Conifer forest recovery after prescribed fire

A Data Management Plan created using DMP Assistant

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Project abstract:

"Understanding the determinants of forest recovery post-disturbance is important for effective forest management. These data, collected by Dr. Phil Burton from 2005-2008, are both pre- and post-fire descriptions of conifer forest vegetation. Pre-burn data from three project sites (Carrot Lake south of Vanderhoof, BC, Mt. Robson Prov. Park, Jasper Nat'l Park) were variously collected from 2004 thru 2008; post-burn data were typically collected for 3 years, covering periods from 2005 to 2011. The data consist of Excel files including line transect cover, coarse and fine fuels, overhead canopy cover, and overstory description values. Post-burn data includes regeneration tallies, depth of burn, and height of scorch and charring." Obtained from (https://osf.io/gmbv6/wiki/home/), Sep 27, 2021

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Data Collection

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

Mainly tabular data.
Table 1 (single trees): Variables: 0- site_id 1- Tree_id 2-species name 3- size (DBH) 4- live/dead status
Table 2: 0- site_id 1- species name 2- tree seedling density 3- tree sapling density 4- plant cover 5- fuels transect 6- depth of duff (pre-burn) 7- depth of burn (post-fire)
Table 3: 0- site_id 1- height of char 2- height of scorch 3,4-GLA (gap light analysis) results (cover and relative irradiance) for hemispherical canopy photographs.

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?

Images are stored in .jpg format and other data are stored in .csv format. Both formats allow for data re-use, sharing, and long-term access to the data.

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?

Images will be named according to the convention: <site_id_coordinates_status_date> with site_id specifying the site of study, coordinates illustrating exact geographic location, status showing the picture belongs to pre or past fire, and date specifying the date of Image (in the format YYYYMMDD).
The following entity relation diagram shows the structure of data:

GitHub will be used to version control.

Documentation and Metadata

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

A ReadMe file will be created and all the data necessary to make the data usable by other researchers in the future will be incorporated in that (including variable definitions and units). Also, I'll provide adequate comments on the script in a .Rmd file.

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

Actually, the data is previously recorded. All that can be done at the moment is organizing it in a consistent and standard format.

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

Should be further discussed with the supervisor.

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 size of raw data is below 5 GB. During data cleaning, up to 5 intermediate versions will be created. Both raw data and intermediate versions are small enough to be stored in all mentioned devices. After the end of the project, clean data will be uploaded to Zenodo repository. Furthermore, this database has version controlling features

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

1- Google drive
2- On two laptop hard drives (my personal laptop and the PI's laptop)
3- On an external hard drive

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

As the data is not sensitive, all contributors can access it via GitHub.

Preservation

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

Zenodo repository

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.

Tabular data will be uploaded as '.csv' file and images as 'JPG' file

Sharing and Reuse

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

Both raw and processed data will be shared.

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

CC-By license will be used with the data

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

Hopefully, manuscripts will be published that are linked to this data. In addition, Zenodo provides 'doi' for the dataset.

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.

Javad Meghrazi

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?

Philip J. Burton

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

There will be no cost associated with data preservation but the cost of personnel hours is paid by Canadian institute of ecology and evolution (ciee/icee).

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?

The data is not sensitive

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

Not applicable

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

The data will be shared as intellectual property of researchers on this project and involved universities. Also, it will be available for reuse under the CC-By license.