

Land Acquisition Database for Conservation Organizations



Geog 575 – Wendy Berg

Background

- Purchasing land is the best way to insure its preservation
- Conservation organizations have limited budgets
- Collaboration between non-profits and government agencies is common

Design Objectives

- Database useful for prioritizing habitats to protect
- Areas likely to interest funding partners
- Information on zoning, land ownership, and value

Data Layers – Natural Areas



Ecological Regions



Vegetation

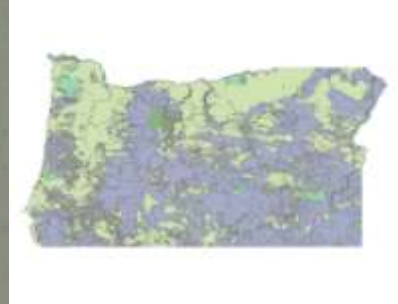


Watersheds (HUC 6)

Data Layers – Reference Areas



Zoning



Land Management



Taxlots – Portland Metro Area

Data Layers - Other



<- ODFW Conservation Opportunity Areas

Species Information

Species	Common Name	Family	Class	Order	Genus	Species	Conservation Status	Notes
Amphispiza bilineata	Western Tanager	Amphispizidae	Amphispiza	Amphispiza	Amphispiza	Amphispiza	Amphispiza	Amphispiza
Amphispiza bilineata	Western Tanager	Amphispizidae	Amphispiza	Amphispiza	Amphispiza	Amphispiza	Amphispiza	Amphispiza
Amphispiza bilineata	Western Tanager	Amphispizidae	Amphispiza	Amphispiza	Amphispiza	Amphispiza	Amphispiza	Amphispiza
Amphispiza bilineata	Western Tanager	Amphispizidae	Amphispiza	Amphispiza	Amphispiza	Amphispiza	Amphispiza	Amphispiza
Amphispiza bilineata	Western Tanager	Amphispizidae	Amphispiza	Amphispiza	Amphispiza	Amphispiza	Amphispiza	Amphispiza
Amphispiza bilineata	Western Tanager	Amphispizidae	Amphispiza	Amphispiza	Amphispiza	Amphispiza	Amphispiza	Amphispiza
Amphispiza bilineata	Western Tanager	Amphispizidae	Amphispiza	Amphispiza	Amphispiza	Amphispiza	Amphispiza	Amphispiza
Amphispiza bilineata	Western Tanager	Amphispizidae	Amphispiza	Amphispiza	Amphispiza	Amphispiza	Amphispiza	Amphispiza
Amphispiza bilineata	Western Tanager	Amphispizidae	Amphispiza	Amphispiza	Amphispiza	Amphispiza	Amphispiza	Amphispiza
Amphispiza bilineata	Western Tanager	Amphispizidae	Amphispiza	Amphispiza	Amphispiza	Amphispiza	Amphispiza	Amphispiza

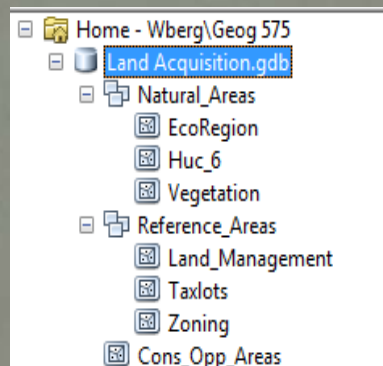
Vertebrate
Species By
Watershed

Species	Common Name	Family	Class	Order	Genus	Species	Conservation Status	Notes
Amphispiza bilineata	Western Tanager	Amphispizidae	Amphispiza	Amphispiza	Amphispiza	Amphispiza	Amphispiza	Amphispiza
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Methods

- Create a file geodatabase to store information
- Organize data into feature datasets
- Add a new field and domain to features for use in classifying conservation priority
- Create relationship classes between tables and features

Geodatabase with Feature Datasets



- Vertebrates to HUC 6 watersheds

Relationship Classes

- Vertebrates to HUC 6 watersheds

The screenshot shows a QGIS table view with the following columns: Species, SCHEME, COUNTRY, HUC6, HUC6_CODE, OCCASION, ABUNDANT, COMMON, DOMINANT, RICHNESS, DIVERSITY, and SPECIES. The data is filtered to show 10 out of 76344 records. The table lists various species and their associated HUC6 codes and occurrence data.

Species	SCHEME	COUNTRY	HUC6	HUC6_CODE	OCCASION	ABUNDANT	COMMON	DOMINANT	RICHNESS	DIVERSITY	SPECIES
1 Starling vulgaris	European starting	4257511916	17207	1	OC	1	1	1	1	1	1
2 Starling vulgaris	European starting	4257511916	17207	2	OC	1	1	1	1	1	1
3 Starling vulgaris	European starting	4257511916	17207	3	OC	1	1	1	1	1	1
4 Starling vulgaris	European starting	4257511916	17207	4	OC	1	1	1	1	1	1
5 Starling vulgaris	European starting	4257511916	17207	5	OC	1	1	1	1	1	1
6 Starling vulgaris	European starting	4257511916	17207	6	OC	1	1	1	1	1	1
7 Starling vulgaris	European starting	4257511916	17207	7	OC	1	1	1	1	1	1
8 Starling vulgaris	European starting	4257511916	17207	8	OC	1	1	1	1	1	1
9 Starling vulgaris	European starting	4257511916	17207	9	OC	1	1	1	1	1	1
10 Starling vulgaris	European starting	4257511916	17207	10	OC	1	1	1	1	1	1

- Vertebrates to HUC 6 watersheds

[illegible]

OBJETO *	ICRAN *	CORRANE	ELCODE	RECODE	DELDTOT *	INICDT *	FINICDT *	ANALIST *	RECODE	RECDTE	DEL	OBJETO	SEÑAL *	
112	Calculus integral	10th eddy 1st eddy	ABR12001	27800	P	09	09	1	PROFESOR			236	17100000001	ABR
113	Calculus differential	10th eddy 1st eddy	ABR12001	27800	P	09	09	1	PROFESOR			418	17100000001	ABR
272	Calculus differential	10th eddy 1st eddy	ABR12001	27800	P	09	09	1	PROFESOR			1129	17100000001	ABR
1129	Calculus differential	10th eddy 1st eddy	ABR12001	27800	P	09	09	1	PROFESOR			142	17100000001	ABR
1446	Calculus differential	10th eddy 1st eddy	ABR12001	27800	P	09	09	1	PROFESOR			2135	17100000001	ABR
22011	Calculus differential	10th eddy 1st eddy	ABR12001	27800	P	09	09	1	PROFESOR			360	17100000001	ABR
10019	Calculus differential	10th eddy 1st eddy	ABR12001	27800	P	09	09	1	PROFESOR			364	17100000001	ABR
1566	Calculus differential	10th eddy 1st eddy	ABR12001	27800	P	09	09	1	PROFESOR			2457	17100000001	ABR

- Species Information to Vertebrates

[illegible]

OBJECTID	SCHEMA	CONNAME	ELCEN	HEXIDEX	CCURSTATUS	SEGSTATUS	DRUGSTATUS	SCHEMEXCEN	HEXIDEX
1	Stemata	Stemata	ASPP011010	27201	C	SC	1	ASPP011010	HEXIDEX
2	Stemata	Stemata	ASPP011010	27201	C	SC	1	ASPP011010	HEXIDEX
3	Stemata	Stemata	ASPP011010	27201	C	SC	1	ASPP011010	HEXIDEX
4	Stemata	Stemata	ASPP011010	27201	C	SC	1	ASPP011010	HEXIDEX
5	Stemata	Stemata	ASPP011010	27201	C	SC	1	ASPP011010	HEXIDEX
6	Stemata	Stemata	ASPP011010	27201	C	SC	1	ASPP011010	HEXIDEX
7	Stemata	Stemata	ASPP011010	27201	C	SC	1	ASPP011010	HEXIDEX

- | OBJECT ID | OBJECT * | FORNAME | FLYER | WBCOM | DECEDEAT | ABIDEAT | UNDECEAT | SWWBCOM | DECEAT1 |
|-----------|------------------|-------------------|------------|-------|----------|---------|----------|------------|---------|
| 1 | Bismarck volgers | European starling | ASBPRT1010 | 21287 | C | 3C | 1 | PROG101010 | |
| 2 | Bismarck volgers | European starling | ASBPRT1010 | 21287 | C | 3C | 1 | PROG101010 | |
| 3 | Bismarck volgers | European starling | ASBPRT1010 | 21287 | C | 3C | 1 | PROG101010 | |
| 4 | Bismarck volgers | European starling | ASBPRT1010 | 21287 | C | 3C | 1 | PROG101010 | |
| 5 | Bismarck volgers | European starling | ASBPRT1010 | 21287 | C | 3C | 1 | PROG101010 | |
| 6 | Bismarck volgers | European starling | ASBPRT1010 | 21287 | C | 3C | 1 | PROG101010 | |
| 7 | Bismarck volgers | European starling | ASBPRT1010 | 21287 | C | 3C | 1 | PROG101010 | |

Specimens Info

OBJECT_ID	EL CODE	Specimen Name	Common Name	KINGDOM	PHYLUM	CLASS	ORDER	FAMILY
1	001	ADULT TURTLE, Testudo vulgaris	Testudo	Mammalia	Liliaceae	Poaceae	Poaceae	Poaceae

1 out of 400 Selected

Verificando [Specimen_Info]

Final Product



Intended Applications

- Conservation organizations interested in acquiring new land can query the database for high, medium, and low priority:
 - Ecological Regions
 - Vegetation
 - Watersheds
 - Vertebrate Species

Intended Applications

- And then use additional datasets to refine their selections:
 - Land Management (Public vs Private)
 - Zoning (Ag vs Urban)
 - Taxlots (Land value, owner contact info)
 - ODFW Conservation Opportunity Areas

Demonstration Application

- An organization wants to acquire land that:
 - Is within the “Willamette River and Tributaries Gallery Forest” ecological region
 - Is within the Tualatin River watershed
 - Includes Oregon white oaks
 - Supports high priority vertebrates
 - Is within an ODFW Conservation Opportunity Area



Willamette River and Tributaries
Gallery Forest



Oregon White Oak



Tualatin River Watershed



ODFW Conservation
Opportunity Areas

Result



- Watershed Supports:
 - Spotted Owl
 - Northern Flying Squirrel

Reference Data

- Land Management: Private
- Zoning: Agricultural
- 1,600 Acres
- 47 Taxlots
- Total value of \$12,525,470

Or Start Small:

- 23 Acres
- \$131,200



Limitations

- Acquisition of taxlot data for entire state
- Updates to vegetation and taxlot data
- Determining high, medium, and low priority ecoregions, vegetation, watersheds, and species