

Developing a Data Management System for the Dehcho Region

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Data Management Considerations

Two main problems that arise when collecting monitoring data are its storage and accessibility. For instance, many communities and organizations may only have the ability to transfer data recorded with pencil and paper to Microsoft Excel files. This ultimately restricts accessibility to the data and the ability for it to be analyzed and used. Often times the data remains only in hard copy form.

In order for collected data to be useful, it must first be transcribed manually. This involves entering data in number form into an Excel spreadsheet or some other kind of similar software application.

Sometimes data is automatically uploaded to an application via satellite or it is stored in the equipment or instrument itself, then the user must digitally transfer the data over using a USB cable or blue tooth.

Once the data has been entered into a computer, programs like Microsoft Excel allow the user to manipulate the data and present it as graphs, charts, trends, etc. This electronic version of the data must then be properly stored so that it can be easily accessed. The first place to save it is on a computer and/or external hard drive. Then, a database is required to allow other people to access the data and provide secure, long-term storage.

Data Management Options

There are a lot of options for databases depending on how much and what type of data is being collected, what type of analyses are being done, who needs access, security, and the amount of funding available. The first thing to think about is whether the organization wants the data stored “in house”. This option depends on capacity as there is need for a server and an IT person to perform maintenance on it and the database. Storing data on a server on site is the most secure option, however, it is also the most expensive. This option would be good in the long run and is increasing an organization’s capacity to carry out work and monitoring.

If the organization collecting data does not have an IT person on staff or does not have the need for a server, the other option is to go with a cloud-based database. Cloud systems store data in servers at a remote location and it is secure there as long as the servers are maintained. In order to carry out this option, it is also suggested to use an IT specialist. They will be able to customize the system to the organization’s requirements and will recommend the most ideal software. An IT consultant can be contracted to develop, build, and maintain a cloud-based data management system. This will cost less

than hiring a full-time IT technician and maintenance of a server. There is a lot of software that can be used to create databases, including from big tech companies. This is why it is best to have someone with experience help choose what to use.

Dehcho Region's Approach

As an example in the Dehcho, Dehcho AAROM needed to archive and store data so that member communities could still gain access and not risk of losing it. The first step was to find an experienced IT consultant. This was done by talking to other organizations carrying out the same type of Indigenous-led environmental monitoring. Dehcho AAROM was able to find a reputable person and the process of creating a regional database started with him asking what it was we wanted. This is a very important step as it will determine the type of software and what the actual database will look like. After the initial consultation and several more meetings over the phone, it was decided that the Dehcho needed a database that was accessible on-line through a webpage and could be accessed by each community with a user name and password specific to them. The system would be cloud-based with one main administrator to add and remove data, create users, and control access. Since Dehcho AAROM did not have an IT person employed, they went with the option of having the consultant maintain the database and make sure server fees were routinely paid. These services range from \$2,000-\$3,000 per year. This type of database costs approximately \$15,000 to set up. However, there is also the ability to upgrade a system like this. For example, Dehcho AAROM has recently upgraded their database to track monitors/Guardians on patrol, collect observations and data through tablets, and have data be automatically uploaded to the database from the tablets once in Wi-Fi range.