# Arizona's HERITAGE DATA MANAGEMENT SYSTEM (HDMS)

# Overview

- The HDMS is a state-wide central repository of site specific data on special status species.
- The HDMS is a dynamic database with data being added and corrected daily.
- Clearinghouse for rare species information; data come from many sources including federal, state, and tribal agencies, museums and herbaria, academia, literature, Heritage Grant reports and sightings from knowledgeable individuals.

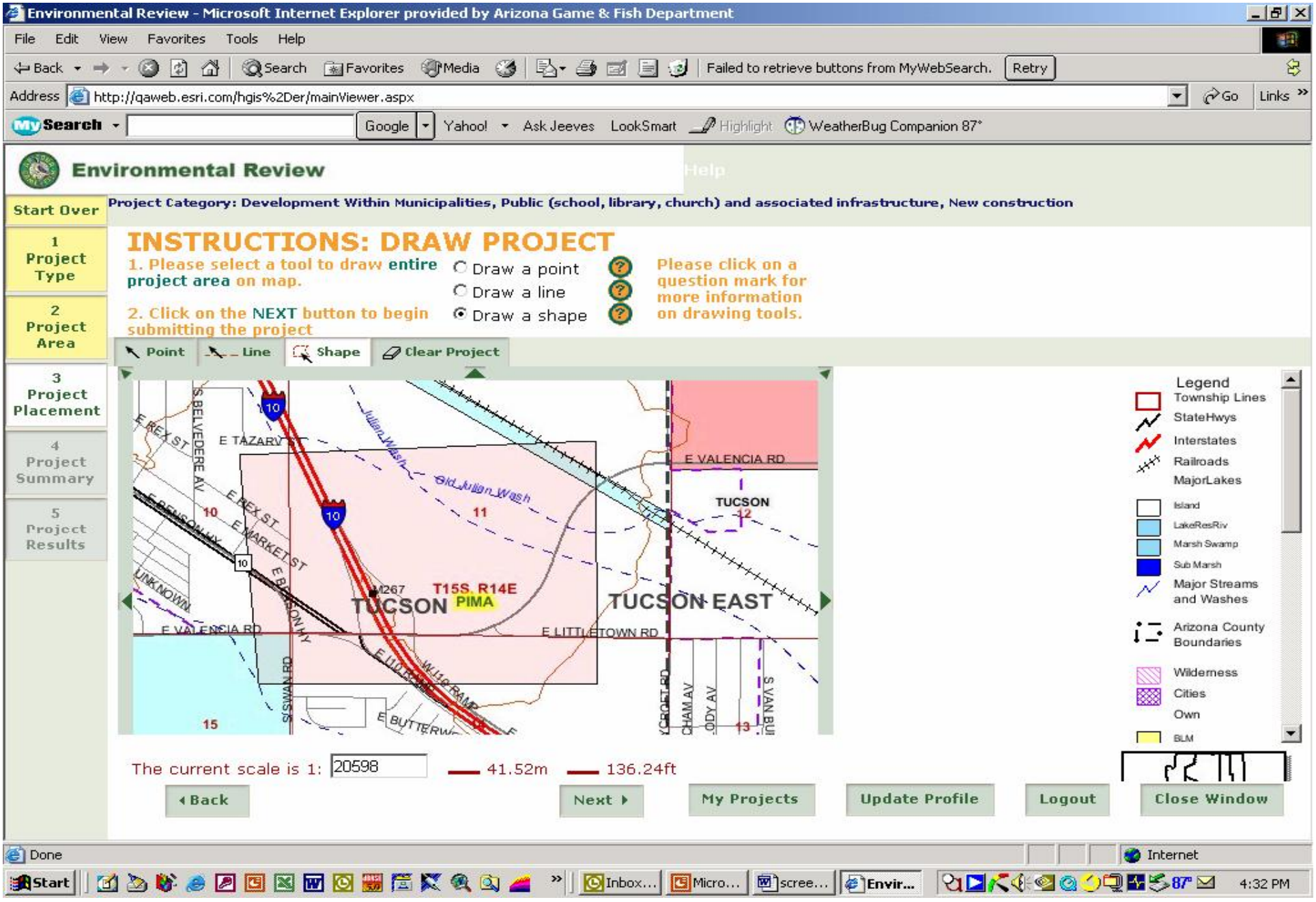
# Overview continued ...

- The HDMS also has information about the taxonomy, ecology, biology and status of all vertebrates and many rare plants and invertebrates in Arizona.
- The HDMS produces biological abstracts for special status species.
- The HDMS is part of a global network of more than 80 Natural Heritage Programs and Conservation Data Centres.

# Features & Benefits

- One stop shopping for special status species information: status, distribution, ecology, etc.
- Data standards and methods shared by all Natural Heritage Programs allowing for multi-jurisdictional projects/products.
- Range-wide planning efforts.
- Online Environmental Review Tool – ties to CWCS.

# Online Environmental Review



# Uses

- Land and resource management (e.g. HCP, EIS, BA, BE, prescribed burns)
- Project evaluations (e.g. compliance)
- Conservation (e.g. ecoregional planning, petitions for listing, recovery plans)
- Research (e.g. status survey)
- Environmental education

# Users

- Federal, state, local and tribal agencies
- Naturalists and Conservation Groups
- Educators and Researchers
- Consultants and Developers
- Policy makers
- Students
- General Public

# Biological Abstract

**ARIZONA GAME AND FISH DEPARTMENT**
**HERITAGE DATA MANAGEMENT SYSTEM**

**Animal Abstract**

**Element Code:** AFCNC05021
**Data Sensitivity:** No

**CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE**

**NAME:** Poeciliopsis occidentalis occidentalis
**COMMON NAME:** Gila Topminnow
**SYNONYMS:** Heterandria occidentalis, Girardinus occidentalis, Girardinus sonoriensis, Poecilia occidentalis, Mollienisia occidentalis, Arizonichthys pammorphilus

**FAMILY:** Poeciliidae

**AUTHOR, PLACE OF PUBLICATION:** Baird, S.F. and C. Girard. 1853. Descriptions of new species of fishes collected by Mr. John H. Clark, on the U.S. and Mexican Boundary Survey, under Lt. Col. Jas. D. Graham. Proceedings of the Academy of Natural Sciences, Philadelphia, 6:387-390.

**TYPE LOCALITY:** Santa Cruz River, near Tucson, Arizona.

**TYPE SPECIMEN:**

**TAXONOMIC UNIQUENESS:** Two species in the genus in North America, only species in genus in Arizona, two subspecies in genus in Arizona, P. occidentalis occidentalis and P. occidentalis sonoriensis.

**DESCRIPTION:** Dorsal profile slightly curved, body somewhat elongated. Caudal fin rounded to almost square. Gonopodium of male elongated, reaching past snout when in copulatory position. Males small, rarely more than 25.0 mm (0.98 in.) standard length; females larger, sometimes 50.0 mm (1.97 in.) or more, usually 30 to 45 mm (1.18 to 1.77 in.), standard length (Minckley 1973).

Body tan to olivaceous, darker above, and often white on belly. Scales on dorsum darkly outlined, extending as black speckles to upper belly and pre-pectoral area; lateral band dark and continuous along sides. Fins with rays outlined with melanophores, but lacking dark spots. Breeding males blackened, with some golden in midfins of predorsum, and orange at base of gonopodium and sometimes at base of dorsal fin. Females in breeding condition with darkened perifroct (Minckley 1973).

**AIDS TO IDENTIFICATION:** The two subspecies of topminnows can be distinguished by several morphological characteristics. In P.o. occidentalis the snout is short, the mouth subsuperior and the dark lateral band of the female extends from the opercle to the base of the caudal fin. In P. o. sonoriensis the snout is longer, the mouth superior and the lateral band of the female rarely begins before the base of the pelvic fins (Minckely 1973, in Stefferud 1982). In addition, P.o. sonoriensis is found at the headwaters of the Yaqui River, whereas P.o. occidentalis is found below the headwaters (AGFD Native Fish Diversity Review 1995).

Female topminnow may be distinguished from mosquitofish (Gambusia affinis) by lack of dark spots on caudal fin and lack of dark sub-orbital teardrop-shaped mark; origin of dorsal and anal fin vertically in line, perpendicular to horizontal axis of fish, in mosquitofish origin of dorsal fin posterior to origin of anal fin. Male topminnow in breeding condition may or may not become dark black, male mosquitofish never do; male topminnow gonopodium, when extended forward in copulatory position, extends very near to or past snout, male mosquitofish does not. Topminnows have weak, spatulate teeth whereas mosquitofish have strong conically shaped teeth, distinguishable only with a microscope. Female topminnow are generally larger than males.

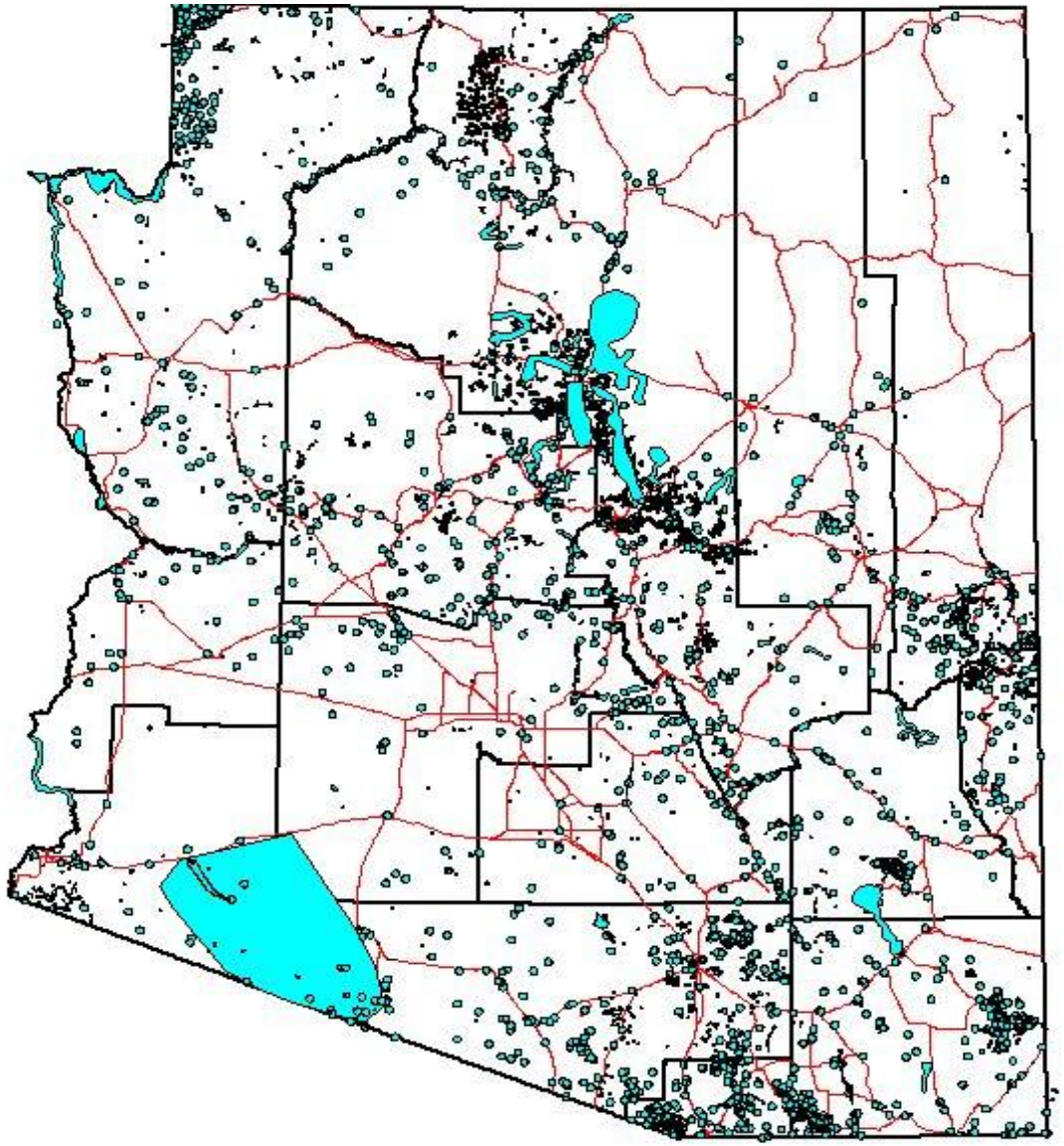
# Availability

- General information is available to anyone upon request.
- Site specific data is available to land owner or land management agency, or to third parties with permission of owner.
- With MOU or other agreement, automatic update schedule can be established with cooperators.

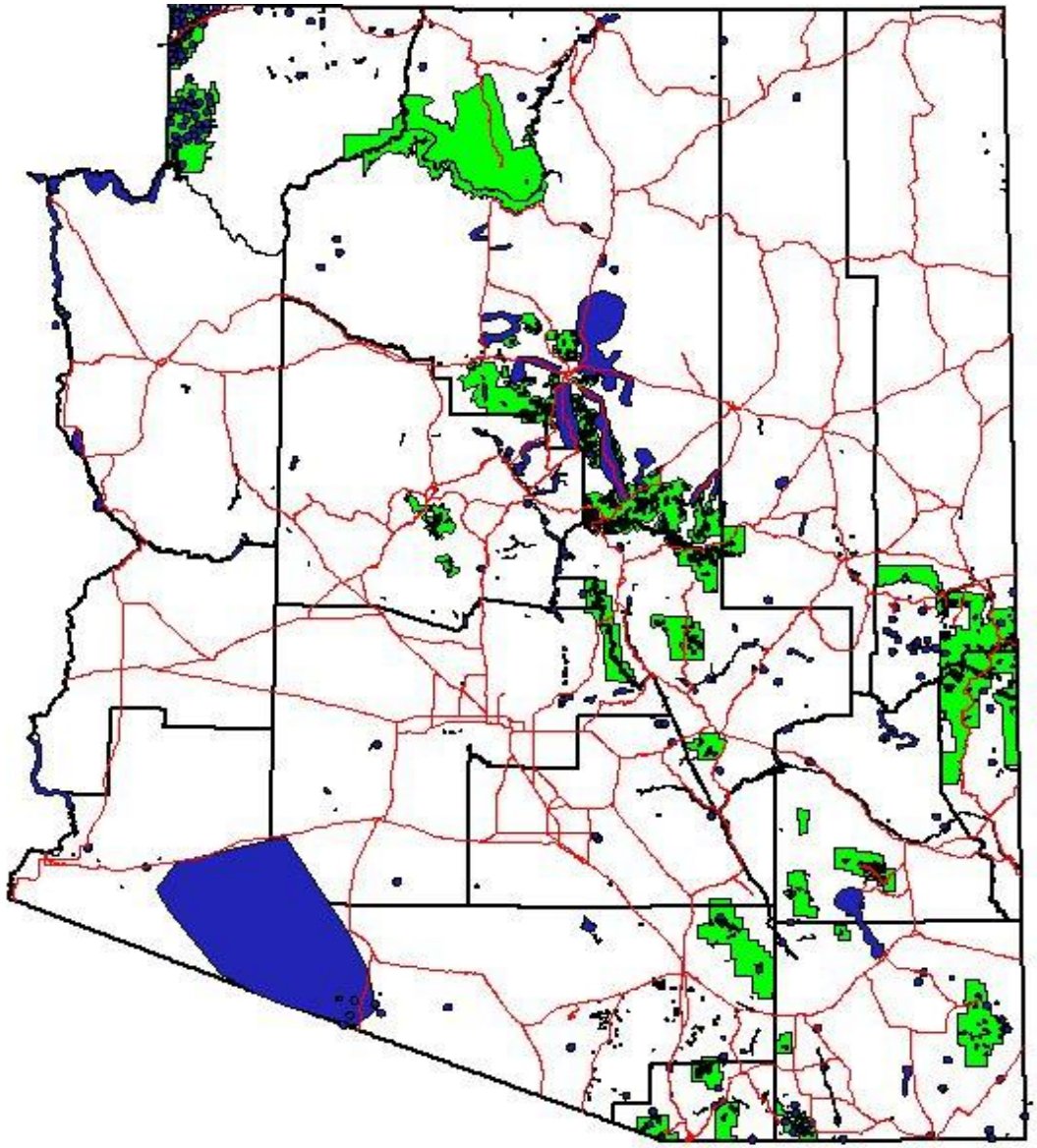
# Transportation Projects

- McDOT Roadway Suitability Model
- Missing Linkages Project
- Road maintenance
- Individual project review

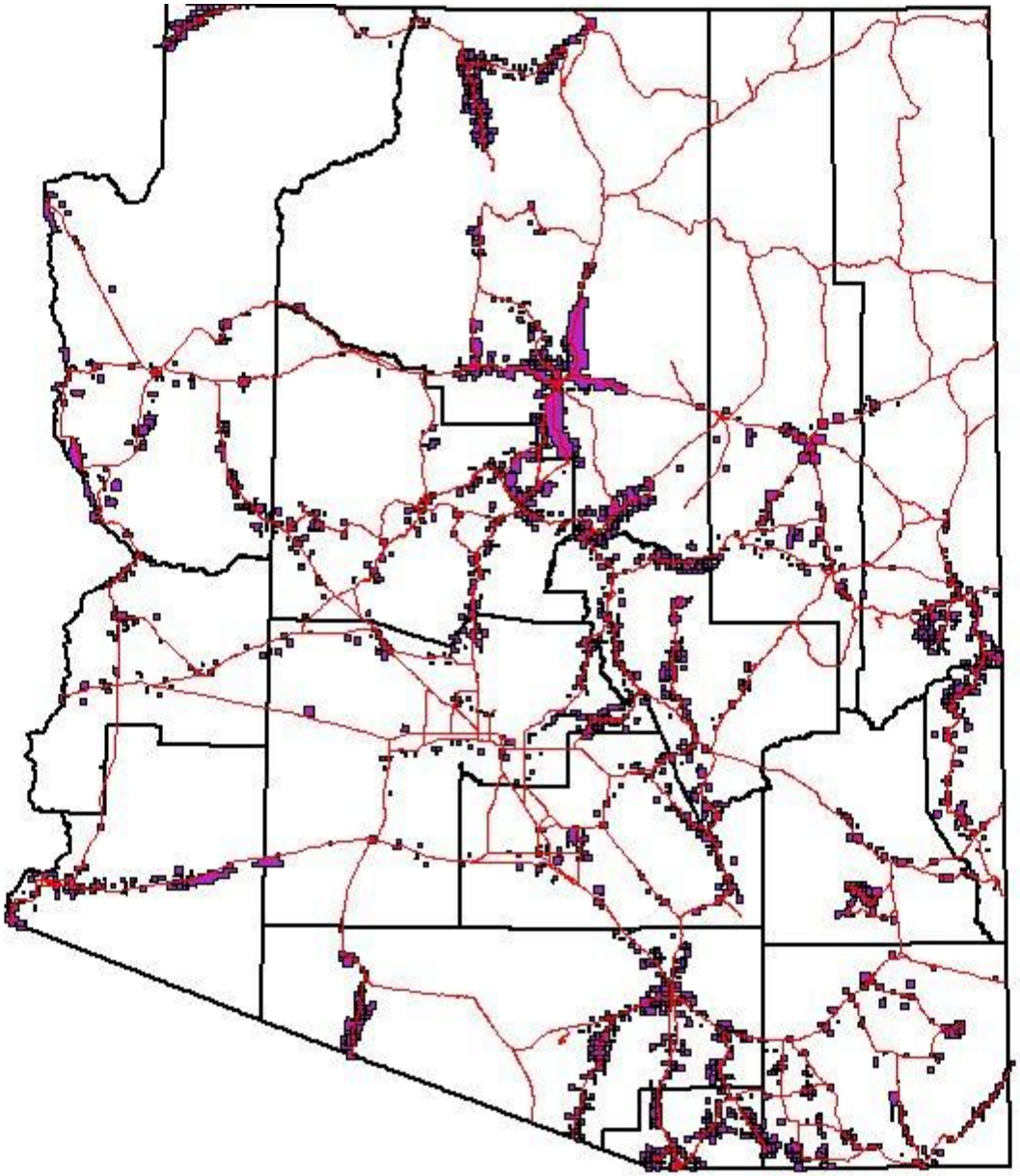
# All Special Status Species



# Listed Species w/Critical Habitats



# Special Status Blocks near Highways



# Data Limitations

- Information Currentness
- Information Sensitivity
- Need for Interpretation of Information
- Data Serves as a Guide - absence of data does not equate to absence of a species.
- Need for Surveys - not all of the state has been surveyed with the same scope and intensity.
- Not a Substitute for AGFD project review

# Data Security Issues

- All subsets of the HDMS must be treated under the HDMS Security Protocol.
- FOIA, and state public record laws.
- Exact sites are released only to land owner, land management agency, or with permission of owner.
- Third party requests must be sent to HDMS.

# Questions???