

APPROVED BY THE SECRETARY

BIOLOGICAL INVENTORY AND MONITORING

1. Purpose

- a. To characterize the biological diversity and uniqueness of areas of the State, especially those for which DEP has special responsibilities; and to better implement strategic goals of the Department. Areas to be addressed should initially include:
 - (1) DEP-managed environmental areas: state park system lands, aquatic preserves, research reserves, etc.;
 - (2) reference ecosystems serving as regulatory standards against environmental degradation; and
 - (3) ecological restoration areas, such as mine reclamation areas and exotic removal areas.
- b. To provide a more accurate basis for determining if regulatory and resource management goals are successfully attained, in terms of species survival and distribution.
- c. To make more available biological resources-data to maximize its corporate value, including a directory of databases.
- d. To provide guidelines to standardize methods for inventory or monitoring, and analysis and management of such data.
- e. To provide comprehensive inventory and monitoring of selected species, populations or areas.
- f. To provide standardized data, including classifications for natural communities, in order to identify locations and measure change in biological resources.
- g. To provide for quantification of data as necessary for monitoring.

- h. To promote use of both published and unpublished sources of inventory data.
- i. To provide a directory of expertise among DEP biologists.
- j. To promote development of innovative methods for inventory or monitoring.
- k. To establish relationships with programs outside of DEP for purposes of sharing data and methodology.
- l. To develop a network of consulting experts who can contribute their expertise to DEP's inventory of Florida's biodiversity.
- m. To promote understanding of geosystems, hydrosystems and atmosystems as they interrelate with biological and cultural resources to constitute ecosystems as we know them.

2. Authority

Chapters 253, 258, 259, 369, 370, 373, 378, 403, Florida Statutes.

3. Policy

- a. Data collection for purposes of biological inventory and monitoring through department programs shall be in accordance with the following standards.
 - (1) Inventory information must be accurate, retrievable and as up-to-date as possible.
- b. Inventory should be conducted as phases, preferably in the following order:
 - (1) Level I mapping of all natural community types.
 - (2) Level II compilation of records of selected species as determined by management objectives. Selected species might include, for example: listed species, FNAI special plants and animals, endemic species, indicator species, invasive exotic species, keystone species, harvested species, dominant species, and others. Such records may serve to establish presence/absence, abundance or other important information.

- (3) Level III - Compilation of records listing each species within a selected taxonomic group within a specified area.
 - (4) Level IV - Compilation of records listing each species within selected taxonomic groups within a specified community occurrence.
- c. The following standards shall apply to mapping of natural communities:
- (1) Natural community maps must be digitized in accordance with standards established by the Bureau of Information Systems.
 - (2) Natural community maps should be digitized using resolution provided by aerial photography at a minimum scale of 1:24,000; better resolution may be required to resolve some natural community types.
 - (3) As many sources of useful information as applicable should be used for natural community mapping, in combination with ground-truthing. Potential sources of information for mapping include the following.
 - black and white aerial photos, including stereo pairs, from the Department of Transportation
 - color aerial photos
 - infrared aerial photos
 - 7.5 minute series USGS quadrangles
 - Soil Conservation service soils maps
 - National Wetlands Inventory (USFWS) maps
 - Redi maps
 - NOAA nautical charts
 - satellite imagery
 - Marine Research Institute
 - water management districts
 - Bureau of Information Services, GIS section
 - (4) Certain information about photographs or maps selected for use in natural communities mapping is important for accurate digitizing and use by GIS. Therefore, the information must known.
 - geodetic datum

- projection used
 - accuracy standard
 - scale
- d. If important information about maps or photographs cannot be obtained from their source, then Staff in the Division of State Lands, Bureau of Survey and mapping, and in the Division of Support Services, Bureau of Information Systems, GIS Section can help DEP biologists qualify such maps.
- e. The following standards shall be applied to biological resources data records:
- (1) Inventory data records should be compiled and stored in accordance with "Minimum Information Needed for a Species Occurrence Record" (Attachment I).
 - (2) Reliability of taxonomic identification should be indicated, and records of improbable data should not be compiled into the master database.
 - (3) Database managers should maintain a master database, which only receives data from other, transaction files after such files go through a quality control process.
 - (4) Published and unpublished reports, filed and cited, can serve as sources of inventory data.
 - (5) Accuracy, precision and method of determining positional data must be documented, and will follow standards established by the Spatial Data Standards Work Group.
 - (6) Data documentation should be in accordance with any general standards established for state government.

Responsible Office: Resource Management, Coordinating Task Force on Biological Inventory

Attachment:

Attachment I (Minimum Information for a Species Occurrence Record)

ATTACHMENT I

Minimum Information for a Species Occurrence Record

Primary (essential) information in species occurrence file

- (1) **Minimum taxonomic identification** - name of taxon at level of genus and below: genus, species, subspecies, and appropriate taxa for other categories below genus.
- (2) **Latitude** - latitudinal position, and corresponding accuracy level as specified by DEP standards.
- (3) **Longitude** - longitudinal position, and corresponding accuracy level as specified by DEP standards.
- (4) **Date of record occurrence** - date occurrence is observed in nature, or collection is taken.
- (5) **ID reliability** - indication of certainty of identification, especially by identifier.
- (6) **Source** - person or document from which the occurrence record is identified: observer, publication, report, field notes, etc.
- (7) **Site** - special area within which species occurrence originated: managed area, reference site, other special area.)
- (8) **Natural community type** - natural community type in which specimen was observed or taken. An objective, standardized and well defined classification of Florida's natural communities must be employed.
- (9) **Comments** - provision for additional information about species occurrence.

Secondary (desirable) information in species occurrence file

- (1) **Quantity** - number of specimens of the same species occurrence record, or other quantification such as count made, coverage measured, etc.
- (2) **Time** - time of day species occurrence was observed or taken.
- (3) **Collector** - person who observes specimen in nature or takes collection prior to identification.
- (4) **Field method** - method by which specimen was observed, or by which collection was taken.
- (5) **Transcriber** - converts occurrence to species occurrence record.
- (6) **Transcription date** - date that transcriber converted occurrence to species occurrence record for data entry.
- (7) **County** - county in which latitude, longitude of species occurrence record lies.
- (8) **Section/township/range** - section, township, range in which latitude, longitude of species occurrence record lies.
- (9) **Waterbody** - name of body of water in which latitude, longitude of species occurrence record lies.
- (10) **Project** - name or code for authorized project or other investigation under which species occurrence records were compiled.)

- (11) **General Description** - memo field in which text describes attributes of area within which latitude, longitude of species occurrence record lies.

Ancillary database files recommended for management of biological resources information

In addition to the file of species occurrence records, described above, database files such as the following types may contain information essential for many types of analyses.

- (1) **Taxonomy file** - taxa for categories not used in the species occurrence file (e.g., phyla, orders, families, etc.). By means of a program, one can then query by, or represent higher **taxa** to analyze biodiversity at higher taxonomic levels. Similarly, common names, -legal status (e. g. Endangered, threatened) and other ,taxa below the level of species can be incorporated this file.
- (2) **Voucher file** - voucher specimens which verify records in the species occurrence file.
- (3) **Taxonomic reliability file** - methodology by which the identifier assigned the specimens to taxa in the species occurrence file. This file could note Literature reports, systematic keys, taxonomic characters used, experts consulted, etc.
- (4) **Positional reliability file** - methodology by which the collector, source or transcriber determined latitude and longitude for specimens in the species occurrence file. This file could note maps, standards, equipment, positional data, techniques, etc.
- (5) **Collector's information file** - the collection event and methodology: equipment used, difficulty involved, etc.
- (6) **Natural Communities Occurrence file** - a file of records of natural community occurrences and associated data. Once natural communities are digitized using GIS, information for such records can be generated by the GIS, and tailored to serve specific analyses