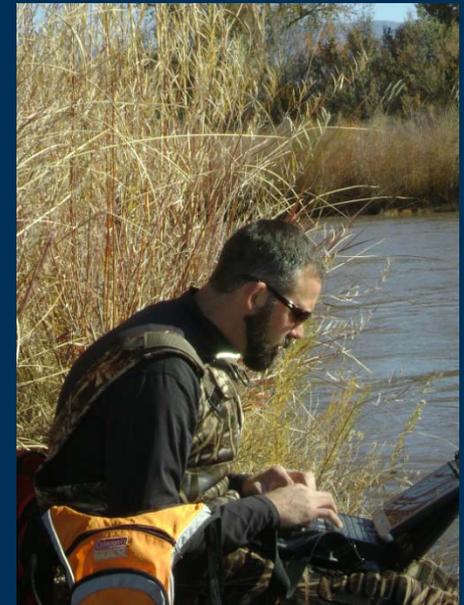




Using HTML5 for Field Data Collection of Small River Impoundments in Texas

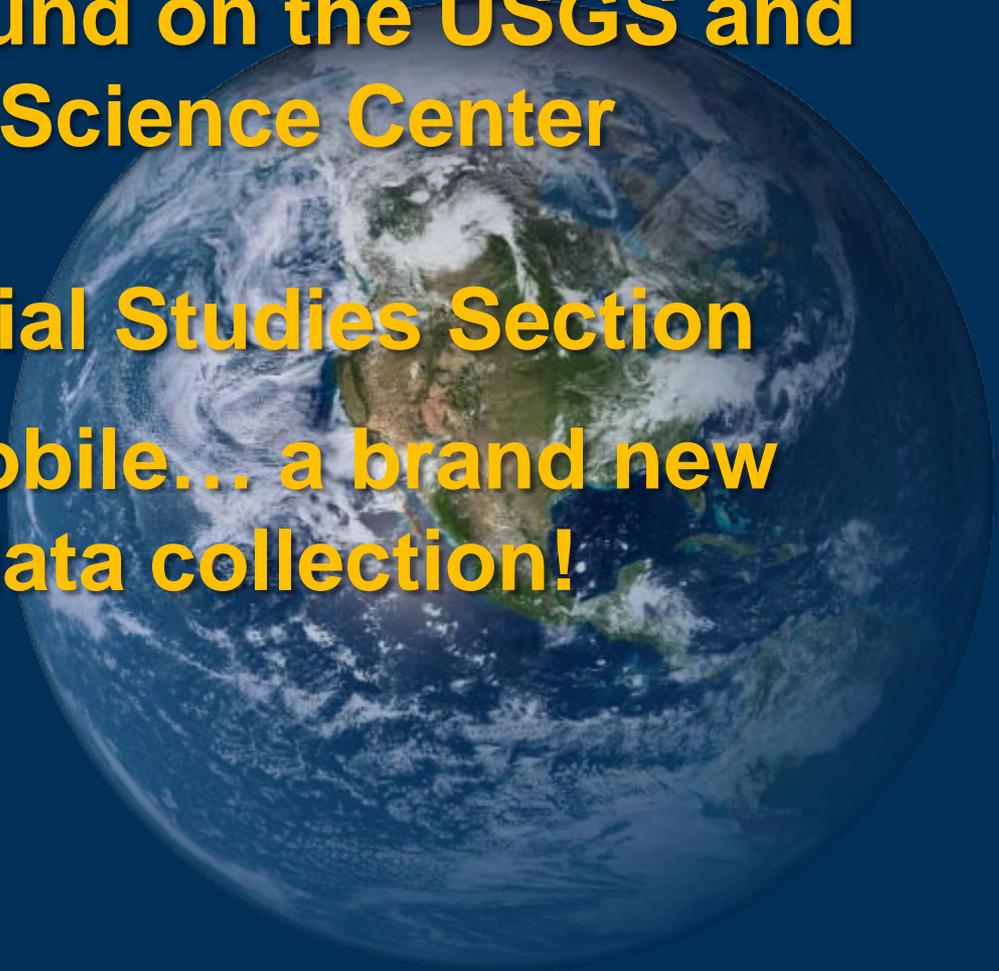
**Daniel K. Pearson, GIS Specialist
Data and Spatial Studies Section Chief
USGS-Texas Water Science Center
03.25.13**

U.S. Department of the Interior
U.S. Geological Survey



Overview

- **A bit of background on the USGS and the Texas Water Science Center (TXWSC)**
 - **Data and Spatial Studies Section**
- **Fish Passage Mobile... a brand new take on mobile data collection!**

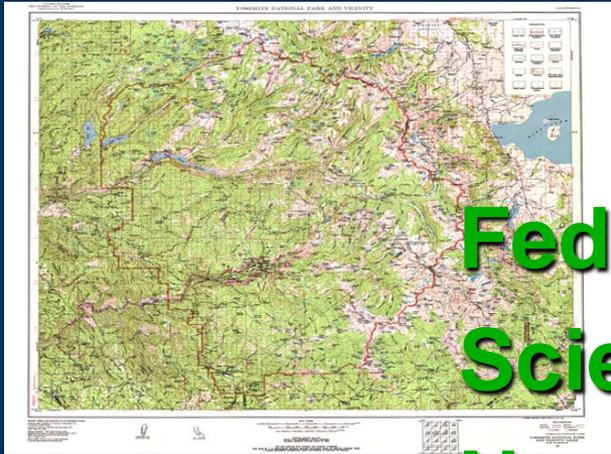


Introduction to USGS



- **Dept. of Interior**
- **Founded in 1879**
- **Six Different Mission Areas**
 - **Core Science Systems, Climate and Landuse Change, Energy and Minerals, Environmental Health, Ecosystems, Natural Hazards....**
 - **Water Resources**
- **Around 8,000 employees nationwide**
- **Located in offices in every State**

Who is the USGS?



Federal Agency
Scientific Mission
Non-Regulatory



WATER RESOURCES MISSION AREA—

...to provide hydrologic information and understanding needed by others to achieve the best use and management of the Nation's water resources. USGS accomplishes this mission in cooperation with State, Local, and Other Federal Agencies.



“In cooperation with.....”

- Work with over 100 municipalities, river authorities, groundwater districts, local, state, and Federal agencies



TXWSC Personnel

- About 140 total staff in Texas in 9 offices
- Hydrologic Studies and Research Sections
 - Approx. 35 FTEs and several students (primarily Hydrologists, Physical Scientists, Civil Engineers, Geophysicists, Biologists)
- Data and Spatial Studies Section
 - Majority in Austin, 1 in San Antonio
 - Currently 7 FTEs and 2 student (6 Geographers, 2 IT Specialists, 1 Hydrologist)

What Does DSS Do?

- Data management (ETL processes, data integration)
- Database-centric projects (design, management)
- GIS/spatial analysis and data production
- Modeling/visualization
- Web mapping
- Programming/custom tools
- Field mapping
- Project overviews at <http://tx.usgs.gov/GIS/>



Fish Passage Mobile

- In Texas, NID reports over 7,000 dams
 - Accounts for dams over 25 feet in height, storing more than 50-acre feet of water
- Assumed that many/all of these structures impeded fish passage
- Ongoing assessment of smaller dams is needed to allocate resources to conserve, protect and enhance riverine ecosystems

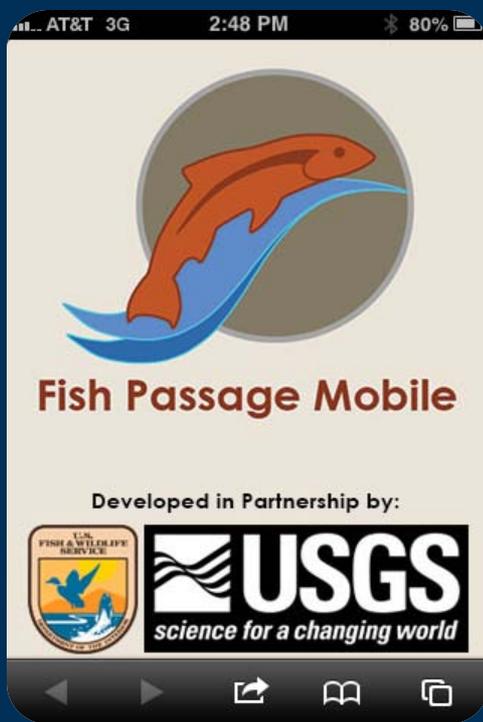
Fish Passage Mobile

- USGS and MDEP teamed up in cooperation with USFWS Texas Fish and Wildlife Conservation Office (San Marcos, TX)
- Mike Montagne and Pete Diaz (USFWS), Fon Duke and Doug Zellif (MDEP)
- Build HTML5 mobile data collection platform to identify, map and capture photos of small impoundments and low water crossings that present a barrier for fish passage

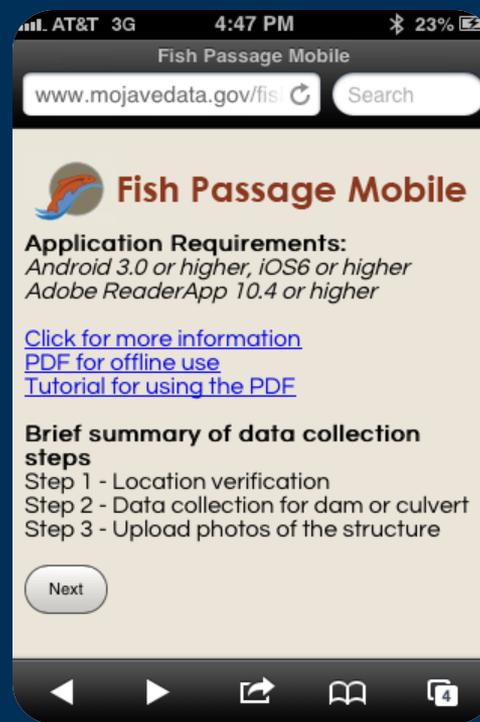


Demo

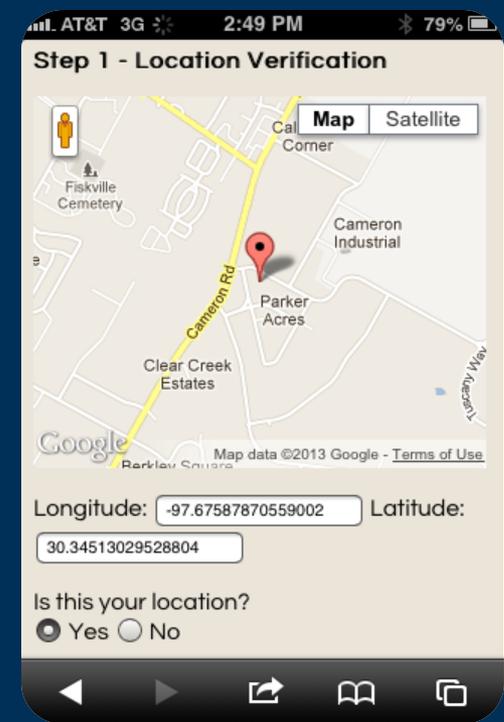
Splash Screen



Requirements



Location Map



Demo

Data Collect

Yes No

Substrate
Silt

Perched
Yes No

Previous Next Done

✓ Silt
Sand
Pebble

Capture Photo

Step 2 - Data collection of dam or culvert

Low water crossing
Yes No

Substrate
Gravel

Perched
Yes No

Step 3 - Upload photos of the structure

Take Photo or Video
Choose Existing
Cancel

Submit Data

Step 2 - Data collection of dam or culvert

Low water crossing
Yes No

Substrate
Gravel

Perched
Yes No

Step 3 - Upload photos of the structure

Upstream photo
Choose File 1 photo

Downstream photo
Choose File no file selected

Email Address
dpearson@usgs.gov

Backend Database

- Administration Portal built on MySQL
 - Allows for Data QC checks
 - Approve/Disapprove data submitted to the application
 - Map that allows you to view all approved data and distribution
- Download weekly dumps of the database in Excel and CSV format



Limitations

- **Cell phone connectivity**
 - While coverage is improving, needed an option for offline editing
- **Adobe PDF**
 - Form allows for offline editing of the database and submittal through email once you return to the network
- **Cell phone technology ever changing**
- **User will need to carefully read requi**

Fish Passage Mobile

- **Current Status:**
 - Testing, nearing Beta Release
- **Deliverables: USGS Open-File Report and public release**
 - Early Summer 2013
- **Potential: Much interest in the final product from USFWS and USGS at a National level, plus data collection capabilities using HTML5 is a new arena**
- **<http://www.mojavedata.gov/fish/>**



Questions?

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- Data and Spatial Studies Section Chief
- USGS Texas Water Science Center
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Texas GIS Web Site:

<http://tx.usgs.gov/GIS/>