



MONTANA
Natural Resource
Information System

Natural Heritage Program
Water Information System
Geographic Information System

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Memo

To: Larry Mitchell
From: Jim Stimson
CC:
Date: 01/19/00
Re: Questions on environmental indicators and trends

I've drafted the following responses to your questions. I hope they are helpful. I will plan on attending the EQC meeting on Friday, January 21 and will be prepared to answer additional questions if needed.

Response to Questions:

1. With the exception of the Natural Heritage Program (NHP), NRIS does not collect data, it stores copies of data bases from other agencies in a "clearinghouse" and makes the data more accessible for all patrons. However, NRIS provided assistance to the EQC to publish "Our Montana Environment . . . Where do we stand? (1996)" and could offer further assistance identifying data that could be used as environmental indicators. With additional support NRIS could also play a more active role in working with the other agencies to make their data more useful for identifying environmental trends.

As you know, the NHP collects and manages data and information on plant and animal species of special concern. Heritage could potentially contribute to the EQC effort by:

- Tabulating the numbers of species that have increased in rank (are now considered more imperiled) over the past several years, as well as those that have decreased in rank (are now considered less imperiled, usually based on new or better information). A color-coded map of Montana could be generated showing the counties where these species are located, e.g., the darkest shading indicating the most occurrences of species that are considered more imperiled, another shading to show numbers of occurrence of species that are considered less imperiled.
- NHP could also provide a map they have created showing locations of species that were dropped from consideration for federal listing as a result of information provided by the

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Exhibit 3

Heritage Program and experts in other states (good news). This could be expanded to include species that have dropped from G3 rank (globally rare, potentially qualifying them for federal listing consideration) to G4 rank (apparently secure). Again, these maps could be color-coded by county for small-scale depiction.

- Finally, NHP could show the increase in conservation lands (numbers and acres, or shaded by county, etc.). For example, this might depict conservation easements established over a selected period, based on the establishment date of each area.

In addition to the NHP data, there are data bases in the NRIS clearinghouse or available to NRIS that could be used as direct or indirect environmental indicators. NRIS helped EQC staff use several of these data sets in EQC's publication including the MBMG Well Log data base and the U.S Census Bureau. NRIS is working with the DEQ to facilitate public access to several important data bases that have potential as environmental indicators. These include:

- Leaking Underground Storage Tank (LUST)
- Underground Storage Tank (UST)
- TMDL
- Volunteer Water Monitoring
- Public Drinking Water Supply well and related water quality data

Other data bases that could possibly help your effort include the Montana Rivers Information System (MRIS), wetlands inventory, mine locations, wastewater permits, active and in-active landfills, and others. Some of these data bases are incomplete, in need of updating, or may need modification to make them useful as environmental indicators. Additional effort would be required to assess how much it would take to make these data sets useful. Currently, NRIS would not be able to devote substantial resources to make this assessment.

2. While NRIS has not developed environmental indicators, we are aware of national sites that list key indicators and what other states have done to use the indicators. EPA's web site can be found at: (<http://www.epa.gov/Indicator/>).

If directed and supported to make indicator data more accessible, NRIS could work with the agencies collecting data to develop standards for including information to help document trends, act as a clearinghouse for indicator data, and disseminate the information using web-based user tools. Such an effort could be a sizable addition to NRIS's current mission and we would need to carefully examine the resources needed to host and deliver indicator data and reports.

3. **Question 3 is not directed to NRIS.**

4. In dealing with data in the NRIS clearinghouse, several issues become apparent when considering using this data to identify trends.

- Keeping data current and accurate is usually the primary concern of data managers. Most data bases are routinely maintained in an effort to keep them current and improve accuracy. This involves adding new records for specific locations, correcting erroneous data values, filling in missing values and improving locational information.

- Documenting why and when data were changed is secondary or often not part of data management activities. Unfortunately, this documentation is key to identifying and validating trends. In addition, old copies or versions of data bases are often not kept or archived. Sometimes this is done because changes made during maintenance or modernization make the older versions incompatible and of limited use. Sometimes it may simply not be practical to keep numerous copies of a data base in circulation. Whatever the reason, the information that is critical for identifying trends is not maintained or discarded.

Options:

- EQC could recommend that agencies collecting data, or regulating others that collect data, add information to their data bases to support tracking and assessing trends. This could be done by creating a related table to record changes made to each data field or record. The added information should include:
 - Date of change or update.
 - Reason for change. (New data, filling in missing data, error correction, staff reevaluation of the existing data's validity, etc.)
 - Contact person for questions.
- Archived data bases could be provided to NRIS for long-term storage and made accessible through the NRIS clearinghouse. The data bases could be examined and steps taken to better integrate related data and tools could also be created to make it easier to use the data to identify and examine trends. Trend reporting to EQC could be available on an annual basis. NRIS would need additional resources to play this role on behalf of the agencies and EQC.