

## DUNCAN VALLEY BASIN

### References and Supplemental Reading

#### References

##### A

- Anning, D.W. and N.R. Duet, 1994, Summary of ground-water conditions in Arizona, 1987-90, USGS Open-file Report 94-476.
- Arizona Department of Economic Security, 2005, Workforce Informer: Data file, accessed August 2005, <http://www.workforce.az.gov>.
- Arizona Department of Environmental Quality (ADEQ), 2005a, ADEQSWI: Data file, received September 2005.
- \_\_\_\_\_, 2005b, ADEQWWTP: Data file, received August 2005.
- \_\_\_\_\_, 2005c, Azurite: Data file, received September 2005.
- \_\_\_\_\_, 2005d, Impaired lakes and reaches: GIS cover, received January 2006.
- \_\_\_\_\_, 2005e, WWTP and permit files: Miscellaneous working files, received July 2005.
- \_\_\_\_\_, 2004a, Water quality exceedences by watershed: Data file, received June 2004.
- \_\_\_\_\_, 2004b, Water quality exceedences for drinking water providers in Arizona: Data file, received September 2004.
- Arizona Department of Mines and Mineral Resources (ADM MR), 2005, Active mines in Arizona: Database, accessed at <http://www.admmr.state.az.us>.
- Arizona Department of Water Resources (ADWR), 2008a, Assured and adequate water supply applications: Project files, ADWR Hydrology Division.
- \_\_\_\_\_, 2008b, Industrial demand outside of the Active Management Areas 1991-2007: Unpublished analysis by ADWR Office of Resource Assessment Planning.
- \_\_\_\_\_, 2005a, Flood warning gages: Database, ADWR Office of Water Engineering.
- \_\_\_\_\_, 2005b, Inspected dams: Database, ADWR Office of Dam Safety.
- \_\_\_\_\_, 2005c, Non-jurisdictional dams: Database, ADWR Office of Dam Safety.
- \_\_\_\_\_, 2005d, Groundwater Site Inventory (GWSI): Database, ADWR Hydrology Division.
- \_\_\_\_\_, 2005e, Registry of surface water rights: ADWR Office of Water Management.
- \_\_\_\_\_, 2005f, Wells55: Database.
- \_\_\_\_\_, 1994a, Arizona Water Resources Assessment, Vol. I, Inventory and Analysis.
- \_\_\_\_\_, 1994b, Arizona Water Resources Assessment, Vol. II, Hydrologic Summary.
- Arizona Game and Fish Department (AGFD), 2005, Arizona Waterways: Data file, received April 2005.
- \_\_\_\_\_, 1997 & 1993, Statewide riparian inventory and mapping project: GIS cover.
- Arizona Land Resource Information System (ALRIS), 2005a, Springs: GIS cover, accessed January 2006 at <http://www.land.state.az.us/alris/index.html>.
- \_\_\_\_\_, 2005b, Streams: GIS cover, accessed 2005 at <http://www.land.state.az.us/alris/index.html>.
- \_\_\_\_\_, 2004, Land ownership: GIS cover, accessed in 2004 at <http://www.land.state.az.us/alris/index.html>.
- Arizona Water Commission, 1975, Summary, Phase I, Arizona State Water Plan, Inventory of resource and uses.

## B

Bureau of Land Management, 2005, Springs in the Safford region: Data file received January 2005.

## E

Environmental Protection Agency, 2005a, Surf Your Watershed: Facility reports, accessed April 2005 at [http://oaspub.epa.gov/enviro/ef\\_home2.water](http://oaspub.epa.gov/enviro/ef_home2.water).  
\_\_\_\_\_, 2005b, 2000 and 1996, Clean Watershed Needs Survey: datasets, accessed March 2005 at <http://www.epa.gov/owm/mtb/cwns/index.htm>.

## F

Fisk, G.G., Duet, D.W., Evans, C.E., Angerboth, N.K., and Longworth, S.A., 2004, Water Resources Data, Arizona Water Year 2003: USGS Water-Data Report AZ-03-1.  
Freethy, G.W. and Anderson, T.W. 1986, Predevelopment hydrologic conditions in the alluvial basins of Arizona and adjacent parts of California and New Mexico: USGS Hydrologic Investigations Atlas-HA664.

## G

Gebert, W.A., D.J. Graczyk and W.R. Krug, 1987, Average annual runoff in the United States, 1951-1980: GIS Cover, accessed March 2006 at <http://aa179.cr.usgs.gov/metadata/wrdmeta/runoff.htm>.  
Gila Water Commissioner, 2006, Distribution of Waters of the Gila River, Annual Report No. 70 (year 2005), prepared for the U.S. District Court.

## O

Oregon State University, Spatial Climate Analysis Service (SCAS), 2006, Average annual precipitation in Arizona for 1961-1990: PRISM GIS cover, accessed in 2006 at [www.ocs.orst.edu/prism](http://www.ocs.orst.edu/prism).

## P

Pope, G.L., Rigas, P.D., and Smith, C.F., 1998, Statistical summaries of streamflow data and characteristics of drainage basins for selected streamflow-gaging stations in Arizona through water year 1996: USGS Water Resources Investigations Report 98-4225.

## T

Tadayon, S., 2004, Water withdrawals for irrigation, municipal, mining, thermoelectric-power, and drainage uses in Arizona outside of the active management areas, 1991-2000: USGS Scientific Investigations Report 2004-5293, 27 pp.

## U

United States Geological Survey, 2008, National Water Information System (NWIS) data for Arizona: Accessed October 2008 at <http://waterdata.usgs.gov/nwis>.  
\_\_\_\_\_, 2007, Water withdrawals for irrigation, municipal, mining, thermoelectric-power, and drainage uses in Arizona outside of the active management areas, 1991-2005: Data file,

- received November 2007.
- \_\_\_\_\_, 2006a, National Hydrography Dataset: Arizona dataset, accessed at <http://nhd.usgs.gov/>.
- \_\_\_\_\_, 2006b, Springs and spring discharges: Dataset, received November 2004 and January 2006 from USGS office in Tucson, AZ.
- \_\_\_\_\_, 2004, Southwest Regional Gap analysis study- land cover descriptions: Electronic file, accessed January 2005 at <http://earth.gis.usu.edu/swgap>.
- \_\_\_\_\_, 1981, Geographic digital data for 1:500,000 scale maps: USGS National Mapping Program Data Users Guide.

## V

- Valencia, R.A., J.A. Wennerlund, R.A. Winstead, S. Woods, L. Rile, E. Swanson and S. Olson, 1993, Arizona riparian inventory and mapping project: Arizona Game and Fish.

## W

- Wahl, C.R., S.R. Boe, R.A. Wennerlund, R.A. Winstead, L.J. Allison and D.M. Kubly, 1997, Remote sensing mapping of Arizona intermittent stream riparian areas: Arizona Game and Fish Technical Report 112.
- Western Regional Climate Center (WRCC), 2005, Precipitation and temperature stations: Data file, accessed December 2005 at <http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwDI~GetCity~USA>.
- Wilson, R.P., 1992, Summary of groundwater conditions in Arizona 1985 to 1986: USGS Water Resources Investigation Report, 90-4179.

## Supplemental Reading

- Baker, D. L., and King, K. A., 1994, Environmental contaminant investigation of water quality, sediment and biota of the upper Gila River basin, Arizona: US Fish and Wildlife service, Project No. 22410-1130-90-2-053, 53 p.
- Baldys, Stanley, III, Ham, L.K., and Fossum, K.D., 1995, Summary statistics and trend analysis of water quality data at sites in the Gila River Basin, New Mexico and Arizona: USGS Water Resources Investigations Report 95-4083, 86 p.
- Brown, S. L., Yu, S.K., and Munson, B. E., 1996, The impact of agricultural runoff on the pesticide contamination of a river- a case study on the middle Gila River: ADEQ Open File Report 96-1.
- Bureau of Land Management, 1999, Gila Box riparian and water quality improvement project: Arizona Water Protection Fund Project WPF 95-014.
- Harris, R.C., 1997, Distribution of evaporates and implications for water quality in the San Carlos-Safford-Duncan non-point source management zone: AZGS Open-File Report 97-3, 56 p.
- Harris, R.C., 1996, Distribution of uranium in rocks and radon levels in water in the San Carlos-Safford-Duncan non-point source management zone: AZGS Open-File Report 96-28, 10

p.

Huckleberry, G., 1996, Historical geomorphology of the Gila River: AZGS Open –File Report 96-14, 31 p.

Konieczki, A.D., Anderson, S.R., 1990, Evaluation of recharge along the Gila River as a result of the October 1983 flood: USGS Water Resources Investigations Report 89-4148, 30 p.

Richard, S.M., 1998, Map showing the orientation of layering and faults in the San Carlos – Safford - Duncan non-point source management areas: AZGS Open – File Report 98-8 4 p.

Tellman, B., Yarde, R. and Wallace, M.G., 1997, Arizona’s Changing Rivers: How People Have Affected the Rivers. Water Resources Research Center, University of Arizona.

Trapp, R.A., and Harris, R.C., 1996, Bibliography of the San Carlos-Safford-Duncan non-point source management zone: AZGS Open-File Report 96-20, 58 p.

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