Metadata

Seasonal floodplain herbaceous plant species in the Okavango Delta, Botswana

General information

name of the dataset:

full name of the dataset:	*Seasonal floodplain herbaceous plant species in the Okavango Delta, Botswana*
dataset short name:	*Boro and Xudum Floodplain Vegetation Data 2007*
type of dataset (more information):	*species (taxonomic group) per site database including environmental information*
specify:	*1 sq m quadrats along transects across 30 sites*
data type:	*point data/observation data*

short description of the dataset/summary:

This study covered the southern parts of the Okavango Delta - the seasonally flooded Xudum and Boro distributary systems. It was a single campaign aimed at collecting and analysing floodplain vegetation species and abundance data, to establish relationships with hydroperiod for exploratory scenario modelling. A stratified random sample of 30 sites was surveyed for species composition and abundance between mid-March and mid-July 2007, using multiple 1 sq m quadrats along transects orthogonal to the floodplain long axis. Minimum sampled area at each site was 30 sq m. Hydroperiod was established based on three sets of remote sensing data: 1:50,000 analogue aerial photography from 2001, Landsat (annual) and MODIS (monthly) data from 2000-2007, and ground truthing from 2007.

keywords according to GCMD:	
topic:	*Biosphere, Terrestrial Hydrosphere*
ISO topic category according to ISO 19115:	*Biota, Inland Waters*
INSPIRE keywords according to GEMET:	*Habitats and biotopes, Hydrography, Species distribution*
own science keywords:	*herbaceous macrophytes, seasonal floodplains, Okavango Delta, hydroperiod, tropical wetlands, flood pulse, occurrence, relative abundance*
funding:	*University of Botswana (Funds for Fieldwork and Travel), University of Florida (Adaptive Management: Water, Wetlands and Watersheds program funded by the National Science Foundation), Biokavango Project (Global EnvironmentFacility), JRS Biodiversity Foundation (Reformatting database to DC standards)*

Technical and administrative specifications

data format: *txt*
others/details: *DwC-A*
operating system: *Linux*
others/details: *Ubuntu*
data language: *English*
current access level: *web (public)*
web address:
http://www.monitoringdata.ub.bw/ipt/resource?r=herbaceous_floodplain_vegetation_mmh2007&v=1.0
others/details: https://www.gbif.org/dataset/602b5978-0777-41d7-8c9f-44f459b0f8ef
currently available through GBIF: *yes*
exchange planned: *no*
data in data repository: *yes*
specify repository: *http://www.monitoringdata.ub.bw/ipt*
Do you plan to publish the data on the Freshwater Biodiversity Data Portal: *no*
update level: *completed*
documentation:
type: *internal description*
language: *English*

contact details:

metadata contact person:
first, last name: *Michael Murray-Hudson*
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province, state: *North-West District*
country *Botswana*
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Intellectual property rights and citation

dataset publisher (if the dataset is already published): *Okavango Research Institute*

dataset creator (data compiler):

contact name:	*Michael Murray-Hudson*
contact email:	*mmurray-hudson@ub.ac.bw*
contact institution:	*University of Botswana Okavango Research Institute*

data contributors to/owners of this dataset:

	multiple
number:	*3*

provider 1:

provider institute:	*University of Botswana Okavango Research Institute*
contact name:	*Michael Murray-Hudson*
contact email:	*mmurray-hudson@ub.ac.bw*
criteria for using the data in a publication/scientific analysis:	
	The dataset is publicly available (data portal, data archive) and can be used without restrictions, but dataset creator/data contributors must be informed prior to publication. Data must be acknowledged and cited correctly.

provider 2:

provider institute:	*Peter Smith Herbarium, Okavango Research Institute*
contact name:	*Frances Murray-Hudson*
contact email:	*fmurray-hudson@ub.ac.bw*
criteria for using the data in a publication/scientific analysis:	
	The dataset is publicly available (data portal, data archive) and can be used without restrictions, but dataset creator/data contributors must be informed prior to publication. Data must be acknowledged and cited correctly.

provider 3:

provider institute:	*University of Botswana Okavango Research Institute*
contact name:	*Wilfred Khaneguba*
contact email:	*wkhaneguba@ub.ac.bw*
criteria for using the data in a publication/scientific analysis:	
	The dataset is publicly available (data portal, data archive) and can be used without restrictions, but dataset creator/data contributors must be informed prior to publication. Data must be acknowledged and cited correctly.

citation of this dataset:

author(s):	*Makati, K., Murray-Hudson, M.*
title and journal (name, number, pages):	
	Boro and Xudum Floodplain Vegetation Data 2007. Version 1.1. Okavango Research Institute. Sampling event dataset https://doi.org/10.15468/fooskp accessed via GBIF.org on 2019-09-06.
year:	*2019*
version (if applicable):	*1*
doi (if applicable):	https://doi.org/10.15468/fooskp

citation of the metadata:

author(s):	*Murray-Hudson, M., Makati, K., Mosie, I. & Wolski, P.*
title and journal (name, number, pages):	
	Metadata for macrophyte data from the Boro-Xudum seasonal floodplains of the Okavango Delta. Freshwater Metadata Journal 45: 1-8

year:	*2019*
doi (if applicable):	https://doi.org/10.15504/fmj.2019.45

General data specifications

regional coverage of the dataset:

spatial extent of the dataset:	*regional*
continents:	*Africa*

spatial extent (bounding coordinates):

southernmost latitude [°]:	*-19.979*
northernmost latitude [°]:	*-19.067*
westernmost longitude [°]:	*22.302*
easternmost longitude [°]:	*23.236*
minimum altitude:	*940 metres*
maximum altitude:	*970 metres*
countries:	*Africa: Botswana*
comments:	*Okavango Delta seasonal floodplains*

world climatic regions according to Köppen:

Group B: dry (arid and semiarid) climates

freshwater ecoregions of the world (FEOW) according to WWF:

Africa: Okavango

ecosystem type: *wetlands*

covered timeframe:

year from:	*2007*
year to:	*2007*

Site specifications

coordinate system/grid data:	*latitude/longitude, format: DD*
grid data available:	*no*
comments:	*GPS coordinates for each quadrat. Accuracy +/- 3m.*
site coding:	
site coding available:	*yes*
	alphanumerical
number of digits:	*25*
example:	*MMH_BOB-1-01_20070417-01*
number of sites:	*<100*
exact number of sites:	*30*
comments:	*Samples are 1 sq m quadrats. Sites had 1-5 transects; a minimum of 30 quadrats 20 m apart along transects at each site.*

Climate and environmental data

climate related data: *no climate data available*

environmental data:

no environmental data per catchment available

available parameters per site: *information on floodplain inundation duration*
remote sensing-derived hydroperiod
data source:

available parameters per site: *altitude*
from GPS
data source:

available parameters per site: *hydrological regime/flow regime*
remote sensing-derived hydroperiod
data source:

available parameters per site: *mean depth*
measured at site on date of survey
data source:

comments: *Shallow, elongate floodplains, which are seasonally pulsed and carry very slow flow. Highly permeable sandy organic soils.*

physico-chemical data: *no physico-chemical data available*

stressors influencing the sites: *no stressor data available*

reference sites available: *no*

Biological data

biological data origin:	*from sampling,*
specify project:	*Floodplain vegetation responses to flood regime in the seasonal Okavango Delta, Botswana*
specify method:	
comments:	*Data collected as part of research for a PhD.*
organism group addressed:	*macrophytes*

Sample specifications/sample resolution

macrophytes:

sample information:

covered timeframe:

year from - to: *2007 - 2007*

historical data: *no*

palaeo data: *no*

season: *winter*

temporal resolution/frequency of sampling:

a single survey campaign from mid-March to mid-July 2007

time series data: *no*

comments: *Field survey work was carried out over the rising flood, for four months between mid-March and mid-July 2007.*

taxonomic resolution:

percentage of species level data: *99*

comments: *Individuals were identified to species level in the field as far as possible. Where not possible they were pressed as herbarium specimens and submitted to the Peter Smith Herbarium (PSUB) at the University of Botswana Okavango Research Institute for identification. Specific unidentified grass specimens of the sub-family Panicoideae were sent to the Royal Botanical Gardens, Kew, United Kingdom for identification.*

taxonomic coding:

taxalist according to: *Germishuizen, G., Meyer, N.L. 2007. http://posa.sanbi.org.*

citation: *Germishuizen, G., Meyer, N.L., 2007. Plants of Southern Africa: an online checklist: http://posa.sanbi.org.*
Cook, C.D.K., 2004. Aquatic and wetland plants of southern Africa: An identification manual for the stoneworts (Charophytina), liverworts (Marchantiopsida), mosses (Bryopsida), quillworts (Lycopodiopsida), ferns (Polypodiopsida) and flowering plants (Magnoliopsida) which grow in water and wetlands of Namibia, Botswana, Swaziland, Lesotho and Republic of South Africa. Leiden: Backhuys.
Gibbs-Russell, G.E. et al., 1991. Grasses of southern Africa - an identification manual. Memoirs of the Botanical Survey of South Africa No. 58. National Botanic Gardens/Botanical Research Institute, Pretoria.
Clarke, N.V., Klaassen, E.S., 2001. Water Plants of Namibia - an identification manual. Occasional Contributions 2, National Botanical Research Institute, Windhoek, Namibia

coding system: *first three letters of genus, first three letters of species, no separator*

example: *Abihis: Abildgaardia hispidula*

sample specifications: *quantitative (abundance data)*

replicate samples: *no*

number of samples: *1080*

specification of method(s) used for sampling and sorting:

- Step 1 involved the selection of random sites for vegetation sampling. This was based on historic hydroperiod - a flood frequency map derived from remote sensing which assigned a frequency to each pixel. The frequency map was stratified into 5 strata of approximately equal area, and in each stratum 6 sites were selected by randomising the pixel numbers.
- Step 2 involved doing surveys of the vegetation at each site by laying out transects orthogonal to the long axis of each floodplain, and enumerating

plant species within 1 square metre quadrats at 20 metre intervals along these transects. Species-area plots from sampling carried out beforehand indicated that a minimum of 25 square metres should be sampled. A minimum of 30 quadrats was thus surveyed at each site. All species in each quadrat were recorded and their relative abundance estimated according to a modified Braun-Blanquet classification.

citation: *Wolski, P., Murray-Hudson, M. 2006. Reconstruction of 1989-2005 inundation history in the Okavango Delta, Botswana from archival Landsat imagery, Globwetland Symposium. Frascati, Italy. ESA-ESRIN.*
Wolski, P., Murray-Hudson, M. 2005. Flooding dynamics in a large low-gradient alluvial fan, the Okavango Delta, Botswana, from analysis and interpretation of a 30-year hydrometric record. Hydrol. Earth Syst. Sci. J1 - HESS 10:1, 127-137.

sample type (e.g. habitat specific samples, composite samples etc.):

Quadrats were sampled along transects which crossed the topographic gradients of each floodplain site. That is, they were designed to sample all microhabitats within each floodplain site.

specific sample location (e.g. littoral, profundal, transect, shoreline, hyporheic zone, etc.):

Multiple transects per site.

Other specifications

GIS layers, shape files related to the dataset:

no data available

availability of photos: *no*

availability of maps: *no*

quality control procedures:

Were any quality control procedures applied to your dataset?

yes

quality control protocols and comments:

Relative abundance estimates were made by consensus of at least two field surveyors, and a one-day calibration exercise was carried out at the beginning of the field work to ensure consistency. Data entry was done by M. Murray-Hudson, and F. Murray-Hudson into a custom-designed Microsoft Access relational database; reading of field sheets and typing was done alternately, and data were cross-checked with field sheets after all had been transcribed.