

Montana State Digital Library February and March 2012

Prepared for the April 11, 2012 Commission meeting
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This report represents accomplishments of
Library Information Services (LIS),
Natural Resource Information System (NRIS),
The Base Map Service Center (BMSC)
& the Montana Natural Heritage Program (MTNHP).

Goal One, Content: MSL acquires and manages relevant quality content that meets the needs of Montana library partners and patrons.

Since February 15, 2012 LIS has shipped a total of 14 boxes of the estimated 29 boxes needed to complete the Internet Archive contract by June 30th, 2012. LIS is initiating regular contact with the scan center and Internet Archive accounting department to insure good communication, a regular billing schedule, and timely completion of the digitization project for this contract period.

In anticipation of the Executive Planning Proposal (EPP) process, LIS prepared a request for a one-time-only, two-year state publications digitization project totaling \$545,000 over the 2013 biennium. These funds would cover the total cost to digitize approximately 24,400 remaining state publications containing 1,800,000 pages @ .24 cents per page. Costs include scanning, shipping, supplies, and temporary staff to support the project.

Submitting the EPP was also the occasion for LIS to further clarify the size of the state publications collection. Previously the state publications print collection was estimated at 50,000 to 55,000 print publications. As the digitization project progresses, LIS staff has been able to identify numerous non state publications and multiple copies of the same title that inflated the original estimate of print publications. The new total estimated size of the legacy print state publications collection is 37,000 publications.

The Montana State Library received delivery of the statewide 1 meter, 4 band National Aerial Imagery Program (NAIP) data. This is the third NAIP product that the USDA Aerial Photography Field Office (APFO) has flown covering all of Montana, and the library now has all of those (2005, 2009, and now 2011) in its collection. We are particularly pleased that the imagery mission was flown in 2011 because this was an unusually wet year with extensive flooding that impacted numerous parts of the state. Coupled with the 2005 dataset which was flown during an extremely dry year, we feel fortunate to have such detailed documentation of how such extreme variations in

annual weather patterns can impact the physical landscape of the state. More detailed information about how patrons can use this data can be found below in the ACCESS section of the report. More background on the NAIP program is available at - <http://www.fsa.usda.gov/FSA/apfoapp?area=home&subject=prog&topic=nai>

Base Map Services continued integration and maintenance of the Cadastral, Transportation, Structures/Addresses, Administrative Boundaries, Imagery and Geodetic Control Frameworks.

- GIS Analyst Michael Fashoway continued to work with 16 rural counties and 7 tribal governments to develop data sharing agreements for address data. He visited 12 counties and two tribes during February and March. We have three signed data sharing agreements with several others in development.
- At the request of many users we linked the cadastral application to a topographic service so users can view the cadastral data against a background of the USGS rastergraphics.
- GIS Analyst Joshua Dorris worked with MDT to get an updated bridge location file to be incorporated into the Transportation framework.

Partly in response to a patron request, Gerry Daumiller produced a map showing the center of population for Montana based on the last three (1990, 2000, and 2010) decennial censuses. The center of population for the state is just north of White Sulphur Springs, which is notably west of the geographic center of the state (near Lewistown). Since 1990 the center of population in Montana has been moving south and west roughly in the direction of Helena. More information including a link to the downloadable PDF version of the map is available at -

<http://nris.mt.gov/new/displayRelease.asp?relNum=320&referrer=whatsnew.asp>

MTNHP Botanist Scott Mincemoyer released an updated version of the Checklist of Montana Vascular Plants (http://mtnhp.org/docs/021412_MT_Plant_List.pdf). He is also assessing the vulnerability of 70 globally rare plant species using NatureServe's Climate Change Vulnerability Index.

MTNHP added a digital version of the 1993 *Second Checklist of Montana Mosses* to its website. The most current checklist of Montana mosses, it is often requested by botanists around the state. http://mtnhp.org/docs/1993_Moss_Checklist.pdf

An additional 101,298 point observation records for birds were added for inclusion in the 7th Edition of the Montana Bird Distribution book series, involving collaborations between MTNHP Project Specialist Coburn Currier, Zoologists, Susan Lenard, Paul Hendricks, and Bryce Maxell, MTNHP Information Specialist Scott Blum, and colleagues Adam Petersen and Scott Story from MT Fish Wildlife and Parks (FWP).

The MTNHP observation database now includes 1,217,274 point observation records (889,136 bird records and 328,138 records of other animal species) and a total of 138,853 structured animal survey locations have been documented. An additional 80,975 observation records (mostly non bird-related) require additional review prior to final acceptance into the database. Observation records and structured surveys are viewable on the Natural Heritage Tracker <http://mtnhp.org/Tracker/NHTMap.aspx> and Natural Heritage MapViewer <http://mtnhp.org/mapviewer/> web applications and generalized observations are viewable on the Montana Field Guide <http://fieldguide.mt.gov/>

MTNHP Zoology staff reviewed and added more than 68,000 bird observations from the eBird database at the Cornell Lab of Ornithology to the animal observation database.

MTNHP staff members Scott Mincemoyer, Martin Miller, and Coburn Currier, added 80 rare plant observations to the database, approximately 150 lichen species to database and Field Guides, and several dozen new images to the Field Guides. Scott also reviewed the ranks of several dozen plant species.

MTNHP Information Services staff and Zoology staff conducted a "data gap" analysis to assess what counties and townships in Montana are missing animal observations for species that should be able to be documented in those areas.

Goal Two, Access: MSL provides libraries, agencies, and its partners and patrons with convenient, high quality, and cost-effective access to library content and services.

Michael Fashoway has been working on more efficient ways to serve imagery data to patrons through web services. Web services are available for the 2005 and 2009 NAIP imagery, and a 2011 service was developed when that data arrived. Recently Michael was able to build a single combined service containing both the 2009 and 2011 datasets. This provides users with a single access point to both years of data and increases the capacity for quick visual comparisons across the years. We will be monitoring usage of these extended capabilities as well as exploring the possibility of other imagery (including the 2005 NAIP) to this service.

In February, an updated version of the Montana GIS Portal went into production. The update consists of a new version of the geoportal tool that the Montana GIS Portal is built on, as well as a move to a new, dedicated virtual server which will allow a great level of flexibility for updating other GIS applications. As these were all backend changes, GIS Web Programmer Grant Austin and GIS Analyst Gerry Daumiller worked very hard to make this update transparent to patrons.

With the closeout of the GeoMAPP digital spatial data archiving project, staff has been working to take the lessons learned from that project and transition to an environment where inventory and archive tasks are part of the day to day work tasks of the GIS

Analysts at the library. The first steps include making more detailed guidelines for how the MSL Collection Development Policy is implemented with respect to digital spatial data, developing a process for appraising digital spatial data, refining the process for ingesting spatial data into the library collection and archive, and ultimately pushing 20 years of existing GIS data at the library through the process. GIS Analysts Diane Papineau and Gerry Daumiller have taken the lead on this project as a natural extension of the work they did on the GeoMAPP project. Additionally, the former GeoMAPP participants from around the country will establish an ongoing spatial data archiving working group within the National Digital Stewardship Alliance (NDSA) organized by the Library of Congress. MSL has been monitoring the progress of this effort and is considering joining the NDSA in order to continue to stay involved with the former GeoMAPP partners.

MTNHP released a revised mapping application for the Basin-wide Wetland Assessment of the Milk-Marias watersheds. The new interactive map application can be viewed at: <http://mtnhp.org/wetlands/assess/mm/>. Updates and new features to MTNHP's Montana Field Guide include: 1) A new photographer search feature that enables users to search for all of the photos used in the guide by any particular photographer; 2) open water classes added to the ecological Systems Field Guide (<http://fieldguide.mt.gov/displayES.aspx?id=9>); and 3) a simple "Add Observation" feature was added to the Animal Field Guide that enables users to add animal observations to the MTNHP databases while viewing the species account in the Field Guide for that particular animal (<http://mtnhp.org/observationform/>).

MTNHP Zoologist Paul Hendricks recently completed a report for the US Forest Service (USFS) entitled "A Guide to the Land Snails and Slugs of Montana". This 200+ page tome is the first-ever summary of mollusks for Montana (<http://mtnhp.org/reports/MolluscFieldGuide.pdf>).

Goal Three, Consultation and Leadership: MSL provides consultation and leadership to enable its patrons and partners to reach their goals.

MTNHP Senior Zoologist Bryce Maxell attended the Northern Rocky Mountain Grotto annual meeting for Montana cavers on Saturday March 3rd, 2012 at Lewis and Clark Caverns State Park and gave a presentation on Montana bat conservation issues and data needs, and encouraged participants to gather and report information on bat species they observe while caving. On Sunday, March 4th, Bryce worked with Kristi DuBois from FWP to show cavers what information to report while caving and how to install data loggers to help monitor temperature and relative humidity in areas where bats overwinter.

During February and March, Zoology staff answered approximately 40 requests from patrons regarding zoological information for Montana that entailed more than 30 hours of phone and email responses.

MTNHP Senior Ecologist Linda Vance was recently appointed as a faculty member in the newly-established Systems Ecology program in the Division of Biological Sciences at the University of Montana.

Scott Mincemoyer gave workshops at Carroll College for the Montana Native Plant Society on the identification of Montana plant species formerly classified in the genus *Aster*; he also gave a workshop at UM in Missoula on the clover genus (*Trifolium*).

MTNHP staff that attended a Rare Plant Conservation conference in Helena on 15-16 February (cosponsored by MTNHP) included Kyla Zaret, Karen Newlon, Neil Snow, and Scott Mincemoyer. Scott also led an all-morning session updating information on plant species of concern in Montana.

MTNHP staff members Susan Lenard and Paul Hendricks completed a report to the US Army Corps of Engineers and USFS regarding the status of bats at the Libby Dam site, which included recommendations for mitigation of bats roosting at the Visitor Center.

MTNHP Ecologist Karen Newlon gave a presentation of ongoing activities by Heritage staff concerning wetlands and riparian areas at the Montana Wetland Council meeting on January 19th at the DEQ.

MTNHP Senior Zoologist Bryce Maxell gave a presentation to the DEQ Coal Mine monitoring contractors in Billings in March at the request of DEQ to help streamline integration of data into MTNHP databases.

MTNHP Systems and Services Manager Allan Cox and Bryce Maxell gave an in-depth presentation at the Montana Forest Council Meeting in Missoula in early March. The presentation focused on services and information the MTNHP provides and how the forestry and wood products industry can make use of its information. The Forest Council is focused on helping the forest industry in Montana meet certification standards under the Sustainable Forestry Initiative.

Allan Cox also met with GIS staff of the DNRC Fire and Aviation Bureau and provided training in the use of the MTNHP Species of Concern Internet based feature map service. This information will be used in DNRC planning as well as in wild land fire response and rehab projects.

Allan Cox, as part of a grant application to the Montana Noxious Weed Trust Fund, gave a presentation about the MTNHP services to the Noxious Weed Trust Fund Board on February 29.

Susan Lenard gave a presentation entitled "Do Bats Sing?" on March 1, 2012 at the Montana Wild, the FWP Spring Meadow Nature Complex in Helena. The evening program focused on bat acoustics and how and why bats communicate. Approximately

55 members of the general public attended, including Cub Scouts and other school aged children, college students, and adults.

Susan Lenard and Bryce Maxell gave a workshop on the acoustic monitoring of bats at the Montana Chapter of the Wildlife Society Meetings on February 27th. Participants included 22 individuals from state and federal agencies, tribal governments, universities, and the biological consulting industry. Two other presentations given at the Montana Chapter of the Wildlife Society Meetings included "Bat activity in riverine stands of native plains cottonwood and naturalized Russian Olive in southeastern Montana" by Zoologists Paul Hendricks and Susan Lenard and Ecologist Linda Vance; and "Bat conservation issues and data needs given to the Montana Bat Working Group" by Senior Zoologist Bryce Maxell.

MTNHP Zoologist Dr. Paul Hendricks gave a presentation entitled "Life Near the Ground: the land snails and slugs of Montana" on February 22nd to an audience at the Montana Natural History Center in Missoula.

LIS launched Archive Montana in 2007 as a full-text searchable archive of state agency websites dating from 1996. At that time Archive Montana played a supporting role in providing access to state publications. LIS then was still making regular distributions of print state publications, however few in number, to depository libraries. Today, all state publications are born digital and very few appear in print. LIS has determined that over 95% of the print publications that it receives are already available from state agency websites. Furthermore, download statistics for the digital archive versus circulation statistics for the print publications decidedly show that users prefer digital access. In response to state agency publishing methods and user preference for digital state government information, LIS has promoted Archive Montana as the principle means for acquiring, describing, and providing permanent public access to state publications. To highlight this promotion and better describe what Archive Montana actually does, LIS, with assistance from Marketing Coordinator Sara Groves, has renamed its product to MT.GOV Connect. For the past two months LIS and MSL staff have been busy developing a new logo, tag lines, and customizable search widgets for state agency and depository library adoption on their respective websites. A marketing campaign for MT.GOV Connect begins in earnest at the annual MLA conference with a poster session and distribution of postcards. After the conference, outreach to state agencies, depository libraries, and users will highlight the following attributes of MT.GOV Connect:

- Comprehensive, immediate access to more state publications to more users;
- State agencies no longer have to spend resources and staff time submitting publications;
- Automation spares LIS staff time spent formerly on processing print publications;
- Depository libraries save time formerly spent on processing print publications and adding them to their catalog;

- Interlibrary loan requests will decline in number and will be replaced by immediate online access;
- Postage costs will drop for state agencies and LIS.

State GIS Coordinator Stu Kirkpatrick is providing staff support for the Montana Land Information Advisory Council (MLIAC) Grant Review Subcommittee. MLIA grants were due February 15th. Between February 15th and March 1st staff reviewed all the applications to verify that they met minimum requirements. After that hardcopy notebooks with the applications and scoring instructions were prepared and sent to the 8 grant reviewers and the State Librarian. A meeting to conduct the final scoring is scheduled for April 6. During this period Stu Kirkpatrick handled the general administration of the MLIA grants, primarily processing invoices from grant recipients during this reporting period.

NRIS Manager, Evan Hammer is attended the National Hydrography Dataset (NHD) Stewardship Meeting in New Orleans, LA on March 29 and 30. The NHD is a product of the USGS and NRIS is recognized as the Montana steward for this dataset. MLIAC recognizes the NHD as the Montana Hydrography Framework Layer and also recognizes NRIS as the state steward. Stewards are expected to attend the stewardship meeting to hear about activities in other states and share ongoing NHD related activity in their state. Evan was able to bring representatives from the Department of Natural Resources and Conservation (DNRC) and the Department of Environmental Quality (DEQ) to share their experiences in using the NHD for projects within their agencies.

In March Stu Kirkpatrick chaired the state agency Esri Enterprise License Agreement User's group meeting that focused on training. He also handled and filled two ELA training requests from state agencies.

With the arrival of the 2011 NAIP imagery and the constant struggle to maintain and provide access to such large datasets, MSL has developed an Imagery Survey to be circulated among the GIS Managers within Montana State Government. The goal is to have survey responses completed in early April so that the results can be presented to at the Montana Association of GIS Professionals (MAGIP) Intermountain GIS conference in mid-April. The primary goal of the survey is to determine how effective the imagery web services are and how they are used. Different types of web services are available for serving imagery data and the cost of different approaches can vary widely. Generally speaking, services to support analytical users are much more costly than services to be used as background reference datasets. This survey will be designed to help us better understand the needs of the user base to allow us to make the best use of available resources.

Stu Kirkpatrick completed versions 1 and 2 of the Montana Spatial Data Infrastructure (MSDI) FY13 work plan. Final comments are due by March 16th. The draft work plan,

as well as a draft agenda for the April 19th MSDI session at the Intermountain GIS Conference will be published for comments by March 30th.

Goal Four, Collaboration: MSL promotes partnerships and encourages collaboration among its partners and patrons so that their information needs can be met.

LIS staff recently submitted an article to be published in the Montana Library Association (MLA) Focus newsletter that brings attention to historic MLA newsletters digitized by LIS and now freely available from the MSL collection at the Internet Archive. These newsletters contain valuable MLA history.

NRIS continues to support the Montana Department of Agriculture's work to understand the systems of food production and distribution within the state. NRIS was brought into the project as part of an interagency agreement that ran through March 1, 2012.

NRIS's role in the project is to provide mapping and spatial database support and to make project products publicly available. The Department of Agriculture has been very complimentary of the contributions that NRIS has made to the project and recently extended the agreement to run through June 30, 2012.

Gerry Daumiller was asked to present an evening talk at the Montana Historical Society on March 15, 2012. The talk entitled "Online Maps from the Montana State Library" was a good opportunity to market several MSL applications and was a natural extension of the Historical Society's current special exhibit "Mapping Montana: Two Centuries of Cartography."

Diane Papineau was invited to present a lecture on locating digital spatial data at Carroll College on March 16, 2012. She has been presenting a similar lecture for a few years now and we feel that it is a valuable outreach opportunity both for informing potential patrons of our spatial data collection, as well as for staying involved with the growing GIS program at Carroll College.

GIS Analyst Erin Fashway and Stu Kirkpatrick presented a 4 hour seminar in Billings to the Montana Chapter of American Society of Farm Managers and Rural Appraisers. Over 50 appraisers learned tips and tricks for using the Cadastral Web Site and learned the basics of making their own maps in ArcGIS Online.

In partnership with Idaho State University, BMSC successfully completed an FY11 Federal Geographic Data Committee Cooperative Agreement that established a Multi-state Control Point Database and completed a business plan for development of a regional geo-positioning cooperative for Idaho and Montana.

Grant Austin attended the ESRI Developers Summit during the week of March 26, 2012. The developer's summit is held annually and in addition to extensive user presentation, technical sessions, and other exhibits tailored to GIS developers, it also provides direct access to many of the GIS Software Developers that work at ESRI.

Grant came to NRIS as a very skilled developer with limited GIS experience. This meeting, coupled with a recent desktop GIS training that he was able to attend, should fully immerse him in the world of GIS development.

Zoology staff at MTNHP created Google Groups listserv for the Montana Bat Working Group and the Montana Amphibian and Reptile Working Group to facilitate sharing of information on the status, distribution, and conservation of these species. Members of these working groups belong to a variety of state and federal agencies, tribal governments, universities, nongovernmental organizations, and private consulting firms. Initial postings to the listserves include MTNHP-authored PowerPoint overviews on the status, distribution, data needs, and conservation issues faced by these species and can be viewed at <http://mtnhp.org/animal/presentations/presentations.asp>.

Linda Vance, Neil Snow, and Darlene Patzer worked with colleagues at the USFS Region 1 office to produce a new 5-year umbrella Partnership Agreement.

MTNHP Zoology staff continues to coordinate with FWP, Montana Audubon, and the Montana Bird Records Committee on the final stages of the 7th edition of the P.D. Skaar's Montana Bird Distribution book series. More than 800,000 additional observations have been added to the central database since the 6th edition appeared in 2003.

Bryce Maxell attended DEQ's Wildlife Monitoring at Coal Mines conference in Billings on February 23rd 2012 and gave a presentation at their request to private consultants concerning best practices for integrating data they gather into the statewide animal observation databases. Bryce was also requested by FWP to attend the Long-billed Curlew Initiative Workshop in Helena on February 2nd 2012 and give a presentation on the habitat suitability models that MTNHP has created that state and federal agencies, tribal governments, and nongovernmental organizations can use to prioritize their conservation efforts.

Goal Five, Sustainable Success: MSL is a well-run organization and a sought-after employer; it is efficient and effective (measured against partner and patron outcomes), and successfully engaged in its ongoing mission.

NRIS and the BMSC continue to make progress in merging into a single organizational unit. In late January the groups consolidated weekly staff meetings which have had a major impact on the staff feeling like they are colleagues working towards common goals. Some of the first steps towards further unification of the groups relate to the public face of the group. Some time ago staff established "Montana State Library Geographic Information" and the banner/title for this group to work under. More recently, staff has targeted geoinfo@mt.gov as a common email address for reference requests of the group, and will soon begin working on a unified web presence to reside at <http://msl.mt.gov/geoinfo>. Updates to existing marketing materials will reflect these

changes and staff hopes to promote this heavily at the upcoming Intermountain GIS Conference in Mid-April.

A group led by Systems Analyst Bob Holliday and with working members Grant Austin, Duane Lund and Dave Ratz, has been established to examine the MSL ArcServer environment, document use cases, requirements and potential impediments, and report back to management in April. A similar group will be formed to examine similar issues surrounding the establishment of a common web presence for NRIS and BMSC.

MTNHP had four staff departures: Ecologist and project manager Cat McIntyre resigned from her position in February; Ecologist Maya Daurio has accepted a position in Alaska; Steve Fernandes will begin working for the MT DEQ; and temporary employee Karissa Ramstead has accepted a position with the U.S. Fish and Wildlife Service in Great Falls. MTNHP thanks these dedicated staff members for their service and wishes them well in their new professional activities.

MTNHP hired Sara Owens and Dr. John Davenport as Ecologist/Photointerpreters. Sara has extensive experience with wetlands in Arkansas and Idaho, whereas John has experience with wetlands, ecosystem restoration, and fire ecology from several states.

LIS has received a signed offer letter for the metadata/cataloger position. The new hire graduates this May 2012 with a Master of Information and Library Science (MLIS) degree and begins work on June 4th.