

Arizona Drought Impact Reporting System

Mike Crimmins
Dept. of Soil, Water, & Env. Science &
Arizona Cooperative Extension
The University of Arizona

Arizona Drought Impact Reporting System

- Impact monitoring = key LDIG task
- Why?: better characterizations of drought, local assessments of vulnerability
- Requested development of tool to facilitate collection and synthesis of impact reports
- Initial effort was a hardcopy impact checklist adapted from Colorado Drought Plan; iteratively adjusted with feedback from all LDIGs
- Request for transition to web-based tool



AZ-DIRS Development

- Temporary, form-based system (v1.0) deployed for testing in 2006
- Feedback from LDIGs and MTC = focus group meetings, teleconference meetings, and email communications
- ‘Mock up’ system being used to gain feedback on system design, features, and general structure → continued interaction with LDIGs to guide development process
- Operational system in place by spring 2008



AZ-DIRS v1.0

Project Partners

- AZ Governor's Drought Task Force
- Arizona Coop. Ext.
- Arizona Dept. of Water Resources (\$)
- USDA-NRCS (\$)
- National Drought Mitigation Center(\$)
- University of Arizona Research Centers (SAHRA(\$), WRRC(\$), OALS, CLIMAS)
- County LDIGs

DIRS Survey - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://java.arid.arizona.edu/ccdis/jsp/survey/

DIRS - Survey Version 1

Home Report Drought Impacts

Arizona Drought Impacts Reporting System - Current Drought Impacts

Name Email

Address Phone

Geographic Reporting Area (E.G. Nearest Town, Township/Range, Lat/Long, Hydrologic Unit Code)

Economic

Costs and losses to agricultural producers		
Impact	Observed?	Trend
A1 Damage to crop quality	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Worse <input type="radio"/> Same <input type="radio"/> Better
A2 Income loss to farmers due to reduced crop yield	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Worse <input type="radio"/> Same <input type="radio"/> Better
A3 Reduced productivity of cropland (wind erosion, long-term loss of organic matter, etc.)	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Worse <input type="radio"/> Same <input type="radio"/> Better
A4 Insect infestation	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Worse <input type="radio"/> Same <input type="radio"/> Better
A5 Plant disease	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Worse <input type="radio"/> Same <input type="radio"/> Better
A6 Wildlife damage to crops	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Worse <input type="radio"/> Same <input type="radio"/> Better
A7 Increased irrigation costs	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Worse <input type="radio"/> Same <input type="radio"/> Better
A8 Cost of new or supplemental water resources development (wells, dams, pipelines)	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Worse <input type="radio"/> Same <input type="radio"/> Better

Comments/specific causes

<http://java.arid.arizona.edu/ccdis>



AZ-DIRS v2.0

ECONOMIC IMPACTS

COSTS AND LOSSES TO AGRICULTURAL PRODUCERS

Impact observed? Yes/No

	Impact	Trend				Comments	Images
A1	Damage to crop quality	<input type="radio"/> yes	<input type="radio"/> no	<input type="radio"/> No data	<input type="radio"/> No data		
A2	Income loss to farmers due to reduced crop yield	<input type="radio"/> Worse	<input type="radio"/> Same	<input type="radio"/> Better	<input type="radio"/> No data		
A3	Reduced productivity of cropland (wind erosion, long-term loss of organic matter, etc.)	<input type="radio"/> Worse	<input type="radio"/> Same	<input type="radio"/> Better	<input type="radio"/> No data		
A4	Insect infestation	<input type="radio"/> Worse	<input type="radio"/> Same	<input type="radio"/> Better	<input type="radio"/> No data		
A5	Plant disease	<input type="radio"/> Worse	<input type="radio"/> Same	<input type="radio"/> Better	<input type="radio"/> No data		
A6	Wildlife damage to crops	<input type="radio"/> Worse	<input type="radio"/> Same	<input type="radio"/> Better	<input type="radio"/> No data		
A7	Increased irrigation costs	<input type="radio"/> Worse	<input type="radio"/> Same	<input type="radio"/> Better	<input type="radio"/> No data		
A8	Cost of new or supplemental water resources development (wells, dams, pipelines)	<input type="radio"/> Worse	<input type="radio"/> Same	<input type="radio"/> Better	<input type="radio"/> No data		

Comments/specific causes

Trends, specific impact details, and additional geographic info provided here

COSTS AND LOSSES TO LIVESTOCK PRODUCERS

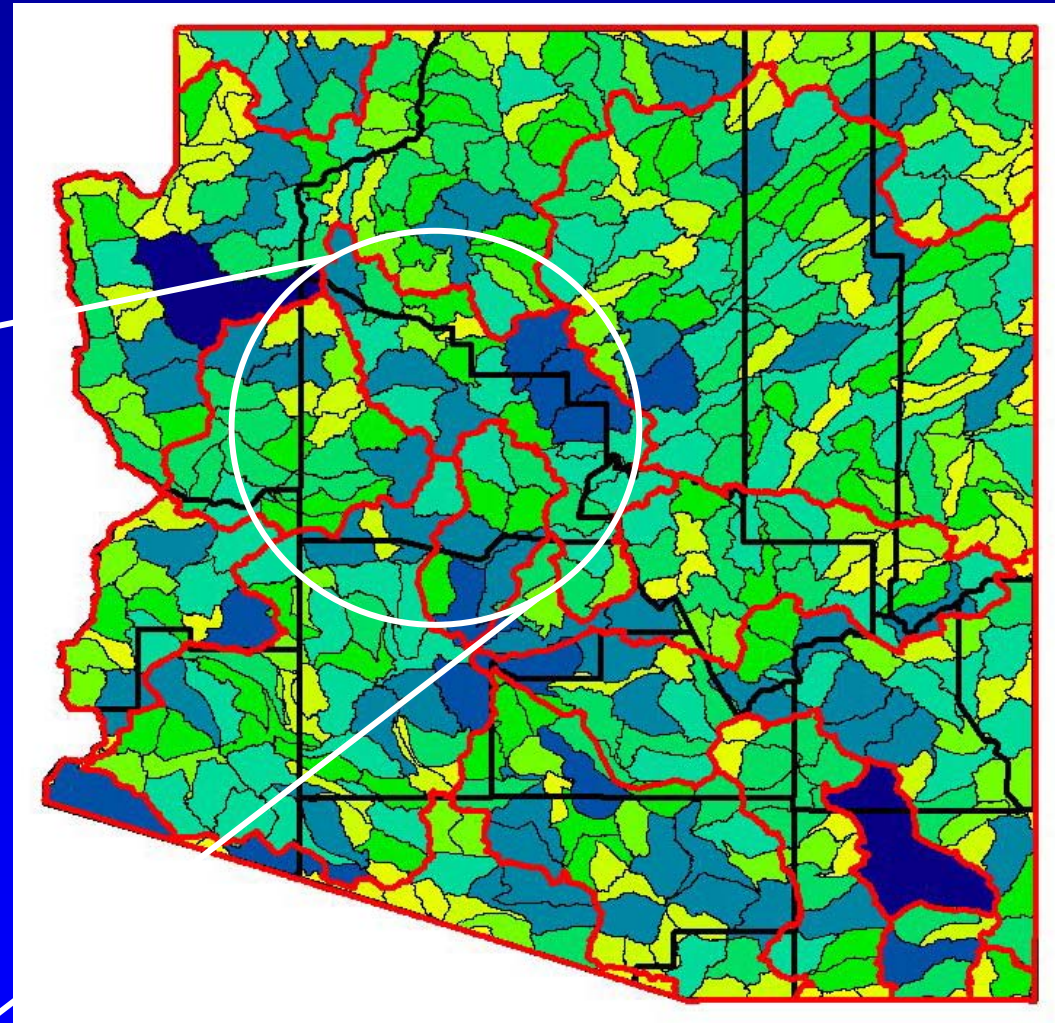
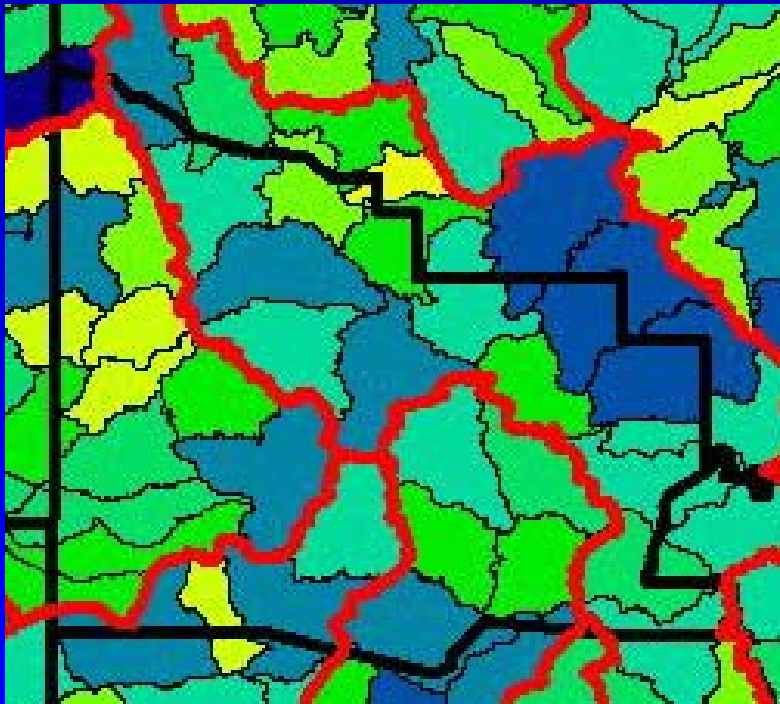
	Impact	Trend				Comments	Images
B1	Reduced productivity of rangelands	<input type="radio"/> Worse	<input type="radio"/> Same	<input type="radio"/> Better	<input type="radio"/> No data		
B2	Forced reduction of foundation stock	<input type="radio"/> Worse	<input type="radio"/> Same	<input type="radio"/> Better	<input type="radio"/> No data		
B3	High cost/unavailability of water for livestock	<input type="radio"/> Worse	<input type="radio"/> Same	<input type="radio"/> Better	<input type="radio"/> No data		

AZ-DIRS: Impact reporting sectors

- Agricultural Operations
- Livestock Production and Rangelands
- Economic, Cultural, Recreation
- Aquatic Species/Riparian Areas
- Terrestrial Wildlife
- Plant Communities/Ecosystem Function
- Hydrology/Water Resources



Impact Reporting Units = HUC 10 Watersheds



AZ-DIRS: Custom Features

- User profile management (customize geographic areas, sectors)
- Observed impacts will be switched on/off each month
- Automated email notifications will remind observers to revisit previously reported impacts (e.g. 'turn off' impact that is no longer occurring)
- Notification when impacts are reported in geographic areas of interest (RSS feeds, email alerts)



AZ-DIRS: Custom Features

- Additional data types (e.g. NRCS/NRCD vegetation monitoring, photo points)
- Google Map platform will allow impact maps to be exported into Google Earth
- Customized reporting (agencies vs. media)
- Integration into Arizona Hydrologic Information System (Rainlog, Arizona Flood Warning & Drought Monitoring System, Arizona Wells Database...)
- Coordination/connection to National Drought Impacts Reporter



Implementation of AZ-DIRS

- Identify key impact reporters (by watershed and sector)
- Training workshops
- Web-based training materials
- Administrative tools → LDIGs manage impact reporter accounts
- Monthly/quarterly reports
- Additional reports based on requests to reporter email list



Stay tuned...

crimmins@u.arizona.edu

<http://cals.arizona.edu/climate>

