Modern Strategies for Wildlife Data Collection, Dissemination and Reporting



Wildlife Survey Data Management (WSDM) Database

The WSDM database is an ArcGIS Geodatabase that contains information on over 250 threatened, endangered, and other Species of Greatest Conservation Need in Washington. Our database stores point and polygon wildlife occurrences and associated tabular information pertaining to surveys, site occupancy and productivity, and biological details (Fig. 1). This information is critical to survey planning and management activities that direct our wildlife conservation and recovery efforts.



Figure 1. WSDM data entry add-in integrated into ArcMap. **Traditional, Ruggedized Mobile Data Devices**

Ruggedized devices play a central role in collecting biological and spatial data in disconnected environments typical of wildlife surveys. Even as new techniques emerge, ruggedized devices are a cornerstone of field data collection and are used in a variety of physical settings (Fig. 2).



Figure 2. Ruggedized devices frequently used in biological monitoring.

Gretchen Blatz* and Andrew Duff, WA Department of Fish and Wildlife

Gretchen.Blatz@dfw.wa.gov

WDFW Wildlife Observation Tool for Tablets and Smartphones

Agency biologists and professional partners can now report new and access existing priority fish and wildlife observations to and from WSDM using a mobile device connected to a cellular network or Wi-Fi (Fig. 3). This data reporting tool is also accessible on the desktop using a web browser (ArcGIS.com web map). GIS datasets (e.g. aerial photography, topographic maps, WSDM data) are transmitted to the devices using web services. This tool assists with both field and post-survey documentation by extending data entry capabilities to consumer-grade mobile devices and personal computers. 🕀) ⊾ 🚟 📶 💷 12:34 рм



Figure 3. Web-based Wildlife Observation application available on a desktop, tablet, or smartphone.

Opening Access to Data with Web Services

Wildlife survey data are generalized and incorporated into WDFW's Priority Habitats and Species (PHS) map and digital data products, including an interactive data viewing and reporting tool that can be accessed on the internet (PHS on the Web) (Fig. 4). These resources are used by WDFW staff, citizens, landowners, conservation groups and governments to inform conservation and land use planning efforts.

Figure 4. **'PHS on the** Web' desktop data application.



Viewing

Web services have enabled real-time data entry and reporting for professional biologists and citizen scientists. Readily available and affordable mobile devices with built-in GPS provide a simple data collection system that can save resources and expand the volume and quality of information available for wildlife conservation and management by optimizing data workflows (Fig. 5)







Figure 5. Ecological Integrity Monitoring volunteers being trained at a WDFW monitoring site. Digital data workflows enhance the flow of information to and from the field.

Facilitating Public Engagement

WDFW's Wolf Observation reporting tool stores public reports of wolf observations along with photo, audio, and video files (Fig. 6). Data records are transferred over the web into an ArcGIS Geodatabase and reviewed by WDFW Biologists to help identify potential new wolf packs in Washington.

WDFW We	olf Observation Re
Observer Contact Information * Indicates required fields @ Mr. C Ma. C Mrs. * First Name: Affiliation:	How to recogn GRAY WOLF Color: light gray to black Dimensions: 2.5 feet tall, 5-6 Broad snout Round ears-
Malling Address:	
* E-mail Address: Are you the Observer or the Reporter?	Photo Upload Please send us pho
Were Other Observers Present? No C Yes If yes, please provide names and contact information for each observer. Ilimited to 250 characters.	Texris
Characters remaining: 250	*
Observation Details ^ Indicates required fields	_
*Observation Date:	Duration of Observation: 0
*Observation Time: 12:00 AM	Distance of Observes to Animals
* Observation Method/s):	t County Where Observation Oce
Individual(s) Seen Observed Scat	Please select a county 💌
Individual(s) Heard Observed Den	Details of the Observation:
Dead Animal Sample Collected	If possible, provide a description of:
Cobserved Tracks Photo, Video or Audio Recording Number of Animala Seen: Advits: 0 Advits: 0	 The animal(s) The animal's behavior Any vocalizations heard Any socalizations or other signs (include measurements)
Unknown: 0 Total: 0	 The observer's behavior
	Text is limited to 250 characters.
Number of Animale Heard:	
Aduits 0 Jovennerhup: 0	
1012/ II	

Figure 6. WDFW's Wolf Observation reporting tool Acknowledgments WDFW has partnered with ESRI to develop several of these tools.



Creating Efficiencies in Data Collection and

	Observation Lo	cation Mos			
corting Form ize a gray wolf Corr light gray/brown Dimensions: 15 feet tall, 4 feet kong Tal pointed ears barrow snowt barrow snowt S: poraphs of your observation.	Files mu Browse Browse	st be 10 mb or less in size.	UVER Surrey Bell oria ⁰ Seattle Taco Congyte Portland Salem ton and click Latitude: St	Ingham ma yokima w Cources Et map to fill in Observa	CVernon Crenterook Crenterook Coelir Coeli
Upload #3:	Browse Video: a	nps Wi	_	_	
Upload #4:	Number of Submitte	d Wolf Reports = 233	Prev Page	1/16 Next Page	
Upload #5:					
	Date Submitted	 Observation Date 	Observation Time	Observation County	Observation Method
	January 21, 2013	January 20, 2013	1:00 PM	Stevens	Tracks
	January 20, 2013	January 20, 2013	11:45 PM	King	Individuals Seen
minutes	January 17, 2013	July 4, 2012	9:00 AM	Kittitas	Tracks;Photo or Video
L vavnis	January 16, 2013	September 29, 2012	7:45 PM	Lewis	Individuals Heard;Tracks;Photo or Video
yaloo	January 15, 2013	January 14, 2013	7:30 PM	Yakima	Individuals Seen;Individuals Heard
Irred:	January 15, 2013	December 15, 2012	11:00 AM	Lincoln	Individuals Seen
	January 14, 2013	January 13, 2013	9:00 AM	Spokane	Individuals Seen
	January 14, 2013	January 13, 2013	2:30 PM	Grant	Individuals Seen
	January 11, 2013	December 8, 2012	3:15 AM	Spokane	Individuals Seen;Individuals Heard
	January 11, 2013	January 10, 2013	12:00 AM	Okanogan	Individuals Seen;Tracks;Photo or Video
	January 11, 2013	January 5, 2013	11:30 AM	Lincoln	Individuals Seen
	January 8, 2013	January 8, 2013	12:00 AM	Whitman	Individuals Seen
	January 3, 2013	December 24, 2012	10:00 AM	Whitman	Individuals Seen
A	January 3, 2013 January 3, 2013	December 24, 2012 January 2, 2013	10:00 AM 12:00 PM	Whitman Clark	Individuals Seen Individuals Seen;Individuals Heard;Tracks