Chibudom Orji - Directed Study

A Data Management Plan created using DMP Assistant

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Affiliation: Other Organisation

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Template: Portage Template

Project abstract:

The prevailing rates and patterns of spread of different invasive species in Ontario are determined using very well-documented examples of geographical expansions. The spread patterns are divided into four main categories based on a radius-occupied versus time curve. Dataon zebra mussel (Dreissena polymorpha), giant hogweed (Heracleum mantegazzianum), purple loosestrife (Lythrum salicaria) and round goby (Neogobius melanostomus) were collected from EDDMapS. Monitoring detections over time show that there is no significant effect of bias that might be introduced due to effort put into detection. Lags are evident in the spread rate or patternof the different species most especially in giant hogweed, which can be explained by different phenomena, such as the fact that the giant hogweed takes a couple of years to fully germinate because it is a perennial crop and if conditions deem unfavourable for germination, they can stay viable in the soil for up to 15years. The zebra mussel, giant hogweed and round goby were all projected to have an exponential spread pattern, but only the giant hogweed followed this prediction. The zebra mussel and round goby were seen to mimic the saturating model most, which can both be explained by heavy predation by the introduced round goby in the case of the zebra mussels and larger native fish in the great lakes such as bass and walleye in the case of the round goby. The purple loosestrife showed a sigmoid curve spread pattern as predicted.

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Copyright information:

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Data Collection

What types of data will you collect, create, link to, acquire and/or record?

Data come from EDDMapS Ontario, and are publicly available. They consist of point detections in the form of gps coordinates with a timestamp for 4 invasive species in Ontario.

What file formats will your data be collected in? Will these formats allow for data re-use, sharing and long-term access to the data?

The data are in .csv format, which is a standard text format.

What conventions and procedures will you use to structure, name and version-control your files to help you and others better understand how your data are organized?

a readme is presented with the data to better understand them

Documentation and Metadata

What documentation will be needed for the data to be read and interpreted correctly in the future?

the readme will be required

How will you make sure that documentation is created or captured consistently throughout your project?

the documentation is already created

If you are using a metadata standard and/or tools to document and describe your data, please list here.

please see readme file in the data subsection on OSF.

Storage and Backup

What are the anticipated storage requirements for your project, in terms of storage space (in megabytes, gigabytes, terabytes, etc.) and the length of time you will be storing it?

The data will be stored permanently and are <10MB

How and where will your data be stored and backed up during your research project?

The data will be stored on OSF, google drive, and on Emma Hudgins' computer

How will the research team and other collaborators access, modify, and contribute data throughout the project?

Chibudom accessed the data through google drive, all collaborators have read access on OSF. Emma and Joe are admins on OSF.

Preservation

Where will you deposit your data for long-term preservation and access at the end of your research project?

Through OSF

Indicate how you will ensure your data is preservation ready. Consider preservation-friendly file formats, ensuring file integrity, anonymization and de-identification, inclusion of supporting documentation.

the inclusion of the readme and csv format shold be sufficient in addition to the manuscript.

Sharing and Reuse

What data will you be sharing and in what form? (e.g. raw, processed, analyzed, final).

the processed data are shared here (merged to a 10kmx10km grid in GIS for the province of Ontario and with timestamps converted to yearly detections in each grid cell, see manuscript).

Have you considered what type of end-user license to include with your data?

the data are CC0 1.0 licensed (public domain).

What steps will be taken to help the research community know that your data exists?

the data are hosted publicly on OSF.

Responsibilities and Resources

Identify who will be responsible for managing this project's data during and after the project and the major data management tasks for which they will be responsible.

Emma Hudgins is the PI and will maintian the OSF project indefinitely. Joseph R. Bennett will become the PI if and when Emma leaves the lab.

How will responsibilities for managing data activities be handled if substantive changes happen in the personnel overseeing the project's data, including a change of Principal Investigator?

Joseph R. Bennett will become PI of the data and will become the sole admin.

What resources will you require to implement your data management plan? What do you estimate the overall cost for data management to be?

negligible costs.

Ethics and Legal Compliance

If your research project includes sensitive data, how will you ensure that it is securely managed and accessible only to approved members of the project?

NA

If applicable, what strategies will you undertake to address secondary uses of sensitive data?

NA

How will you manage legal, ethical, and intellectual property issues?

The data are the IP of all team members. Subsequent use of the data will cite this source. See Bennett lab manual for authorship specifications.