# Laboratory Documentation

##### Introduction: Adhere to these documentation requirements in support of the laboratory procedures described in the related DEP SOPs indicated below.

##### Scope and Applicability: Use these SOPs only for the indicated laboratory component operations. These SOPs apply to documentation procedures *not* specified in the NELAC Quality Systems document.

##### general requirements: See FD 1000, section 3, and parts FD 1100 – FD 1300 (DEP-SOP-001/01) for additional, general documentation requirements, where applicable to the laboratory procedures indicated below.

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# Documentation of Biological Laboratory Procedures

##### Document the following items for the indicated SOPs found in LQ 1000 – LQ 7420, Laboratory Quality Control and LT 7300 – LT 7600, Determination of Biological Indices.

##### Record the minimum information summarized in the following SOPs. Refer to the corresponding LQ- or LT-series SOP for any chronological requirements for documentation sequence.

##### Also refer to applicable portions of FD 1000 – FD 1300, FD 3000, FD 5340 and FD 7000 for additional documentation requirements.

##### Use these SOPs only for the indicated laboratory component operations. These SOPs apply to laboratory procedures *not* specified in the NELAC Quality Systems document.

## Documentation of Laboratory Procedures for Determination of Biological Indices

### Required Documentation for Laboratory Procedures For Biorecon Determination (LT 7100) (See BRN2110)

### Required Documentation for Laboratory Procedures for Stream Condition Index (SCI) Determination (LT 7200) (See SCI 2110)

### Required Documentation for Laboratory Procedures for Lake Condition Index (LCI) Determination (LT 7300)

###### Laboratory sample receipt or log-in record

###### Site, sample identification number, WIN station number, sample type, replicate number and date collected

###### Identification of sample collectors

###### Total number of organisms sorted from each selected grid tray aliquot

###### Number of grids, squares and aliquots selected and sorted (e.g., 8 grids out of 24 total sample grids)

###### Date of sorting completion

###### Total number of mounted microscope slides, mounting date for each slide, unique label identification for each slide and identification of mounter(s) for each slide for all sorted samples

###### Total number of individuals for each taxon

###### Name of any organism removed from the sorted sample for reference collection

###### Name of each taxon identified

###### Total number of taxa identified

###### Total number of individual organisms identified

###### Data entry into the Florida Statewide Biological Database (DEP staff only)

###### Method and notes for counting and collapsing taxonomic data

###### Collapsed taxa list

###### Shannon-Weaver Diversity Index score per LT 7300, section 4.1

###### Hulbert Index score per LT 7300, section 4.2

###### LCI metrics scores per LT 7300, section 4.3:

###### LCI Taxa Score component

###### LCI EOT Taxa Score component

###### LCI % EOT Score component

###### LCI % Diptera Score component

###### LCI SWDI Score component

###### LCI HI Score component

###### LCI score

###### Label identification of archived vials of sorted organisms linked to sample identification data required in this section

###### Label identification of archived mounted slides (midges/worms/mites) linked to sample identification data required in this section

### Required Documentation for Laboratory Procedures for Lake Vegetation Index (LVI) determination (LT 7500) (See LVI 2210)

### Required Documentation for Laboratory Procedures for Wetland Condition Index (WCI) determination (LT 7600)

#### Vegetation WCI for Isolated Herbaceous Wetlands (LT 7612)

* Records of specimens brought to the lab for further inspection or expert identification
* Site, sample identification number (e.g., STORET station number, sample type, replicate number and date collected)
* Identification of sample collectors
* Total number of taxa identified from each transect
* Name of each taxon identified from each transect
* WCI metrics scores per LT 7612
	+ % tolerant indicator species
	+ % sensitive indicator species
	+ % exotic macrophyte species
	+ Annual to perennial ratio (A:P)
	+ Average coefficient of conservatism (CC) score

###### Final WCI score

#### Vegetation WCI for Isolated Forested Wetlands (LT 7622)

* Records of specimens brought to the lab for further inspection or expert identification
* Site, sample identification number (e.g., STORET station number, sample type, replicate number and date collected)
* Identification of sample collectors
* Region in which site is located, per Figure LT 7622-1
* Total number of taxa identified from each transect
* Name of each taxon identified from each transect
* WCI metrics scores per LT 7622
	+ % tolerant indicator species
	+ % sensitive indicator species
	+ % exotic macrophyte species
	+ Average coefficient of conservatism (CC) score
	+ % native perennial species
	+ % wetland status species

###### Final WCI score

#### Macroinvertebrate WCI for Isolated Herbaceous Wetlands (LT 7613)

###### Laboratory sample receipt or log-in record

###### Site, sample identification number, STORET station number, sample type, replicate number and date collected

###### Identification of sample collectors

###### Total number of organisms sorted from each selected grid tray aliquot

###### Number of grids, squares and aliquots selected and sorted (e.g., 8 grids out of 24 total sample grids)

###### Date of sorting completion

###### Total number of mounted microscope slides, mounting date for each slide, unique label identification for each slide and identification of mounter(s) for each slide for all sorted samples

###### Total number of individuals for each taxon for the 100-125-organism aliquots

###### Name of any organism removed from the sorted sample for reference collection

###### Name of each taxon identified for the 100-125-organism aliquot

###### Total number of taxa identified for the 100-125-organism aliquot

###### Total number of individual organisms identified for the 100-125-organism aliquot

###### Data entry into the Florida Statewide Biological Database (DEP staff only)

###### Method and notes for counting and collapsing taxonomic data for the 100-125-organism aliquot

###### Collapsed taxa list for the 100-125-organism aliquot

###### Index calculations per LT 7613:

* + % Sensitive genera
	+ % Tolerant genera
	+ % Predator Individuals
	+ % Odonata Individuals
	+ % Orthocladiinae Individuals

###### WCI metrics as scored per the table in LT 7613 4.7.

###### Label identification of archived vials of sorted organisms linked to sample identification data required in this section

###### Label identification of archived mounted slides (midges/worms/mites) linked to sample identification data required in this section

#### Macroinvertebrate WCI for Isolated Forested Wetlands (LT 7623)

###### Laboratory sample receipt or log-in record

###### Site, sample identification number, STORET station number, sample type, replicate number and date collected

###### Identification of sample collectors

###### Total number of organisms sorted from each selected grid tray aliquot

###### Number of grids, squares and aliquots selected and sorted (e.g., 8 grids out of 24 total sample grids)

###### Date of sorting completion

###### Total number of mounted microscope slides, mounting date for each slide, unique label identification for each slide and identification of mounter(s) for each slide for all sorted samples

###### Total number of individuals for each taxon for the 100-125-organism aliquots

###### Name of any organism removed from the sorted sample for reference collection

###### Name of each taxon identified for the 100-125-organism aliquot

###### Total number of taxa identified for the 100-125-organism aliquot

###### Total number of individual organisms identified for the 100-125-organism aliquot

###### Data entry into the Florida Statewide Biological Database (DEP staff only)

###### Method and notes for counting and collapsing taxonomic data for the 100-125-organism aliquot

###### Collapsed taxa list for the 100-125-organism aliquot

###### Index calculations per LT 7623:

* + % Sensitive genera
	+ % Tolerant genera
	+ Florida Index
	+ % Mollusca Individuals
	+ % Noteridae Individuals
	+ % Scraper Individuals

###### WCI metrics as scored per the table in LT 7623 4.7.

###### Label identification of archived vials of sorted organisms linked to sample identification data required in this section

###### Label identification of archived mounted slides (midges/worms/mites) linked to sample identification data required in this section

## Documentation of Laboratory Quality Control for Biological Community Analysis

The following sections summarize required documentation items for the indicated biological laboratory quality control procedures.

### Required Documentation of Quality Control for algal Identification

###### Initial demonstration of proficiency for each analyst per LQ 7110

###### Similarity values and % correct identifications for both soft algae and diatoms

* + Notes regarding new analyst training to correct proficiency of identifications
	+ Results of senior staff QC re-analysis of samples analyzed by newly proficient analysts

###### On-going quality control information per LQ 7120

###### Identification of all wet samples or slides re-analyzed as QC samples

* + Results of all QC sample analyses including taxa, counts and similarity values
	+ Results of analyst training to correct proficiency of identifications
	+ Results of any sample re-analyses due to QC failures

###### Results of quarterly consistency identifications per LQ 7130

* + Names of analysts participating in consistency identifications
	+ Identity of QC samples chosen for consistency identifications
	+ Results of consensus identifications for the QC samples
	+ % correct identifications for each analyst
	+ Corrective actions performed per consistency exercise results
	+ Cumulative taxa list derived from consistency identification exercises
* Corrective quality control information per LQ 7140
	+ Names of participating analysts
	+ Identity of samples chosen as QC samples
	+ Results of all analyses of QC samples performed by each analyst
	+ Results of intra-sample comparisons of the QC analyses
	+ Corrective actions performed, including updates to appropriate database(s)

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### Required Documentation of Quality Control for Macroinvertebrate Taxonomic Identification

#### Required Documentation of Quality Control for Macroinvertebrate Sorting (LQ 7410)

###### Total organisms as defined in LQ 7410, section 1.4

###### QC organisms as defined in LQ 7410, section 1.4

###### Original field sample identification

###### Subsample aliquot identifications

###### Cumulative sorting efficiency for each analyst

#### Required Documentation of Quality Control for Macroinvertebrate Taxonomic Identification and Enumeration (LQ 7420)

##### Documentation of Quality Control for Wet and slide-mounted Enumerations

##### Single-analyst cumulative identification error rate for total number of organisms identified

##### Single-analyst cumulative identification error rate for total number of taxa identified

##### Identification of original field sample or subsample QC-checked (*QC sample*, as defined in LQ 7420, section 3.1)

##### Results for each original field sample or subsample, including number of organisms identified for each taxon

##### Results for each corresponding QC sample, including number of organisms identified for each taxon

##### Name of taxonomist identifying original sample or subsample

##### Name of taxonomist performing the QC sample analysis

##### Date of each original field sample or subsample analysis

##### Date of each QC sample analysis

##### Additional comments associated with the QC check, including noted discrepancies and resolutions with the original field sample or subsample enumeration and that corrections were made to the appropriate database(s) as a result of QC check.

## References *(reserved)*

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