology_jun12_0.pdf

Element Occurrence Data Standard -
http://downloads.natureserve.org/conservation_tools/element_occurrence_data_standard.pdf