



Development of the WGFD's Decision Support System

Presentation Overview

HPP – Habitat Protection Program

- Background, purpose, function

WER-GIS – “Decision Support System”

- How the system works
- Recent additions
- Future?

Habitat Protection Program history

- 1960s: Significant Statutes (e.g., NEPA)
- 1975: Environmental Services Section
- 1995: Department Restructuring, created...
- 1996: Habitat Protection Program - ESS Plus!
Oil and gas and a host of other issues

PURPOSE

Coordinate, review and analyze proposed federal, state, and local projects, plans, policies and activities with the potential to adversely impact fish or wildlife habitat in Wyoming.

Wildlife Environmental Review (WER)

Examples

- Wyoming Department of Environmental Quality Small Mine Permit (~2 months)
- Environmental Assessment for an Oil & Gas Pilot Project (~6 months)
- Environmental Impact Statement for a Resource Management Plan (4+ years)

Commenting Tools

- Guidelines Document
- Standard Recommendations
- HabProt Database
- Letters “Database”
- Newest Tool “WER-GIS”

ENVIRONMENTAL COMMENTING:
POLICIES & PROCEDURES
GUIDELINES



November 22, 1998

WYOMING GAME & FISH DEPARTMENT
OFFICE OF DIRECTOR
HABITAT PROTECTION PROGRAM

Habitat Protection Program

November 22, 1998

Standard Recommendations Document

Covers 3 main topics

- **Vegetative Resources** (e.g., riparian, grazing, burns)
- **Species-Specific Recommendations** (e.g., disease protocols, invasive/nuisance species, sage-grouse)
- **Large-Scale Developments** (e.g., oil/gas developments, mining, CBM-specific issues)

WER-GIS (aka DSS)

- **Designed by WyGISC with WGFD input**
- **Assists in centralizing data storage**
- **Simplifies the user interface of ArcGIS**
- **It is a customized application that runs “on top of” ArcMap**

What can WER-GIS do?

- **Anything that ArcMap can do**
- **Customized tools for:**
 - **View all commonly-used WGFD data**
 - **Find and zoom to township/ranges, utm coordinates, allotments, watersheds**
 - **Query and view locations from WOS database**
 - **Query and view WGFD Aquatic databases (river and lake)**
 - **WERs: view location, summarize data, add comments**
 - **Search entire WER database with links to view locations and documents**
 - **Review oil and gas lease parcels for sale (2009)**
 - **“Quickmap” option for making map layouts**

Two ways to use WER-GIS

Local (easy to use your own data with)

VERSUS

Remote Desktop to Cheyenne Server

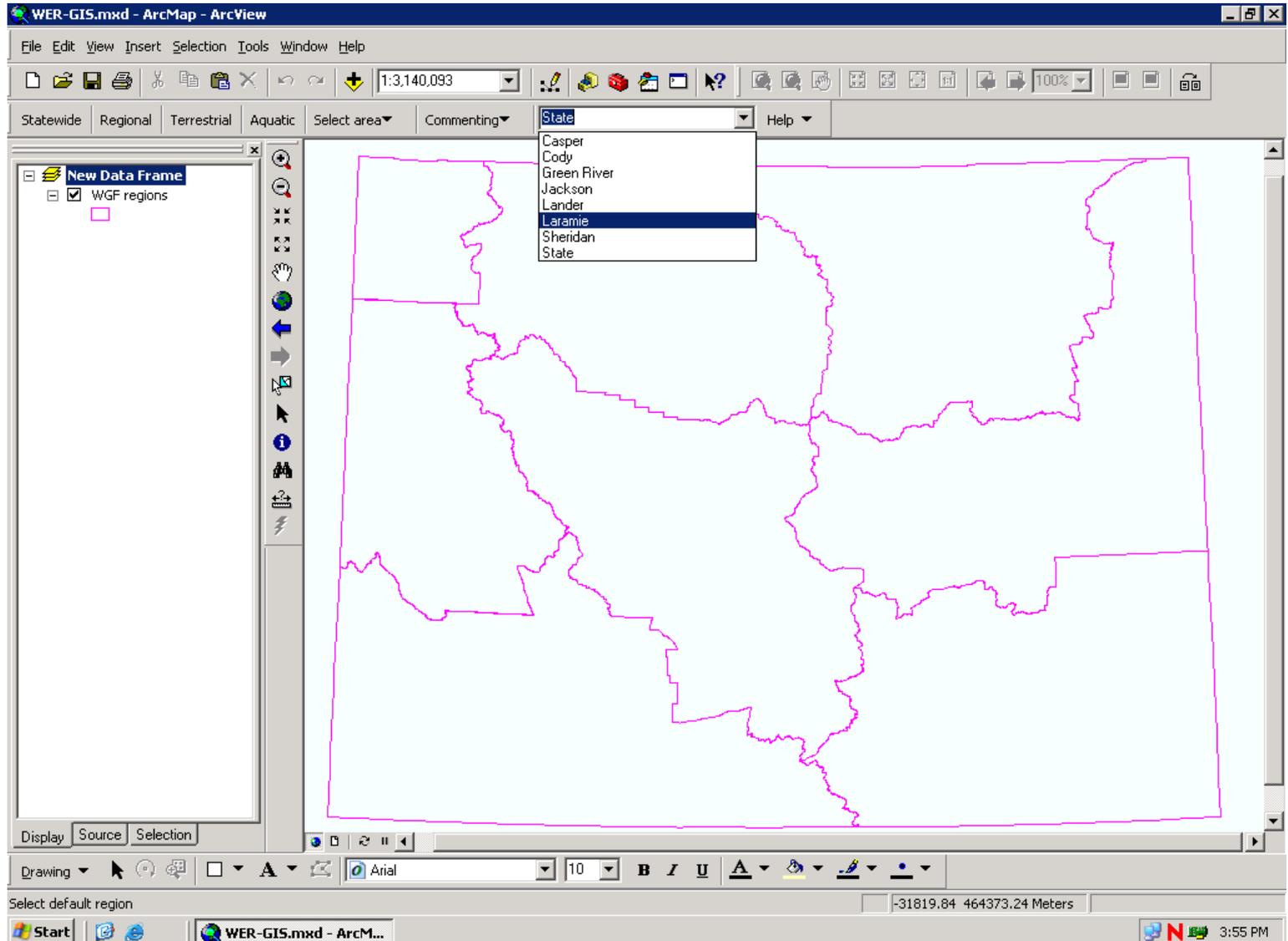
Local Version

- Installed on the “local machine” – not networked
- Data/program updates available by request
- Easy for users to use their own datasets

Remote Desktop Version

- Connect to Cheyenne server through Remote Desktop Connection
- Data are updated more often
- Access to the Habitat Protection Database for WER commenting
- New function for reviewing oil and gas lease parcels for sale
- Extra steps (via ftp) required to use your own datasets

Step I. Select your region



Step 2. Choose your task

The screenshot displays a software interface for water resource management. The top navigation bar includes tabs for 'Statewide', 'Regional', 'Terrestrial', and 'Aquatic', along with a 'Select area' dropdown menu. The current area selected is 'Lander', as indicated by the 'Commenting' dropdown and the 'Lander' dropdown menu. The 'Help/Options' dropdown menu is also visible. The main map area shows the state of Wyoming with county boundaries. The 'Lander' county is highlighted in cyan, and a context menu is open over it, listing the following tasks:

- Add WER
- Review WER
- Oil and gas lease sale review
- Search the WER database
- Set data paths

A blue arrow points to the 'Review WER' option. The 'New Data Frame' panel on the left shows the following settings:

- Aquatic management areas
- WGF regions

The map labels include Cody, Sheridan, Casper, Laramie, Lander, Pinedale, and Green River.

Step 3. Select the WER to review

WER-GIS.mxd - ArcMap - ArcView

File Edit View Insert Selection Tools Window Help

1:2,232,145

Statewide Regional Terrestrial Aquatic Select area Commenting Laramie Help

New Data Frame

- WGf regions

Review/Add Comments

Select a WER to review Select type of review View results Add comments

Double-click to select a WER: Show topographic background

WER	Received	Date due	Project
8066.03	10/14/2005	1/10/2006	Fed. Reg., Changes in Regs Governing
683	11/7/2005	1/3/2006	Fed. Reg., FERC., Bull Lake Power/Dam
729.04	12/19/2005	1/13/2006	USFS/Medicine Bow, Snowy Range Mast
11316	12/16/2005	1/6/2006	USFS-Medicine Bow-Routt, Silvicultural T

List WERs: Pending, Laramie region Sort by: Inactive

WER # Region:

Project

Location Existing review: yes or no

Quit Help Delete WER NEXT

Display Source Selection

Drawing Arial 10 B I U

Number of features selected: 4 109885.22 4752492.16 Meters

Start WER-GIS.mxd - ArcM... 9:27 AM

Step 4. Select data and radius

WER-GIS.mxd - ArcMap - ArcView

File Edit View Insert Selection Tools Window Help

Statewide Regional Terrestrial Aquatic Select area Commenting Laramie Help

New Data Frame

- WER: polygons
- WER: lines
- WER: points
- WGf regions

Review/Add Comments

Select a WER to review Select type of review View results Add comments

Select type of review:

- Terrestrial
- Aquatic

Radius of review area (minimum 10 meters):

0.25 miles meters

Check data to review: check all

<input checked="" type="checkbox"/>	Crucial ranges	2005 WGf Che
<input type="checkbox"/>	Hunt areas	2004 WGf Che
<input type="checkbox"/>	Migration routes	2004 WGf Che
<input checked="" type="checkbox"/>	Sage grouse leks	5/1/05 WGf Che
<input type="checkbox"/>	WYNDD communities	2003 WYNDD
<input type="checkbox"/>	WYNDD observations	2003 WYNDD
<input type="checkbox"/>	CRP land	2003 WGf Lare
<input type="checkbox"/>	Terrestrial priority areas	6/21/05 WGf C
<input type="checkbox"/>	WOS observations	5/1/05 WGf Che
<input checked="" type="checkbox"/>	Parturition areas	2005 WGf Che
<input type="checkbox"/>	Big game ranges/herdunits	

Run review

WER 8066.03 is in the Laramie region

Quit Help Previous Next

Display Source Selection

Drawing Arial 10 B I U

Number of features selected: 1 292442.53 4457205.89 Meters

Start WER-GIS.mxd - ArcM... 9:29 AM

Step 5. Look at summary of data

WER-GIS.mxd - ArcMap - ArcView

File Edit View Insert Selection Tools Window Help

Statewide Regional Terrestrial Aquatic Select area Commenting Laramie Help

Review/Add Comments

Select a WER to review Select type of review View results Add comments

Results

MDR Crucial ranges: 9 records found
RANGE: CRUWYL, CRUWYL, CRUWYL, CRUWYL, CRUWYL, CRUWYL, CRUWYL, CRUWYL, CRUWYL

ELK Crucial ranges: 1 records found
RANGE: CRUWIN

ANT Parturition areas:

WTD Parturition areas:

Sage grouse leks: 4 records found

177 other WERs found within radius 0.25 miles

View WER details

View WOS details

Quit Help Previous NEXT

Display Source Selection

Drawing Arial 10 B I U

Start WER-GIS.mxd - ArcM...

Option to view past WERs nearby and view their associated documents

Step 6. Add comments

Choose standard comments from database, and/or add your own

The screenshot shows a software window titled "Review/Add Comments" with a close button (X) in the top right corner. The window has a tabbed interface with four tabs: "Select a WER to review", "Select type of review", "View results", and "Add comments". The "Add comments" tab is active.

Inside the window, there are two columns of instructions:

- 1. Choose a standard comment category:
- 2. Choose a sub-category:
- 3. Double-click on a row to select the comment

Below the instructions are two dropdown menus. The first dropdown is labeled "Highway Projects" and the second is labeled "General Highway Comments".

Below the dropdowns is a list of comment options. The fourth option is highlighted in blue:

- 1. Any wetland impacted by this project must be restored to pre project cor
- 2. This project should be evaluated by State and Federal wildlife agencies fo
- 3. If road realignment is required, the new route must be searched for prair
- 4. The proposed project affects (e.g. mule deer) crucial winter range. The f
- 5. Width of borrow pit areas should be identified during the planning stage f
- 1. This project is located in (e.g. winter yearlong antelope) habitat. _ (e.g. .

Below the list is a "Comment box:" label and a text area. The text area contains the following text:

Highway Projects General Highway Comments
4. The proposed project affects (e.g. mule deer) crucial winter range. The Department is concerned that disturbance and/or displacement to wintering wildlife will result due to increased activity. We recommend that construction be terminated between November 1 and April 30.

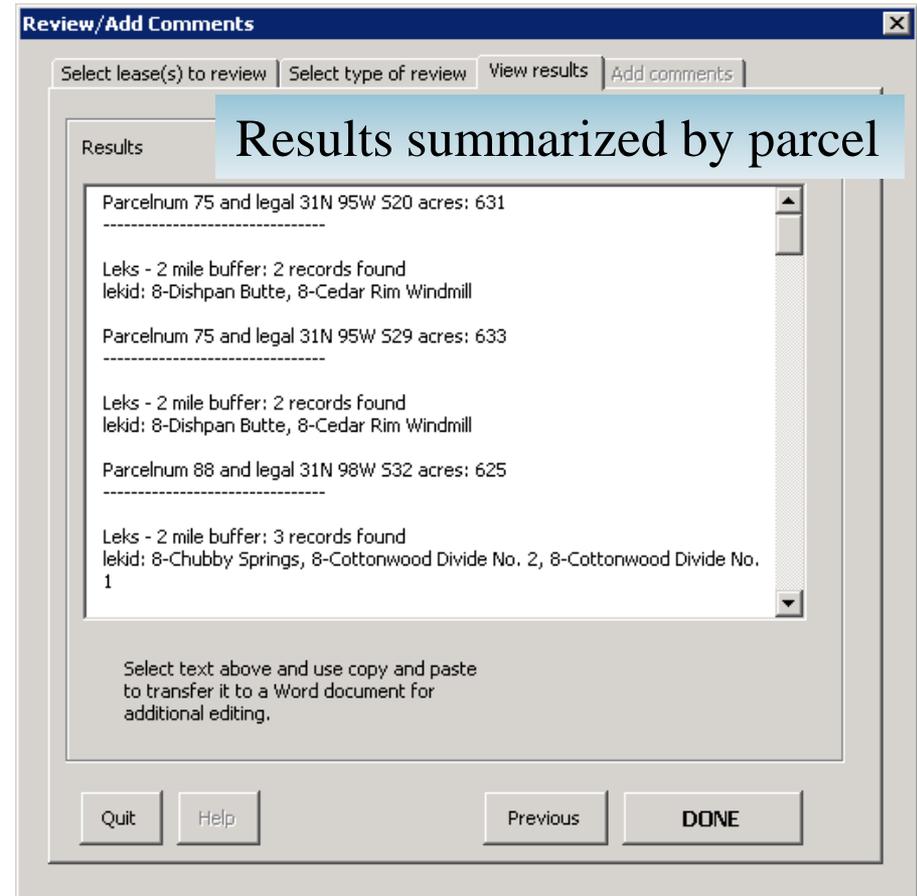
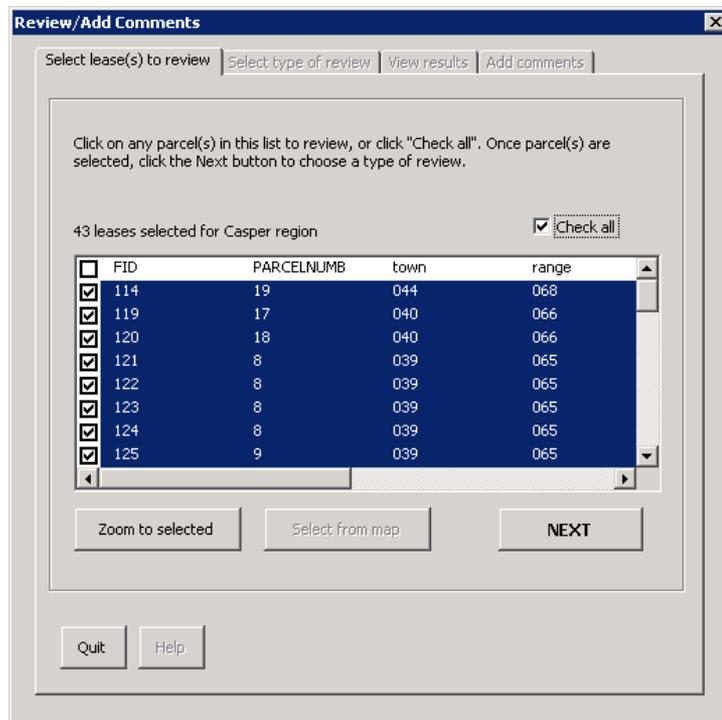
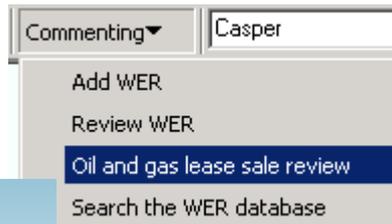
At the bottom of the window are several buttons: "Quit", "Help", "Hide", "Previous", and "FINISH".

Step 7. Complete the Review

- Copy and paste results from Remote Desktop to Word on your own computer
- Edit the results
- Add a map created in WER-GIS to your review if it helps explain comments

New in 2009: review oil and gas lease parcels for sale

Choose which lease(s) to review, then choose which data you want summarized



WER-GIS data list - terrestrial

Review/Add Comments

Select a WER to review | Select type of review | View results | Add comments

Select type of review:

- Terrestrial
- Aquatic

Radius of review area (minimum 10 meters):

1 miles meters

append to existing results
 clear existing results

Run review

Check data to review: check all

- Crucial ranges
- Hunt areas
- Migration routes
- Sage grouse leks & observations
- Terrestrial priority areas
- WOS observations
- Parturition areas
- Big game ranges/herdunits
- Nongame Priority Areas
- Nongame Priority Areas (Rivers)
- Species Greatest Cons. Need (NS51-3)
- Sage Grouse Core Areas ver2
- Leks - 2 mile buffer
- Leks - quarter mile buffer
- Species Greatest Cons. Need (all)

WER 11909 is in the Sheridan, Cody, Sheridan region

Quit | Help | Hide | Previous | Next

WER-GIS data list - aquatic

The screenshot shows a software window titled "Review/Add Comments" with a close button in the top right corner. The window has a tabbed interface with four tabs: "Select a WER to review", "Select type of review", "View results", and "Add comments". The "Select type of review" tab is active.

Under "Select type of review:", there are two radio buttons: "Terrestrial" (unchecked) and "Aquatic" (checked and highlighted with a red box).

Below this, there is a section for "Radius of review area (minimum 10 meters):" with a text input field containing the number "1" and two radio buttons: "miles" (selected) and "meters" (unchecked).

At the bottom left of this section is a "Run review" button.

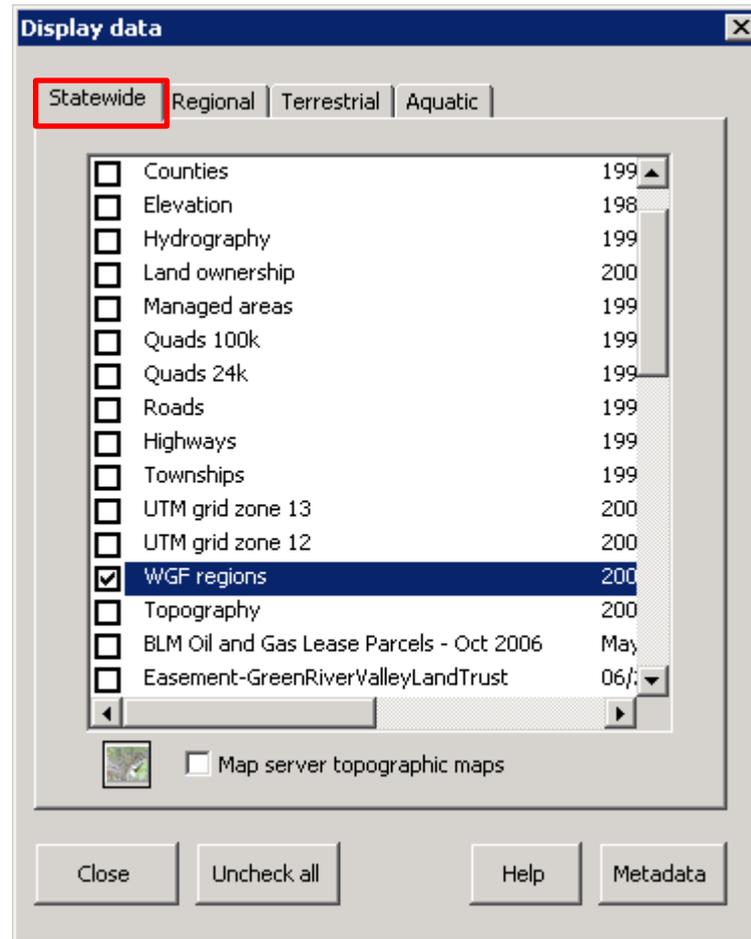
On the right side, under "Check data to review:", there is a "check all" checkbox (unchecked) and a list of items with checkboxes:

- Aquatic: Stream name, class, fish species present
- Aquatic priority areas
- Reach samples
- Lake samples
- All streams
-

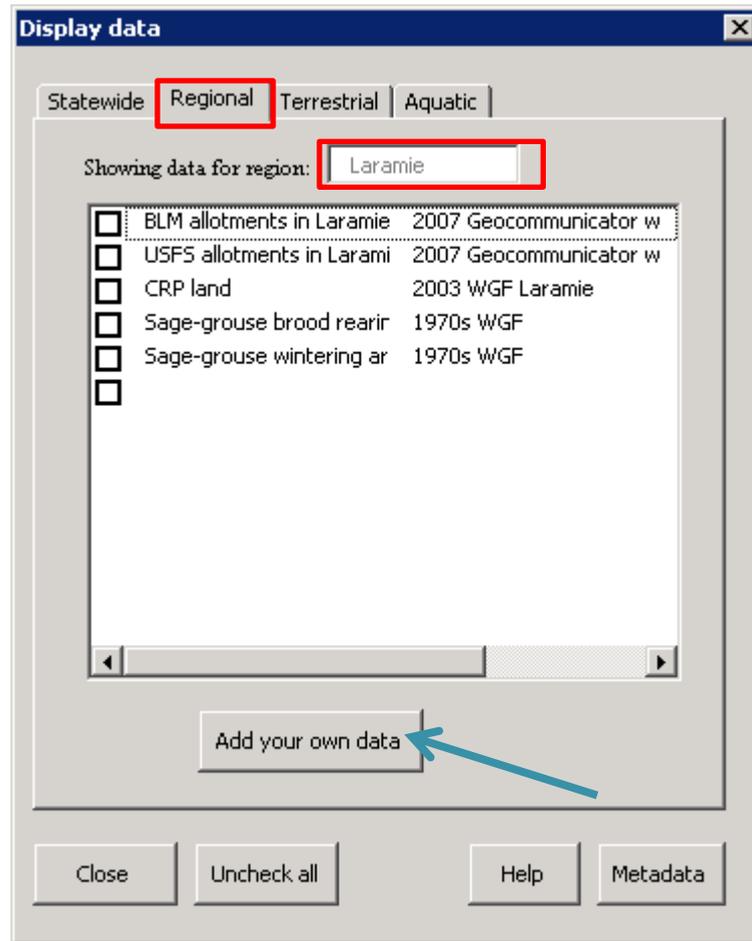
At the bottom of the window, there are five buttons: "Quit", "Help", "Hide", "Previous", and "Next".

At the very bottom of the window, the text "WER 11907 is in the Lander region" is displayed.

WER-GIS data list - statewide



WER-GIS data list - regional



Tool for WOS database

Find a species

Species **Activity code** | Observation date

Choose a grouping of species: **raptor**

- raptor
- predator
- biggame
- smallgame
- trophy
- furbearer
- upland
- migratory

OR

Type in all or part of a species name:

Common Scientific

Find Begins with

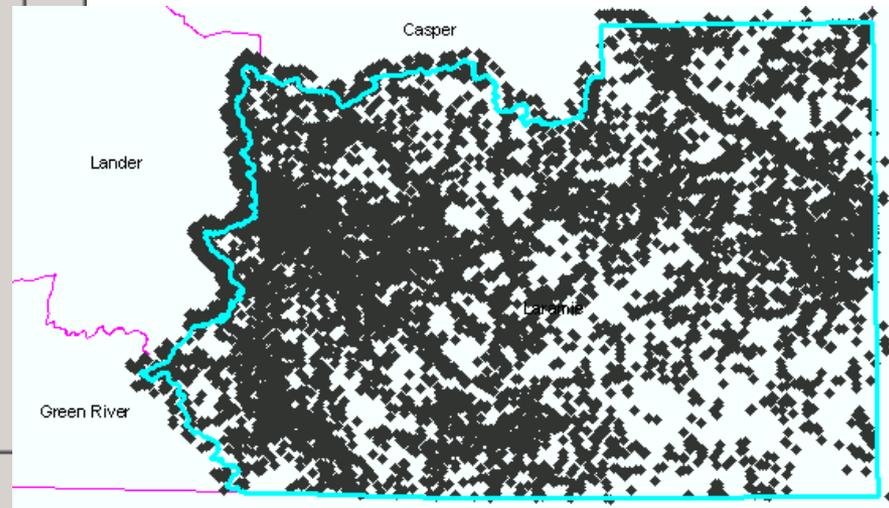
13788 records selected for raptor group

Select all species in list

Show selected species

Help Clear all WOS layers Hide Close Next

Choose records by observation dates and/or activity code



Choose an individual species or a group of species

Tools for Aquatic databases

Stream reaches

1. Select a stream reach table: StreamLakeSpeciesPresent

2. Select a stream reach field: strSpeciesID

3. Select value(s):

- PTM, Plains Topminnow
- RBT, Rainbow Trout
- BNT, Brown Trout
- CKC, Creek Chub
- CRP, Carp
- FHM, Fathead Minnow
- LND, Longnose Dace
- LNS, Longnose Sucker
- STR, Central Stoneroller**
- WHS, White Sucker
- BKT, Brook Trout
- BKT, Brook Trout

4. Show streams matching the selected value(s)

Show

Hide

Help

Close

Includes only the streams found within the current extent

Map labels: CREEK, SOUTHFK, BEAR CREEK, DATER CREEK, CURTY RUN, TRAIL CREEK

Select database table, choose value, display results on map.

Example: in this particular area, the Central Stoneroller is only found in Bear Creek (highlighted stream)

Select stream(s) or lake/reservoir to view its map location, with links to fish survey and other database information

Find stream or lake by name

611 streams found in selected area of Laramie

Streams Lakes

Current extent

Entire region

Selected subset

Stream/lake name

Water-id

Type in all or part of a name (optional):

Find

Beginning with

Zoom to selected stream(s) or lake(s)

Zoom to tributaries of selected stream(s)

View River Database for selected stream(s)

Help Close

Search results:

- ANTELOPE CREEK
- ANTELOPE CREEK, NORTH FOR
- ARAPAHO CREEK
- ARNOLD DRAIN DITCH
- ARRASTRE CREEK
- ASHLEY CREEK
- AUSTIN CREEK
- AYER'S DRAIN DITCH
- BADGER BRANCH
- BADGER CREEK
- BANNER CREEK, NORTH
- BAR-M CREEK
- BARCLUS CREEK
- BARRETT CREEK
- BARRETT CREEK, NORTH
- BEAN CREEK
- BEAR CREEK**
- BEAR CREEK, LITTLE
- BEAR CREEK, NORTH

Quick Map

Statewide Regional Terrestrial Aquatic Select area▼ Comme

Quick Map

Click to select a map template:

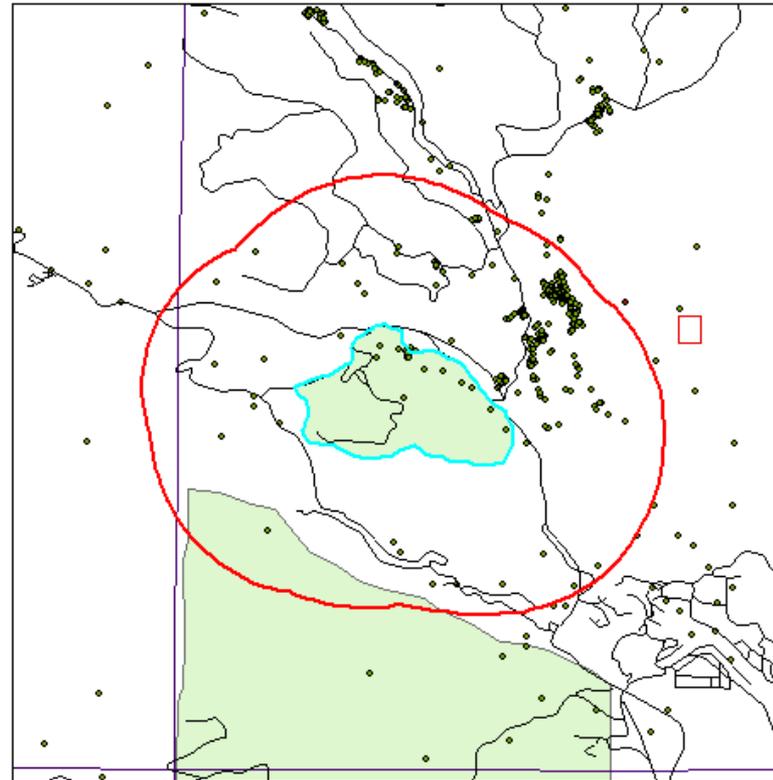
D:\dss\templates\landscape8x11.mxt
D:\dss\templates\portrait11x8.mxt
D:\dss\templates\portrait44x34.mxt

Help

Close

Make map

Double-click to add title



Legend

- TR WOS observations
- WERs by townships

□ WGF regions



0 0.2 0.4 0.8 1.2 1.6 Miles

The Future of the DSS

- Migration to ArcServer platform
- How can WER-GIS better serve biologist's needs?
- May 2009 survey sent to biologists