State of the San Miguel Watershed 2014 Report Summary

– Full report available at www.sanmiguelwatershed.org or by emailing info@sanmiguelwatershed.org –

The full State of the San Miguel Watershed Report is divided into the sections summarized on this page and includes basic science, monitoring methodology, numbers, analysis, assessments and recommended action items for each subsection. The reports also spotlights past and ongoing watershed activities.

REPORT GRADING SYSTEM

Evaluating the health of an entire watershed is complicated and could be executed by comparing multiple watersheds to establish an understanding of relative health. Unfortunately, there is no comprehensive watershed rating program in which we can participate at this time, so the State of the San Miguel Watershed Report is an independent project. Consequently, it is important to note that if this report were done in comparison to other watersheds around the West, the San Miguel would rank highly overall in terms of healthy, naturally functioning ecosystems. It's also important to remember that the grades are based on undisturbed conditions, so achieving an "A" for any section is unlikely.

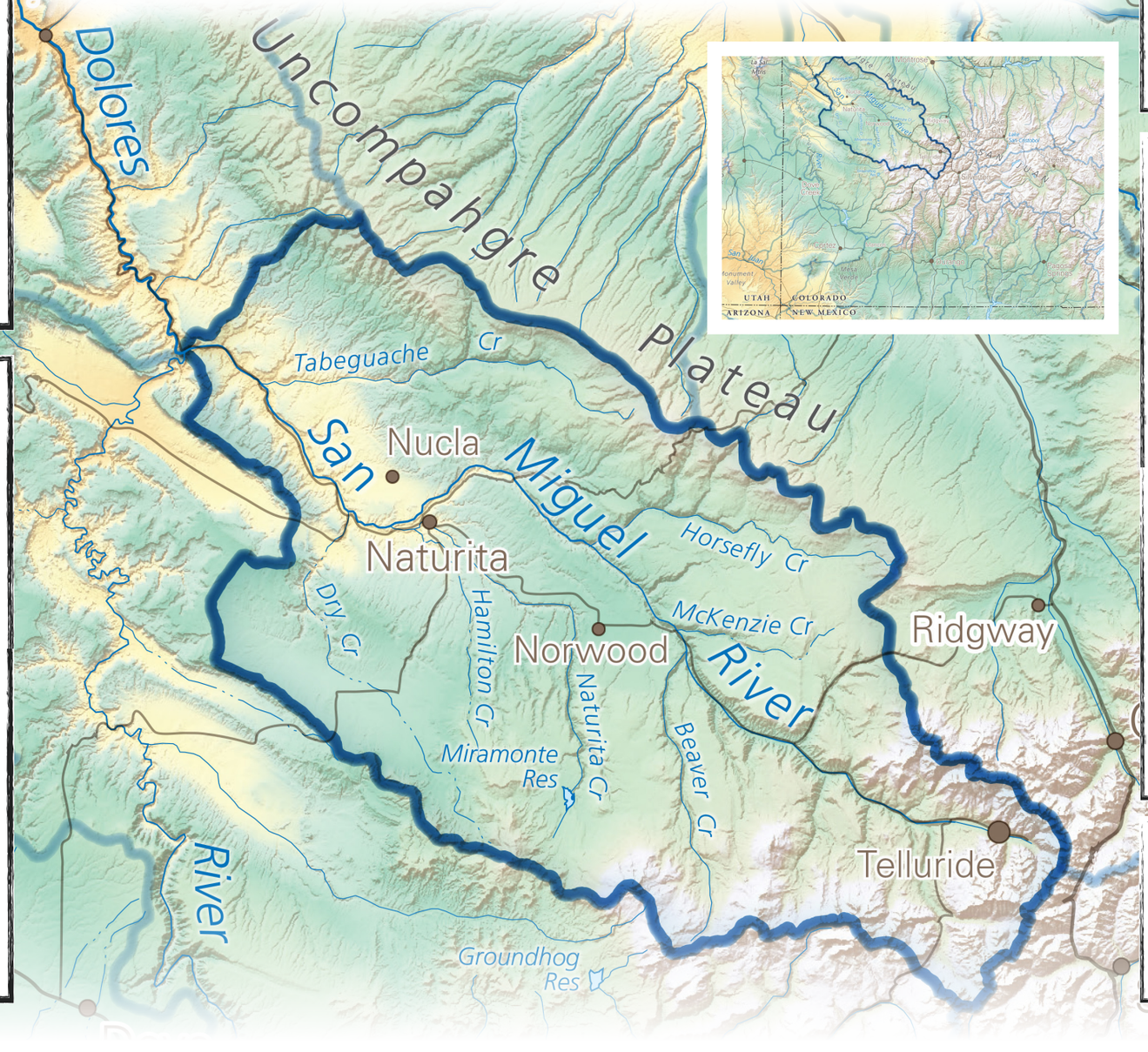
AQUATIC ECOSYSTEM

Water Quality: Water quality monitoring provides direct measurement of biological, chemical and physical conditions in the aquatic environment, and data have been collected from a variety of sources over time. **Letter grades will be assigned after the monitoring dataset is more fully developed**.

Water Quantity: Data were retrieved from the United States Geological Survey gauging stations and compared with optimal baseline conditions for fisheries and the environment as identified by the Colorado Water Conservation Board. **Based on the developed grading rubric, the grade is a "D" because of the low-flow levels in recent years.**

Fisheries: Data were collected by Colorado Parks and Wildlife staff on native warm-water and cold-water species and non-native cold-water species and compiled to measure fish heath and abundance. **A compilation of grades led to a cumulative grade of "B-/C+."**

Macro-Invertebrates: River bugs are collected and analyzed by Bureau of Land Management staff as part of an on-going monitoring program that complies with standards established by the Environmental Protection Agency. **Macro-invertebrate analysis resulted in a "C" grade because of the present populations' diversity and densities.**



CLIMATE

Long-term monitoring stations within the watershed collect data annually, which are available through the National Oceanic and Atmospheric Administration and other sources. While not graded directly, the climatic variables provide good insight into the trends that climate patterns exhibit, which greatly influence the graded monitoring variables. **Subsections include Precipitation, Air Temperature, Deposition, and Extreme Events**.

TERRESTRIAL ENVIRONMENT

Vegetation: Vegetation monitoring transects established by the Bureau of Land Management within the San Miguel Watershed provide the baseline for vegetation analysis. **The combination of non-native species and the high numbers of low-vigor native plants yielded a grade of a "C-/D+."**

Forest Health: Observations for this section rely on information compiled by the Colorado State Forest Service to examine decline in forest cover from insect- and drought-related mortality. **When more information is collected in future reports, and additional monitoring programs are initiated, a grading rubric will be developed for this section.**

Wildlife: The ratios of observed newborn mule deer and elk to the number of elk cows and adult mule deer serve as indicators of overall herd health. **Numbers are low because of environmental constraints, which led to a grade of "C-/D+."**

Soils: Information about soils from current agency monitoring is not widely available, but soil health is an important component of the watershed. The report highlights programs that are in place to encourage soil health and recommends coordination with state and federal agency partners to further refine the opportunities available to gauge soil health.

LAND USE

This section reviews trends related to the impact of humans in the watershed, recognizing that realistic conversations about watershed health need to include the positive and negative effects of human activity. **Subsections include Production, Preservation, Tourism & Recreation and Development**.