

Summary

The extreme rich fens of South Park, Colorado are wetlands with organic soil supported by groundwater with very high nutrient content. These fens provide habitat for two globally rare and eleven state rare plants as well as one globally rare and nine state rare aquatic invertebrates. Two of the major plant communities in these wetlands are restricted to extreme rich fens. These plant communities are found in very few other locations in the world. Given the number of rare plants, animals, and plant communities that occur in these wetlands, extreme rich fens are clearly a natural heritage resource of local, state, and global significance.

This study was initiated with the intent of identifying the locations of all of South Park's extreme rich fens. Locations of twenty-three large and small fens covering a total of approximately 3,625 acres (1,465 hectares) were determined. A map showing these locations is included in this report. During the survey process, over one hundred new records for locations of rare and imperiled plants, animals, and plant communities were added to the Biological and Conservation Database of the Colorado Natural Heritage Program (CNHP). The twenty-three extreme rich fens known from South Park were ranked in terms of their natural heritage significant sites that contain extreme rich fens are profiled in Appendix 1.

Extreme rich fens historically covered approximately 1.4% of the land area in South Park (this is an inclusive estimate that possibly exaggerates their extent. The actual area of extreme fens may be less). It appears that nearly 20% of the total extreme rich fen area in South Park has been permanently lost as a result to peat mining. The extreme rich fens lost include two sites that probably were once among the best representatives of these wetland ecosystems. Alterations of hydrology, especially the building of large and small reservoirs has also adversely affected these wetlands. Water ditching and water diversions appear at this point to have had only a small deleterious effect on extreme rich fens, but long-term effects are uncertain. As water becomes a more expensive commodity in Colorado, more water diversions and removal of groundwater could become serious threats to the natural integrity of these wetlands. Heavy grazing has negatively affected extreme rich fens only very locally and mostly at small sites. In almost all cases noted, grazing effects could be reversed by altering grazing levels and timing.

This report is in part designed to serve as a guide to extreme rich fens for field workers unfamiliar with them. The report briefly contrasts extreme rich fens with the more common intermediate and rich fens of the Rocky Mountains. The appendixes present descriptions of the rare plant species as well as two other species that are particularly diagnostic of these wetlands. The three most important plant communities that occur in these fens are also described. Finally, the reader is given a list of diagnostic characteristics, including a list of plants and plant communities, water quality data, and examples of aerial photos that all indicate the presence of extreme rich fens.