



Fish and Wildlife Management Information System (FWMIS)

Loadform Data Submission Guide

Alberta Environment and Protected Areas



The Government of Alberta's Fish & Wildlife Management Information System (FWMIS) supports the conservation and management of Alberta's wild species and their habitat by providing a standardized data collection, storage, and retrieval system. With a central repository for fisheries and wildlife data, government staff, industry, and the public can access extensive data for fisheries and wildlife management.

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Before You Begin

Collected data are to be entered into a Fisheries and Wildlife Management Information System (FWMIS) loadform (Microsoft Excel workbook) according to the type of survey conducted. Select an appropriate FWMIS loadform based on your sampling methodology (Fish, Aquatic Habitat, and/or Wildlife surveys).

The FWMIS Microsoft EXCEL loadforms can be downloaded from the website:

- Wildlife: <https://www.alberta.ca/wildlife-loadforms>
- Fish and Fish Habitat: <https://www.alberta.ca/fisheries-loadforms>

The Fish & Wildlife Management Information System (FWMIS) 'reads' the EXCEL loadforms directly. Therefore, the input must conform to certain database rules:

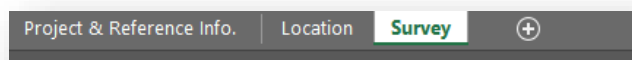
- Loadforms are provided to capture data by survey type and are designed to capture relevant information pertaining to the survey, survey location, counts, and individuals.
- It is important not to manipulate these loadforms (e.g., delete columns, change headings, change formats etc.).
- It is important not to have blank rows in the loadforms (blank columns are acceptable). FWMIS reads the data until it encounters a blank row, then will stop. All subsequent data following a blank row will not be loaded into the database.
- Drop-down menus are indicated by a small arrow on the side of the cell. Only the available choices in the drop-down menus can be used as these are coded into the loading program.
- Help comments can be found embedded within the loadforms by rolling your cursor over the red triangles in the upper right corner of the field names.
- If there are fields that do not apply to your survey, they do not have to be filled in. However, grey fields are mandatory for all submissions. It is acceptable to hide columns that are not used.

Loadform Worksheets

Fish, aquatic habitat, and wildlife loadforms all contain the 'Project & Reference Info.', 'Location', and 'Survey' worksheets. To simplify data entry, the 'Survey' worksheet in the Fish Loadform (ep-fwmis-fisheries-loadform.xlsx) has been replaced by specific fisheries survey types (see below).

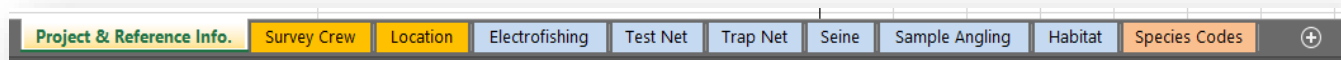
Wildlife Loadforms (all)

Users enter data on the 'Survey' worksheet, and the specific survey type is selected in column 'A'



Fisheries Loadform (ep-fwmis-fisheries-loadform.xlsx)

Users enter data based on the specific survey type. Data entry can be made to all or some of the worksheets provided, by project.



Project & Reference Info Worksheet

The name and description of the project is entered in the "Project & Reference Info" worksheet. All Fish, Aquatic Habitat, and Wildlife loadforms contain this worksheet.

- **Project Name** – Enter a brief name including type of survey, location, and a year.
- **Project Description** – Enter a brief summary of one or two sentences including the who, what, where, when, how, and why of the project

	A	B
1	Project	Last Revision: June 2022
2	* Roll over red triangles in upper-right hand corner of field for more information regarding data entry for that field.	
3	Project Name	Project Description
4	Fisheries Survey on Clear Creek, July 2023.	XYZ Resources Company conducted electrofishing and trapnetting in association with a proposed pipeline crossing on Clear Creek, Alberta. FRL23-0001. Samplers: Alfred Perry, and Paul Buds.
5		
6		
7	Research Licence Number:	23-0001-FR

Location Worksheet

The 'Location' worksheet is available to use in all loadforms. The Location sheet can be used to minimize and streamline data entry when locations are referenced multiple times. For example, for a project where numerous surveys are conducted at a single location (i.e. Testnet), that location need only be entered once on the Location sheet. Location numbers (Column A), then referenced by this Location number on all the other survey sheets as many times as required. Locations do not have to be duplicated on the survey sheets. Refer to the Location and Testnet Survey sheets on the FWMIS Fisheries Loadform with Example Data.

Slight variations in field order exist between fisheries and wildlife loadforms, but all location information can be recorded here. This worksheet may be hidden (unhide) in some wildlife loadforms.

	A	C	D	E	F	G	H	I	J	K	L	M
1	Project Location - Locations are entered EITHER on this sheet OR on the survey sheets, but not both. Mandatory fields in grey. - Do not delete this sheet											
2	Locations can be entered <u>once</u> on the Location sheet, provided a Location #, then referenced by this Location # on all other survey sheets as many times as required, such that the location data (coordinates, ref meridians, etc.) does not have to be re-entered. This is optional.							Start Point				
3	Location #	Waterbody ID	Waterbody Official Name	Location Type	Measurement Source	Datum	Precision (m)	Latitude	Longitude	UTM/TTM Easting	UTM/TTM Northing	UTM/TTM Ref Meridian
4												
5												
6												

Survey Worksheet(s)

The figures below show the main headings of sections in row 1, with many of the fields pertaining to each section hidden for display purposes.

Wildlife Loadforms:

	A	T	BB	BR	GL	GT
1	Survey Project	Project Location	Count Sample	Individual Sample	Habitat Sample	Feature Sample
2	Mandatory fields are grey.					
7						
8						
9						
10						

Fisheries Loadforms:

	A	U	AL	AX
1	Survey Project	Project Location	Count Sample	Individual Sample (record measured individuals only)
2			Counts and individuals are two separate sections and are NOT entered twice. Either enter as a count or measured individual, not both.	

- **Survey Project** – Enter survey type, start and end dates, and other parameters related to the survey.
- **Project Location** – Location information is mandatory for all surveys. Users enter location number, location type, coordinates (various formats accepted), waterbody information (if known), and location comments if collected. As mentioned, users can use the 'Location' worksheet to list all locations once.
- **Count Sample** - Enter counts of individual animals seen or heard, but not measured.
- **Individual Sample** - Enter individuals that are measured and/or tagged/collared/banded, etc. Each row should represent one individual.
- **Habitat Sample** - Enter habitat information if collected. Due to the large number of fish habitat parameters, please enter habitat data separately on the 'HABITAT' survey sheet found in the FWMIS fisheries loadform.
- **Feature Sample** - Enter information regarding observed features such as burrows, scat, tracks, etc.

Comment fields are available for each section. Add any comments that will provide context and additional information.

Survey Project Section

The Survey Project Section contains information related to a survey. Survey lines only need to be entered once for a single survey and they do not need to be repeated (per count or individual sample). The survey information in this row is called a 'parent line', and count or individual samples are considered 'child line(s)' to the survey. A Survey line includes:

- **Survey Type** (e.g., Area search, Electrofishing, etc.)
- **Start Date** and **End Date** of the entire survey
- **Survey Parameter** fields specific to that methodology
- **Survey Comment** field

- **First and last name(s) of the Surveyor(s)** - The surveyors are listed as part of the survey line and are associated with all observations linked to that survey line. Fisheries – enter samplers on Project Description sheet or Survey Crew sheet.

A survey line (yellow rows 5 and 10 in below image) only needs to be entered once per survey; it is not necessary to repeat on every row if the information is identical to the row above. FWMIS associates all the data in rows following the survey line with the information in that survey line.

	A	B	C	L	N	S	U	V	W	AA	AB	AC	BA	BB	BD	BE	
1	Survey Project				Survey Crew	Project Location (Only one of three types of location is required - lat/longs, UTM, or ATS. Lat/longs or UTM)										Count Sample (record counts of species observed or heard)	
2	Mandatory fields are grey.																
3	Survey Type Code	Start Date (DD-MMM-YYYY)	End Date (DD-MMM-YYYY)	Survey Comments	Surveyor Name(s)	Location Type	Measurement Source	Datum	Precision (m)	UTM/TTM Easting	UTM/TTM Northing	UTM/TTM Ref Meridian	Sample #	Sample Start Date (DD-MMM-YYYY)	Species Code	Count	
5	Area Search	21-Mar-2023	22-Mar-2023	Windy	Roger Smith	Site - SITE	GPS Specified -GPS	NAD 83 - NAD 83	400	457213.00	5782225.00	-111 (Zone 12) -1	1	21-Mar-2023	AMERICAN COOT -AMCO	8	
6					Al Perry	Site - SITE	GPS Specified -GPS	NAD 83 - NAD 83	400	457252.00	5782249.00	-111 (Zone 12) -2	2	21-Mar-2023	AMERICAN COOT -AMCO	5	
7						Site - SITE	GPS Specified -GPS	NAD 83 - NAD 83	400	457115.00	5782233.00	-111 (Zone 12) -3	3	21-Mar-2023	RED-NECKED GREBE -RNGR	2	
8						Site - SITE	GPS Specified -GPS	NAD 83 - NAD 83	400	457200.00	5782200.00	-111 (Zone 12) -4	4	21-Mar-2023	RED-NECKED GREBE -RNGR	6	
9						Site - SITE	GPS Specified -GPS	NAD 83 - NAD 83	400	457220.00	5782350.00	-111 (Zone 12) -5	5	21-Mar-2023	RED-NECKED GREBE -RNGR	6	
10	Area Search	20-Apr-2023	21-Apr-2023	Clear Skies	Sue Jones	Site - SITE	GPS Specified -GPS	NAD 83 - NAD 83	400	457190.00	5782220.00	-111 (Zone 12) -1	1	20-Apr-2023	HORNED LARK -HOLA	10	
11					Roger Smith	Site - SITE	GPS Specified -GPS	NAD 83 - NAD 83	400	457301.00	5782257.00	-111 (Zone 12) -2	2	20-Apr-2023	AMERICAN CROW -AMCR	5	
12						Site - SITE	GPS Specified -GPS	NAD 83 - NAD 83	400	457315.00	5782288.00	-111 (Zone 12) -3	3	20-Apr-2023	AMERICAN KESTREL -AMKE	2	
13						Site - SITE	GPS Specified -GPS	NAD 83 - NAD 83	400	457201.00	5782290.00	-111 (Zone 12) -4	4	20-Apr-2023	HORNED LARK -HOLA	3	
14						Site - SITE	GPS Specified -GPS	NAD 83 - NAD 83	400	457245.00	5782255.00	-111 (Zone 12) -5	5	20-Apr-2023	COMMON TERN -COTE	8	
15						Site - SITE	GPS Specified -GPS	NAD 83 - NAD 83	400	457256.00	5782284.00	-111 (Zone 12) -6	6	20-Apr-2023	ALDER FLYCATCHER -ALFL	5	

Project Location Section

FWMIS is "location based", therefore accurate locations are a fundamental and a mandatory element. FWMIS associates all the data in rows on the same row with that location. If no location is entered for a survey, FWMIS will associate all data with the most previously entered location on the sheet.

- **Location Type** - Specify this location as a SITE (single point), or a BLOCK (area or township), or a TRANSECT (start and end points). Fisheries surveys use SITE for all locations, even if a start/end location is provided.
- **Measurement Source** - Specify as either GPS or DERIVED from another source such as a map or Alberta Township System (ATS).
- **Datum (NAD83)** - A datum defines how a coordinate system is positioned over the Earth. The origin of the NAD83 system is different than the older NAD27 system, resulting in the same coordinates representing different locations. FWMIS will only accept NAD83.
- **Precision** - Precision is a qualifier of the correctness, estimate of error of the location. For example, heavy tree canopy caused GPS reading to be poor and therefore location precision is +/- 150 m.
- **Start/End points** – Users have the option to provide both start and/or end set of coordinates. Users can submit location information in latitude/longitude, Universal Transverse Mercator (specify UTM zone), Ten (10-degree) Transverse Mercator (TTM), or by Alberta Township System (ATS). See example below.
 - End Point fields might be hidden (un-hide) if collected and you wish to submit this information.

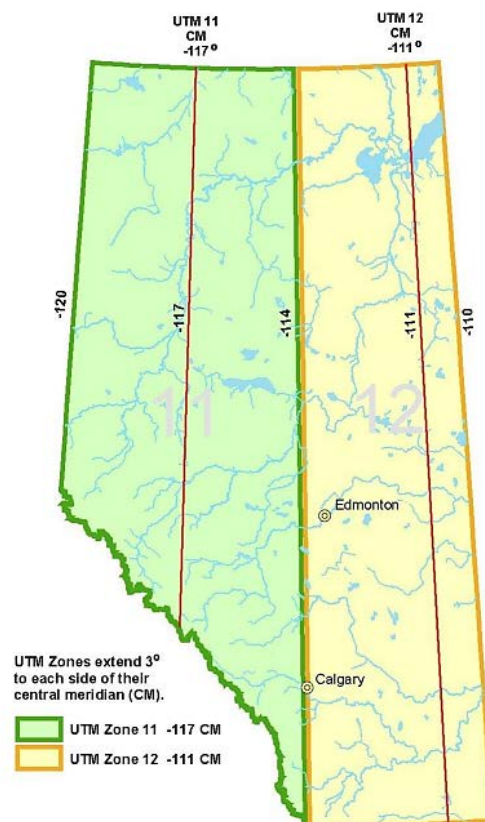
- **Latitude/Longitude** - Latitude and longitude should be in decimal degrees to 6 decimal places. Data collected in degrees-minutes-seconds should be converted as follows:

Degrees + (minutes/60) + (seconds/3600) = Decimal Degrees (dd)

Example: 57° 12' 35.2" -> 57 + (12/60) + (35.2/3600) = 57.209778

Longitude is always negative in Alberta (between -110 and -120).

- **UTM/TTM Easting/Northing** - Please use the NAD83 coordinate system when specifying TM coordinates.
- **UTM Reference (Central) Meridian** - The UTM system divides the earth into 60 zones of 6 degrees longitude each. Alberta is divided into 2 zones with locations to the east in Zone 12 and locations in the west in Zone 11. The UTM reference meridians central to these zones are -'-111' for Zone 12 and -'-117' for Zone 11.
- **TTM Reference (Central) Meridian**. There is only one TTM zone covering the entire province, the central meridian will always be -'-115'.
- **ATS fields** - Alberta Township System (ATS) for wildlife surveys only



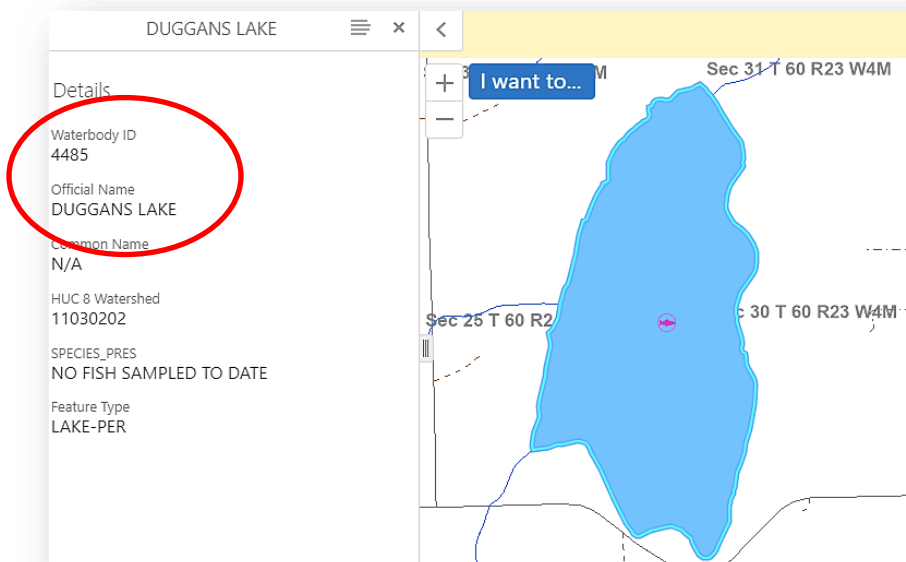
Example of various combinations of location type(s) entered. Users can enter one or various types of coordinates for different survey locations.

	S	U	V	Y	Z	AA	AB	AC	AE	AF	AG	AH	AI
1	Project Location (Only one of three types of location is required - lat/longs, UTM's, or ATS. Lat/longs or UTM's are preferred.)												
2	Start Point (End Point fields are hidden)												
3	Location Type	Measurement Source	Datum	Latitude	Longitude	UTM/TTM Easting	UTM/TTM Northing	UTM/TTM Ref Meridian	ATS Quarter	ATS Section	ATS Township	ATS Range	ATS Meridian
5	Site -SITE	GPS Specified -GPS	NAD 83 -NAD 83			457213.00	5782225.00	-117 (Zone 11) -117					
6	Site -SITE	GPS Specified -GPS	NAD 83 -NAD 83			457252.00	5782249.00	-117 (Zone 11) -117					
7	Site -SITE	GPS Specified -GPS		52.345663	-113.679654								
8	Site -SITE	GPS Specified -GPS		52.345440	-113.679455								
9	Block -BLOCK	Derived -DERIVED							SW -SW	23	37	12	4-4
10	Block -BLOCK	Derived -DERIVED							SW -SW	23	37	12	4-4

- **FWMIS Waterbody ID (WBID and Waterbody Official Name)** – Fish and fish habitat survey information is tied to a unique ID for surveys conducted in both lentic and lotic waterbodies. This is a required field for wildlife or fish surveys conducted in or on water. If the survey was conducted on an unmapped waterbody, this is left *blank*, and Official Name is *Unnamed*). There are several on-line mapping resources available to help identify the FWMIS WBID and Waterbody Official Name. Consult the following web map products available:

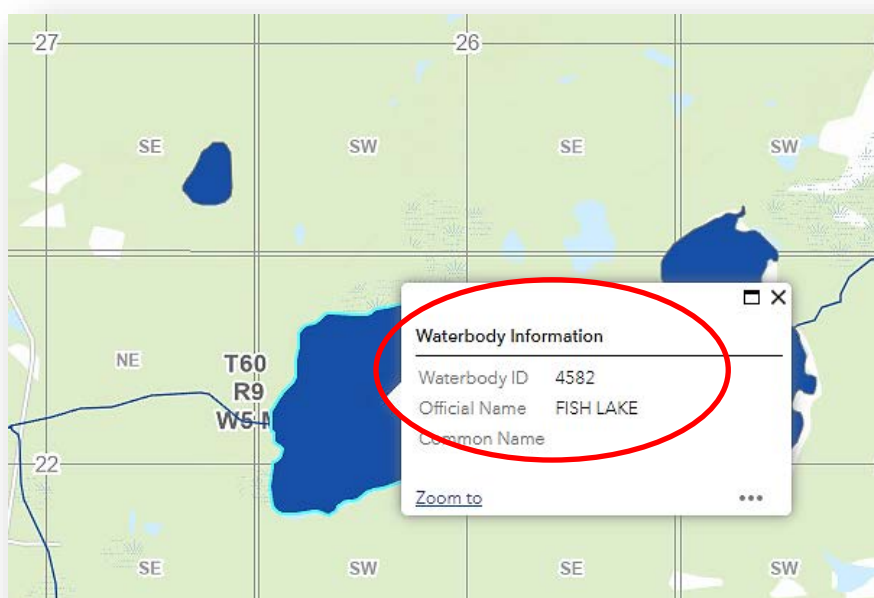
https://geospatial.alberta.ca/FWIMT_Pub/?TermsOfUseRequired=true&Viewer=FWIMT_Pub

Users can zoom to the desired location, select the waterbody using the 'point identify' button under the 'Getting Around' tab. Alternatively, users can plot coordinates under 'Go to Location' tab | Plot Coordinates (various formats are accepted).



<https://geospatial.alberta.ca/portal/apps/webappviewer/index.html?id=aac193886cf7474aafc17c1f1c031b>

Users can zoom to the desired location, select the waterbody, and identify the WBID in the pop-up window. Alternatively, users can use the 'Coordinate Conversion' Tool (xyz tool), and plot (add point) coordinates in decimal degrees; select the waterbody and identify the WBID (for both lentic and lotic).



Count and Individual Sample Sections

The Count Sample section is used when doing counts of populations. The Individual Sample section is used when detailing measurement information related to individuals, this includes tag, band, or collared individuals. Most of the fields for these two sections are similar. To avoid repetition, only the Count Sample section fields will be described.

- **Sample #** - Optional field for surveyor assigned sample numbers, i.e., envelope numbers, etc.
- **Sample Start Date** - Observation date, must be between the Survey Start Date and the Survey End Date.
- **Species Code** - Designate the species by the 4-letter Species Code in the drop-down menu. Refer to the Species Codes reference sheet within the loadform.
- **Count (Wildlife)** - The number of individuals observed or heard. Alternatively, use the 'Abundance Code' field for estimating counts.

BA	BB	BC	BD	BE	BF	BG	BH	BJ	BK	BL	BM
Count Sample (record counts of species observed or heard)											
Sample #	Sample Start Date (DD-MMM-YYYY)	Sample End Date (DD-MMM-YYYY)	Species Code	Count	Or Abundance Code	Age Code	Gender Code	Health Code	Cause Of Death Code	Confidence Level Code	Evidence of Sample Code
1	21-Mar-2023	21-Mar-2023	AMERICAN COOT -AMCO	3		After Second Year	M			Confirmed Occurrence -CONFIRM	Observed -OBSERVED
2	21-Mar-2023	21-Mar-2023	GRAY JAY -GRJA		1-20 -CODE1		U			Confirmed Occurrence -CONFIRM	Heard -HEARD
3	21-Mar-2023	21-Mar-2023	RED-NECKED GREBE -RNGR	2		All life stages -ALL	F			Confirmed Occurrence -CONFIRM	Observed -OBSERVED
4	21-Mar-2023	21-Mar-2023	AMERICAN CROW -AMCR		21-50 -CODE2	All life stages -ALL	U			Probable Occurrence -PROBABLE	Heard -HEARD

- **Count (Fisheries)** - The number of fish captured (unmeasured) which are not recorded as individuals (measured). Please place estimated ranges in the 'Abundance Code' field.

AM	AN	AO	AP	AR	AS	AT	AX	AY	AZ	BA	BB
Count Sample (record counts only, not measured individuals)							Individual Sample (record measured individuals only)				
							Individuals entered in this yellow section. A fish is entered either as a count (green section) or an individual (yellow section).				
Sample Start Date (DD- MMM-YYYY)	Sample End Date (DD- MMM-YYYY)	Species Code	Captured Count	Life Stage	Sex	Health Code	Sample #	Sample Start Date (DD- MMM-YYYY)	Sample End Date (DD- MMM-YYYY)	Species Code	Life Stage
21-Mar-2023	21-Mar-2023	PRICKLY SCULPIN -PRSC	3	Adult/Mature -A	U	Alive and Well -ALIVE	1	21-Mar-2023	21-Mar-2023	ARCTIC GRAYLING -ARGR	Adult/Mature -A
							2	21-Mar-2023	21-Mar-2023	MOUNTAIN WHITEFISH -MNWH	Adult/Mature -A

- **Age Code/Life Stage** - The age category of the species, select from drop-down menu.
- **Sex Code** - Specify 'M' for male, 'F' for female, or 'U' for unknown, select from drop-down menu.
- **Health Code** - Will default to 'Alive and Well' if left blank.
- **Cause of Death Code** - If the Health Code is 'Dead', specify cause of death. Select 'Legal Harvest' for most sampling, unless another code is more applicable.

- **Confidence Level (Wildlife)** - Characterizes the quality of the observation.
- **Evidence of Sample (Wildlife)** - Identify if species was 'Heard' or 'Observed'.
- **Tagging data (hardware only)** – Tagging fields are hidden at the end of the Individual Sample section. Ensure all current and previous (if known) tag number, color, and tag type information is entered, including 'Initial Capture', 'Y' for first capture and tag, and 'N' for recaptured individuals. For individuals with “clipped” body parts, do not use the hardware section, select the appropriate body part by using the provided drop-down menu.

Habitat Sample Section

Habitat parameters collected in association with any other survey methodology or specifically for a habitat assessment are recorded in this section and are in association with the location which is on the same row. Habitat parameters do NOT have to be associated with the species entered on the same row in the Count or Individual sections but is associated with the survey and location.

Fisheries – enter habitat data separately on the 'Habitat' worksheet.

Feature Sample Section

Features are stationary signs representing a species use or existence, i.e., tracks, nests, leks, redd, etc. These are not species observations, although all features are associated with a species. Features can be entered into the loadform and are in association with the location which is on the same row. Features do NOT have to be associated with species entered on the same row in the Count or Individual Sections. Features could be observed on a different date than the species recorded at this location therefore have their own date field.

Reference Documents

FWMIS also stores images, videos, and documents. Submit any image, video, or report in a digital format. Images and supplemental reports provide context and enhances the data collected. Reference information can be directly tied to an inventory project/survey.

QA/QC the FWMIS Loadform

Common formatting errors can be checked using the FWMIS Loadform Check Tool:

<https://www.alberta.ca/fwmis-loadform-check-tool>

This tool scans loadforms for common formatting issues and completeness and provides the row and column information on where to find them within the form. The tool does not scan for data accuracy. Ensuring data is accurate and formatted correctly with help resource managers when analysis is performed.

Submitting Data to FWMIS

1. Email the loadform as an attachment to the regional Fish & Wildlife biologist according to the area in which the data was collected or the collection/research license was issued. View Fish & Wildlife contact map:
<https://geospatial.alberta.ca/portal/apps/webappviewer/index.html?id=aac193886cf7474aafcbc17c1f1c031b>
2. If data was collected under the authorization of a Wildlife Research Permit or Collection Licence, submit completed and verified loadforms to the Online Permitting and Clearance (OPaC) System at:
<https://www.opac.alberta.ca/Login.aspx>

Staff from the Ministry of Alberta Environment and Protected Areas maintains the FWMIS database and will complete the 'load' of the Excel worksheet once the above criteria have been met.

Contact Information

If you have further questions regarding FWMIS Loadforms, contact:

EPA.FWDataMgmt@gov.ab.ca

Alberta Environment and Protected Areas