Updating the Biota Information System of New Mexico User Interface

A Building Block of the New Mexico Conservation Information System

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New Mexico Department of Game and Fish

OYWIM Meeting, November 4-8, Hood River, Oregon
BISON-M

- Web-based SQL Server database
- Over 6,800 species accounts
- Accounts contain information on species taxonomy, legal status, distribution, habitat associations, food habits, life history, environmental associations, and management practices
- All species accounts have a list of references, more recent references hyperlink to pdfs
BISON-M Background

• BISON-M created in early 1990’s by the Conservation Management Institute at Virginia Tech. Now housed at Natural Heritage New Mexico.

• Data from multiple, mostly taxon-specific sources integrated (Species Accounts Databases, Fish Database, Aquatic Herps Database, and Breeding Bird Survey Database).

• Database has evolved over time and undergone several big updates.
BISON-M Information Sources

- Peer-reviewed literature
- Gray literature/unpublished reports
- Museum collection records
- Data from other agencies, including Colorado Parks and Wildlife
- Biotics data from Natural Heritage New Mexico
- *Share with Wildlife research project reports
BISON-M Counterparts

- Arizona Game and Fish Species Abstracts (https://www.azgfd.com/Wildlife/NonGameManagement)
- California Department of Fish and Wildlife California’s Wildlife (https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range)
- Colorado Parks & Wildlife Species Profiles (http://cpw.state.co.us/learn/Pages/SpeciesProfiles.aspx)
- Montana Field Guide (http://fieldguide.mt.gov/)
- Texas Parks & Wildlife Fact Sheets (https://tpwd.texas.gov/huntwild/wild/species/)
- Virginia Department of Game & Inland Fisheries Wildlife Information (https://www.dgif.virginia.gov/wildlife/information/)
### Taxonomy

<table>
<thead>
<tr>
<th>Species ID</th>
<th>050185</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Coyote</td>
</tr>
<tr>
<td>Other Common Names</td>
<td>Coyote (Hispanic)</td>
</tr>
<tr>
<td>Category</td>
<td>05 Mammals</td>
</tr>
<tr>
<td>Elcode</td>
<td>AMAJAO1010</td>
</tr>
<tr>
<td>BLM Code</td>
<td>CALA</td>
</tr>
<tr>
<td>Phylum</td>
<td>Chordata</td>
</tr>
<tr>
<td>Subphylum</td>
<td>Vertebrata</td>
</tr>
<tr>
<td>Class</td>
<td>Mammalia</td>
</tr>
<tr>
<td>Subclass</td>
<td>Theria</td>
</tr>
<tr>
<td>Order</td>
<td>Carnivora</td>
</tr>
<tr>
<td>SubOrder</td>
<td>Fissipedia</td>
</tr>
<tr>
<td>Family</td>
<td>Canidae</td>
</tr>
<tr>
<td>Genus</td>
<td>Canis</td>
</tr>
<tr>
<td>Species</td>
<td>latrans</td>
</tr>
<tr>
<td>Subspecies</td>
<td>latrans; lestes; mearnsi; texensis</td>
</tr>
<tr>
<td>Authority</td>
<td>(Say)</td>
</tr>
<tr>
<td>Scientific Name</td>
<td>Canis latrans</td>
</tr>
<tr>
<td>Account Type</td>
<td>This account represents the entire species, including any and all subspecies recognized in the Southwest. There are no separate subspecies accounts relating to this species.</td>
</tr>
<tr>
<td>Taxonomic References</td>
<td>03, 05, 15, 22, 46, 57</td>
</tr>
</tbody>
</table>

### Comments on Taxonomy

NEW MEXICO Three subspecies of coyote are confirmed in New Mexico: C. I. lestes (Merriam), C. I. mearnsi (Merriam), and C. I. texensis (V. Bailey). *22*
# BISON-M New Interface: Species Accounts

## Coyote

<table>
<thead>
<tr>
<th>Summary</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Species ID</strong></td>
<td>050185</td>
</tr>
<tr>
<td><strong>Name</strong></td>
<td>Coyote</td>
</tr>
<tr>
<td><strong>Genus</strong></td>
<td>Canis</td>
</tr>
<tr>
<td><strong>Species</strong></td>
<td>latrans</td>
</tr>
<tr>
<td><strong>Synonyms</strong></td>
<td>Coyote (hispanic)</td>
</tr>
<tr>
<td><strong>Category</strong></td>
<td>05 Mammals</td>
</tr>
</tbody>
</table>
| **Species Distribution** | - AZ: Extant  
- BAJA, MEXICO: Species occurs(ed)  
- CHIHUAHUA, MEXICO: Species occurs(ed)  
- CO: Species occurs(ed)  
- MEXICO: Species occurs(ed)  
- NM: Extant  
- OK: Species occurs(ed)  
- SONORA, MEXICO: Varied  
- TX: Species occurs(ed)  
- UT: Species occurs(ed) |
| **Habitat Association** | LOWLANDS, MONTANE, RIPARIAN, TERRESTRIAL |
| **Food Habits** | INVERTEVORE-eats invertebrates  
OMNIVORE-eats plants and animals |

<table>
<thead>
<tr>
<th>Taxonomy</th>
<th>(last updated 7/26/2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal Status</td>
<td>(last updated 4/8/2018)</td>
</tr>
<tr>
<td>Species Distribution</td>
<td>(last updated 10/11/2018)</td>
</tr>
<tr>
<td>Habitat Association</td>
<td>(last updated 7/26/2018)</td>
</tr>
<tr>
<td>Food Habits</td>
<td>(last updated 4/8/2018)</td>
</tr>
<tr>
<td>Environmental Associations</td>
<td>(last updated 2/18/2016)</td>
</tr>
<tr>
<td>Life History</td>
<td>(last updated prior to 6/21/2007)</td>
</tr>
<tr>
<td>Management Practices</td>
<td>(last updated 2/8/2018)</td>
</tr>
</tbody>
</table>

References |  
|-----------|---|
Welcome to the Biota Information System of New Mexico (BISON-M). BISON was developed for biologists by The New Mexico Department of Game & Fish, and The Fish & Wildlife Information Exchange (Conservation Management Institute, VA Tech, Blacksburg, VA). Other contributing agencies include Natural Heritage New Mexico (a division of UNM’s Museum of Southwestern Biology), US Army Corps of Engineers, US Bureau of Land Management, US Bureau of Reclamation, US Fish and Wildlife Service, US Forest Service, and New Mexico State Land Office.

BISON contains accounts for all vertebrate and many invertebrate species of wildlife occurring in New Mexico and Arizona (including all threatened, endangered and sensitive species). Many accounts are incomplete although new information is being added continuously. Errors do occur. Users are cautioned to refer back to the original cited source to assess completeness and correctness before using the information.

Currently, there are four main features that are available to visitors:

1. Find a Species Booklet
   This is a basic search tool for finding species information.

2. County Lists
   This provides a list of several pre-made reports.

3. Database Query
   This is an advanced search tool that lets you search up to eight data fields.

4. Power Search
   This new search tool lets you search all of BISON-M’s data fields.

5. Share with Wildlife
   This new search tool lets you search for Share with Wildlife contracts and documents.

Depending on your account permissions, you can also view or update database information and update user profiles.
Welcome to the Biota Information System of New Mexico (BISON-M). BISON-M was developed by New Mexico Department of Game and Fish and numerous partners. BISON-M contains species accounts for all vertebrate and many invertebrate species of wildlife that occur in New Mexico. New information is continuously being added and errors do occur. Users are encouraged to refer to the original cited source to assess the completeness, correctness, and currency of the information provided in BISON-M.

Species Search  County Reports  Document Search  Contract Search

ANNOUNCEMENTS

- BISON-M Revamp
  BISON-M has a new design and search features. Please take a moment to familiarize yourself with these new features and contact Ginny Seamster (virginia.seamster@state.nm.us) with questions about functionality.

- County Reports Page
  If you are having problems downloading a species list on the County Reports page, please make sure that your internet browser isn’t blocking pop-ups for the BISON-M website.
BISON-M Previous Interface: Searches

Species search

Search a subset of fields

Search all fields
BISON-M New Interface: Species Search

Three searches combined to one

Ability to search comment text added
BISON-M Previous Interface: County Reports

County Lists

The following reports are available through BISON-M. Please select a report then click 'Run Report' to continue.

County - TES Table

Run Report

Preview Sample of Selected Report:

Report County TES Table for Lea

36 species returned.

<table>
<thead>
<tr>
<th>Taxonomic Group</th>
<th># Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reptiles</td>
<td>4</td>
</tr>
<tr>
<td>Birds</td>
<td>23</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Taxonomic Group</th>
<th># Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mammals</td>
<td>9</td>
</tr>
</tbody>
</table>

Export to Excel

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Habitat Map</th>
<th>Species Photo</th>
<th>FWS-ESA</th>
<th>NM WCA</th>
<th>FS-R3</th>
<th>BLM-NM</th>
<th>NM-Sen</th>
<th>FWS-SOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lizard, Horned, Texas</td>
<td>Phrynosoma cornutum</td>
<td>no map</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
BISON-M New Interface: County Reports

COUNTY SPECIES REPORT

Please use the interactive map or check list below to select counties of interest. Click on a county to select or de-select it. Selected counties are shown with a red outline and will also have a checkmark next to them in the county list. Check the SGEN and/or Threatened/Endangered boxes to see only those species, then select the report format you would like to view (PDF or Excel). For PDF, you can include the species photo in the report or just a link to the photo.

NOTE: To view and download county reports, please disable pop-up blocker for this website.

bison-m.org/BisonReportView.aspx
BISON-M Previous Interface:
Contract Search

Contract Search

Title (any part)

Contractor (any part)

Contract Year

$ Amount Between

And

Type (any or all)

Wildlife Research

Wildlife Education

Wildlife Rehabilitation

Habitat Enhancement

Species Name OR Taxonomic Group

Enter Any Part of Name or Group

Click GO! to Select 1 Species (Optional)

GO!

View By:  

Common Name

Scientific Name

Legal Status

Hold CTRL key and click for more than one status

Federal: Endangered

Federal: Threatened

Federal: T & E by Similar Appearance

Federal: Warranted/Precluded

Federal: Proposed

Federal: Candidate

Federal: FWS Species of Concern (no longer maintained)

Federal: FORMER Candidate (C3)

CITES Appendix I (Import & Export Permit)

CITES Appendix II (Export Permit Req.)

Search

Clear
BISON-M New Interface:
Contract and Document Search

Expanded search options for existing contract search (Share with Wildlife)

Add new search for documents associated with species accounts

bison-m.org/ContractSearch.aspx
BISON-M Previous Interface: State Map

Static map
BISON-M New Interface: State Map

Dynamic map

nmert.org/content/map
BISON-M New Interface:
Data Entry QC

Quality control of data entry to species accounts (e.g., comment revision, new codes, etc.)
Partnership

- Natural Heritage New Mexico and New Mexico Department of Game and Fish have collaborated for years to acquire, database, and analyze biological and ecological data to meet the goals of both organizations.

- The web-enabled State Wildlife Action Plan (in development) and Environmental Review Tool (recently released) are the latest in a series of tools (which include BISON-M) utilizing these data.
NM Crucial Habitat Assessment Tool
Violet-Crowned Hummingbird

Violet-crowned Hummingbird (Amazilia violiceps) is a small (11 cm) hummingbird with a red bill and white underside. They are common in Mexico, but uncommon in the northern part of their range in far southwestern New Mexico and Arizona. In the U.S., they are found primarily in woodlands near water at low to moderate elevations. They nest in sycamore and occasionally oak trees.

Ecoregions

<table>
<thead>
<tr>
<th>Name</th>
<th>Violet-crowned Hummingbird</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific Name</td>
<td>Amazilia violiceps</td>
</tr>
<tr>
<td>Category</td>
<td>S</td>
</tr>
<tr>
<td>Taxon</td>
<td>Birds</td>
</tr>
</tbody>
</table>
Need for a Conservation Information System

• Provide **comprehensive** and reliable information on New Mexico’s rich biodiversity and important areas for biota.

• Aid biological and natural resources and their conservation and management.

• Help guide economic development away from conflict with rare species.
New Mexico Conservation Information System
Explore New Mexico’s rich biodiversity

Search Sensitive Species Data
Maps Conservation Planner
Research and Publications

Learn about New Mexico’s Animals and Rare Plants

Investigate Ecological Data

Conservation Planning and Assessment Tools

State Wildlife Action Plan
Rare Plant Conservation Strategy
Environmental Review Tool
Crucial Habitat Assessment Tool

Partners
New Mexico Conservation Information System

Explore New Mexico’s Rich Biodiversity

Sensitive Species Data
Search NM CIS sensitive species data

Biota Information System of New Mexico (BISON-M) contains species accounts for all vertebrate and many invertebrate species of wildlife that occur in New Mexico.

NM Animals

The NM Rare Plants Website has species accounts for rare plants in New Mexico.

NM Rare Plants

Conservation and Natural Resource Management Tools

New Mexico Environmental Review Tool (ERT) - an interactive tool for conservation planning and New Mexico Department of Game and Fish (NMDGF) review of important resources for wildlife and habitats. The ERT provides conservation information on wildlife and habitat diversity, protected lands, and other natural resources, and allows users to submit proposed projects for review of potential impacts to species status and their habitats in New Mexico.

New Mexico’s Crucial Habitat Assessment Tool is an online planning tool that displays crucial wildlife habitat across New Mexico.

The New Mexico Rare Plant Conservation Strategy was developed to protect and conserve New Mexico’s rare and endangered plant species and their habitats and to avoid federal listing. It includes a plant conservation scorecard which provides a current conservation status analysis of the 238 Strategy rare plants including threats, degree of protection, and actions needed to conserve species.

Research and Publications
Search NM CIS publications and data references

The State Wildlife Action Plan (SWAP) is a non-regulatory planning document that provides a high level overview of the status of species and habitats in New Mexico. An interactive SWAP website is currently under development.

https://nhnm.unm.edu/data
Thank you!

• **Rayo McCollough**, Information Coordinator/Data Manager at Natural Heritage New Mexico

• **Robert Greiff**, Data Wizards Computer Consulting, LLC.

• **Dr. Chuck Hayes**, Assistant Chief for Ecological and Environmental Planning Division at New Mexico Department of Game and Fish
Questions?