Data Set Citation

When using this data, please cite the data package

Rudstam L.
Zooplankton survey of Oneida Lake, New York, 1964 to present
kgordon.17.67 (https://knb.ecoinformatics.org/knb/metacat/kgordon.17.67/default)

General Information

Title:	**Zooplankton survey of Oneida Lake, New York, 1964 to present**
Identifier:	autogen.2016020518301938402.1
Abstract:	This dataset contains information on the crutacean zooplankton in Oneida Lake and is part of the collection "Cornell Oneida Lake Data". The Cornell Biological Field Station (CBFS) serves as a primary field site for aquatic research at Cornell University (more information can be found at http://www.cbfs.dnr.cornell.edu) and is part of the Department of Natural Resources, College of Agriculture and Life Sciences, Cornell University. The centerpiece of the station's research program is a 60-year database on the food web of Oneida Lake, New York, that has been collected with support from the Cornell University Brown Endowment and from the New York State Department of Environmental Conservation. The data are collected by personnel from the Cornell Biological Field Station and include limnology, benthos, zooplankton, phytoplankton, and fish survey data, primarily from Oneida Lake and spanning 1957 to the present. This data package contains biomass, density, and average size data for zooplankton collected at six sites on Oneida Lake, NY from 1964 to present. The data package also contains a location table with latitude and longitude of each sampling site as well as a table containing common name, scientific name, taxonomic data, and taxonomic serial number (ITIS) for each of the taxon used in the primary tables.
Keywords:	Global Change Master Directory - Science keywords: ○ Copepods ○ Cladocerans ○ Community structure ○ Food-web dynamics ○ Lakes ○ Zooplankton ○ Oneida Lake, New York ○ Madison County, New York ○ Oneida County, New York ○ Onondaga County, New York ○ Oswego County, New York

Data Table, Image, and Other Data Details:

Metadata download	Ecological Metadata Language (EML) File

Data Table:

Name:	**Zooplankton standard sampling locations, Oneida Lake, NY**

Physical Structure Description:

Object Name:	Zoop_locations.txt		
Text Format:	Attribute Orientation:	column	
	Simple Delimited:	Field Delimeter:	,

Online Distribution Info:

ecogrid://knb/cbfs.21.6

Attribute(s) Info:

Name	Column Label	Definition	Type of Value	Measurement Type	Measurement Domain	Missing Value Code	Accuracy Report	Accuracy Assessment	Coverage	Method
Site		Name of standard zooplankton sampling site		nominal	**Def** sampling site					
Latitude		Latitude in decimal degrees of standard zooplankton sampling site		interval	**Unit** degree **Precision** 0.00001 **Type** real					
Longitude		Longitude in decimal degrees of standard zooplankton sampling site		interval	**Unit** degree **Precision** 0.00001 **Type** real					
AverageDepth		Average depth of the station		interval	**Unit** meter **Precision** 0.1 **Type** natural					
StandardSite		Station used as a standard site for calculations of average weekly density and biomass		nominal	**Domain Info**					

Data Table:

Name: **Taxa List for Oneida Lake Crustacean zooplankton**

Description: Taxonomic codes, taxa, and taxonomic serial numbers for organisms identified in zooplankton samples collected from Oneida Lake, NY

Physical Structure Description:

Object Name: TaxaList Zooplankton Oneida.csv

Text Format:

Attribute Orientation: column

Simple Delimited:

Field Delimeter: ,

Online Distribution Info:

ecogrid://knb/cbfs.22.14

Attribute(s) Info:

Name	Column Label	Definition	Type of Value	Measurement Type	Measurement Domain	Missing Value Code	Accuracy Report	Accuracy Assessment	Coverage	Method
Group		Group used to summarize data		nominal	**Def** User defined groupings					
Taxon		Scientific name of organisms identified in zooplankton samples. Organisms are identified to varying taxonomic levels.		nominal	**Def** Taxon name					
TSN	Taxonomic Serial Number	Serial number assigned by the Integrated Taxonomic Information System to		nominal	**Def** Taxonomic serial number up to six digits					

		designate a taxon identified in zooplankton samples. Retrieved July 16, 2008 and May 2013, from the Integrated Taxonomic Information System on-line database, http://www.itis.gov.								
Genus		Scientific genus name		nominal	**Def** Genus name **Source** ITIS 2013	**Code** -999 **Expl** no genus name defined				
Species		Scientific species name		nominal	**Def** ITIS 2013					
Family		Scientific family name		nominal	**Def** family name **Source** ITIS 2013					
HigherClass		Sub group of crustaceans zooplankton - either cladocerans or copepods		nominal	**Def** Copepoda or Cladocera					
Maximum size		Maximum length considered when checking for outliers. Smaller lengths are accepted		interval	**Unit** millimeter **Precision** 0.1 **Type** natural					
ln a		Natural logarithm of the constant in the length-weight regression W = ln a + beta ln L with W in ug dry wt and L in mm Description in Waktins et al. (2011)		nominal	**Def** value of parameter - unit is ln (ug)					
Beta		parameter in the weight-length regression ln W = ln a + beta ln L L in mm, W in ug dry wt see Watkins et al. (2011)		nominal	**Def** parameter of W-L regression - power value - unitless					
AvgWt75_81		Average dry weight calculated for the time period 1975 to 1981. Used when animals were not measured in the pre-1981 time period.		interval	**Unit** microgram **Precision** 0.01 **Type** real	**Code** -999 **Expl** no such taxa identified in 1964 to 1981				
Notes		Notes about the taxa identification		nominal	**Def** free text					

Data Table:

Name:	**Zooplankton biomass, density and average size, Oneida Lake 1964 to 2014.csv**
Description:	This table reports biomass, density, and average size of 35 taxa of zooplankton identified in samples collected from six sites in Oneida Lake since 1964

Physical Structure Description:

Object Name:	Zooplankton biomass, density and average size, Oneida Lake 1964 to 2014.csv
Text Format:	Attribute Orientation: column Simple Delimited: Field Delimeter: ,

Online Distribution Info:

ecogrid://knb/cbfs.25.12

Attribute(s) Info:

Name	Column Label	Definition	Type of Value	Measurement Type	Measurement Domain	Missing Value Code	Accuracy Report	Accuracy Assessment	Coverage	Method
DateString		Date on which sample was collected YYYYMMDD		dateTime						
Date		Date of sample collection MM/DD/YYYY		dateTime						
Station		Station at which sample was collected		nominal	**Def** Name of sampling site					
StandardSample		This sample is part of the standard samples used to calculated weekly averages		nominal	**Domain Info**					
SamplingWeek		Sampling collection number, usually the week number		interval	**Unit** number **Precision** 1 **Type** natural					
Year		Year of sampling		dateTime						
Taxon		Taxonomic name, see taxonomy table.		nominal	**Def** Taxa name					
Density		Density of a taxon collected in the sample.		ratio	**Unit** numberPerMeterCubed **Precision** 1 **Type** real	**Code** -999 **Expl** density could not be calculated				
Biomass dry wt		Biomass (dry weight) of a taxon in the sample		ratio	**Unit** microgramPerCubicMeter **Precision** 0.01 **Type** real	**Code** -999 **Expl** biomass could not be caculated				
Average length		Average length of individuals of a taxon in the sample.		ratio	**Unit** millimeter **Precision** 0.01 **Type** natural	**Code** -999 **Expl** not measured				
Count		Number of animals measured		interval	**Unit** number **Precision** 1 **Type** natural	**Code** -999 **Expl** not recorded				

Data Table:

Name: **WeeklyZooplanktonOneidaLake.csv**

Description: Table derived from the data in Zooplankton biomass, density and average size Oneida Lake.csv by averaging lenght, density and biomass across standard stations and summing the number of animals measured

Physical Structure Description:

Object Name: WeeklyZooplanktonOneidaLake.csv

Text Format:

Attribute Orientation: column

Simple Delimited:

Field Delimeter: ,

Online Distribution Info:

ecogrid://knb/cbfs.132.6

Attribute(s) Info:

Name	Column Label	Definition	Type of Value	Measurement Type	Measurement Domain	Missing Value Code	Accuracy Report	Accuracy Assessment	Coverage	Method
DateString		First date of the samling week YYYYMMDD		dateTime						
Date		Date of first samling day in a sampling week MM/DD/YYYY		dateTime						
Year		Year of sampling		dateTime						
SamplingWeek		Sampling week usually the same as the week number of the year		interval	**Unit** number **Precision** 1 **Type** natural					
Taxon		Taxa name defined in the taxonomy table		nominal	**Def** Scientific name					
AvgLength		Average of the average lengths measured at each station		interval	**Unit** millimeter **Precision** 0.01 **Type** real	**Code** -999 **Expl** Not measured				
Count		Number of animals measured, sum over all stations		ratio	**Unit** number **Precision** 1 **Type** natural	**Code** -999 **Expl** Data not recorded or animals not measured				
Density		Average density across stations		ratio	**Unit** numberPerMeterCubed **Precision** 1 **Type** natural					
Biomass		Dry biomass averaged over the stations		ratio	**Unit** milligramsPerCubicMeter **Precision** 0.01 **Type** real					

Involved Parties

Data Set Creators

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Data Set Contacts

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Data Set Characteristics

Geographic Region:

Geographic Description:	Oneida Lake, New York
Bounding Coordinates:	West: -76.140606 degrees East: -75.729718 degrees North: 43.256445 degrees South: 43.146888 degrees

Time Period:

Begin:	1964
End:	2014

Taxonomic Range:

Classification:	Rank Name:	Subphylum
	Rank Value:	Crustacea

Sampling, Processing and Quality Control Methods

Step by Step Procedures

Step 1:

Description:

Field and laboratory methods

Zooplankton samples were collected at variable intervals throughout the year from 1964 to 1974 at the Shackelton Point site and at weekly intervals from 1975 to the end of the data series during May - October, and from November - April as weather permitted, at 1 to 6 sites. The main site used was Shackelton Point. Because one site (Billington Bay) was only sampled some years, it is not included in the weekly average table. This table averages data taken from five sites (Shackelton Point, Buoy 109, 117 and 125, and Three Mile Bay) collected during the same sampling week. Sampling week is identified with a number that in most cases is the same as the week number of the year. On a small number of occasions, a sampling was conducted on a Friday to Sunday for the following week. The net used was a 153-um mesh nylon net (0.5 m diameter) towed vertically from 0.5 m off the sediment surface to the water surface. The efficiency of the net was measured with flow meters from 1999 to present. If flow meter readings indicate a malfunction or human error (efficiencies below 50% and above 125%) and when no flow meter was used, we assumed an efficiency of 87.4% (average of the 1999 to 2010 sampling period 87.4% SD 9.5%, N=1655). Flow meters were calibrated each year. When flow meters were not available, volume strained was calculated as

[Vol Strained] = [Tow Depth] * pi()*0.25^2*0.874

Samples were preserved in 8 % sugar-formalin solution (1964-1996) or 70 % ethyl alcohol (1997-present). Samples are stored at the Cornell Biological Field Station.

Crustacean zooplankton were counted (1964-1974) and counted and measured (1975-end of data series) using a dissecting microscope (1964-1982), a touch screen-caliper setup with computer-assisted plankton analysis system (1983-1997) (WSAM, Hambright and Fridman 1994) or a digitizing tablet and microscope (1998-end of the data series). For each sample, a 1-mL sub-sample was drawn with a calibrated Hensen-Stempel pipette or large-bore calibrated automatic pipette and all crustaceans counted and measured (since 1975). Additional sub-samples were drawn until a minimum of 100 animals were counted and measured from each sample. From 1964 to 1979, three such subsamples were counted and averaged. Gamble et al. (2006) compiled the data from 1975 to 1997 for a study on biomass size spectrum and re-measured historic samples from 1975 when only Daphnia were measured. Unrealistic length measurements sometimes substantially (for small cladocerans) outside accepted maximum lengths occurred on a small number of occasions and were assumed to be in error. They were replaced by the modal length for small cladocerans and the maximum accepted length for other species [25 of 39398 Bosmina, 146 of 28882 Chydorus, 16 of 7035 Diaphanosoma, 8 of 22767 Eubosmina, 4 of 77932 Diacyclops and 82 of 61208 nauplii] Biomass for individual species was calculated using length-weight regressions based mainly on Bottrell et al. (1976) and summarized in Watkins et al. (2011). Length-weight parameters are included in the taxa table. For years without length measurements (1964 to 1974 and 1978), the biomass is estimated from the average weight of the species or species group calculated for the time period 1975 to 1981 and given in the taxa table. Taxonomic detail varies over time. For the period 1964 to 1974 all crustacean were categorized in 10 species groups: Bosmina, Ceriodaphnia, Chydorus, Daphnia pulicaria, D. mendotae, D. retrocurva, Leptodora, Diaphanosoma, calanoid copepods and cyclopoid copepods. Nauplii were excluded in 1964-74. Information on the taxonomic details is in the taxa table. Copepod nauplii were counted since 1975 but not identified to group. Nauplii are underestimated due to the large mesh size (153µm). Rotifers and zebra mussel veligers are not included in this data set. More information regarding specifics of data collection is available from the data package contact. Individual length data can be requested from the data package contact for the post 1998 time period.

Step 2:

Description:

References

This is a companion data set to the book Oneida Lake: Long-term dynamics of a managed ecosystem and its fisheries, edited by LG Rudstam, EL Mills, JR Jackson and DJ Stewart and published by the American Fisheries Society, Bethesda, Maryland.

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Step 3:

Description:

Publications using Oneida Zooplankton data

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Data Set Usage Rights

Access Control:		
Auth System:	knb	
Order:	allowFirst	
Allow:	[read]	public
Allow:	[all]	uid=datastar,o=unaffiliated,dc=ecoinformatics,dc=org
Allow:	[all]	uid=gss1,o=unaffiliated,dc=ecoinformatics,dc=org
Allow:	[all]	uid=kholeck,o=unaffiliated,dc=ecoinformatics,dc=org
Allow:	[all]	uid=teb1,o=unaffiliated,dc=ecoinformatics,dc=org
Allow:	[all]	uid=rudstam,o=unaffiliated,dc=ecoinformatics,dc=org

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