



Date: May 9, 2017

TO: DISTRIBUTION

RE: DESERT CONSERVATION PROGRAM PROJECT COMPLETION NOTIFICATION:
**VIRGIN RIVER BASELINE CONDITIONS ASSESSMENT
2015-STILLWATER 1521A**

The work for the above referenced project has been completed. Please see the attached for all project related information.

The purpose of the above referenced project was:

The purpose of this project was to assist with restoration and acquisition prioritization and planning. Stillwater Sciences conducted a baseline condition assessment for a portion of the Virgin River that flows through Clark County to identify areas best suited for future restoration projects and/or show the greatest value for potential acquisition.

The major accomplishment or findings of this project include:

Tasks accomplished by the project consultant, Stillwater Sciences, included:

- *Ecohydrological Assessment.* Ecological and hydrological factors affecting river and riparian habitat dynamics were assessed for the Gold Butte-Mesquite reach of the Virgin River using geographic information systems (GIS) analysis combined with field survey data.
 - *Flood Scour.* Prior mapping of historical changes in the river position and areas of scour and deposition in the floodplain were used to define the portion of the floodplain that is most likely to be "reset" in the next large flood events (= the flood reset zone).
 - *Relative Elevation Mapping.* A GIS layer representing ground surface height above the low flow water surface of the river was generated from existing high-resolution imagery.

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- *Water Sources.* Irrigation diversions and associated canal/ditch systems, and locations of potentially important return flows to the river, were mapped from recent aerial photography (as available in Google Earth), maps (USGS topographic quadrangles and Google Maps), and the relative elevation GIS layer. In addition, some areas of potential water sources from washes and urban runoff in Mesquite were also mapped.
- *Soils.* Existing NRCS soils maps were reviewed to extract potentially useful information on soil salinity and texture.
- *Vegetation Canopy Height.* A GIS layer representing vegetation canopy height was generated using the existing the November 2011 LIDAR data.
- *Southwestern Willow Flycatcher Habitat.* Documented historical SWFL habitat locations were mapped using available GIS data from the 2011 SWFL breeding surveys, and current SWFL habitat suitability was mapped using results of the Landsat-based model provided by Jim Hatten (USGS).
- *Synthesis.* A GIS analysis was conducted using multiple sources to identify different restoration zones within the Gold Butte-Mesquite reach, and restoration strategies appropriate for each zone.

For more information about this project and/or for other Project Reports or Symposium Reports, please visit our website at: <http://www.clarkcountynv.gov/airquality/dcp/Pages/default.aspx>

If you have any questions, please contact Caryn Wright at (702) 455-2972.

Sincerely,



Marci D. Henson
 Director, Air Quality
 Administrator, MSHCP

cc:

US Fish and Wildlife Service
 Board of County Commissioners (7)
 Permittees' Executive Committee
 Permittees' Process Management Group
 Thomas Boldt, Purchasing
 Catherine Jorgenson, District Attorney – Civil Division
 Desert Conservation Program Community Advisory Committee
 Desert Conservation Program Interested Parties List
 Multiple Species Habitat Conservation Plan Implementing Agencies
 Science Advisor
 SNPLMA Office (for SNPLMA projects)
 Congressional Office
 DCP Staff