

Sand Flats Recreation Area (SFRA), located near Moab, Utah, is a world-renowned outdoor destination known for its slickrock landscapes and recreational opportunities, drawing over 250,000 visitors annually. However, a critical and overlooked component of this ecosystem is the diverse lichen communities that thrive on the sandstone surfaces. Despite their ecological significance and incredible diversity, these lichens remain largely unstudied. This project aims to address the gap by conducting a comprehensive inventory of lichen diversity in SFRA. The primary objectives are to (1) establish a baseline inventory of lichen species, (2) document populations of rare or sensitive lichens, and (3) assess the impact of recreational activities, such as mountain biking, 4x4 driving, and hiking, on crustose lichens. Through fieldwork, specimen collection, DNA barcoding techniques, and genome-scale sequencing, this research will generate crucial data on lichen biodiversity on the Colorado Plateau. The integration of traditional taxonomy with molecular approaches will help identify potentially new species and enhance our understanding of lichen ecology in this unique region. This work will inform resource management strategies to protect these sensitive habitats from adverse recreational impacts while fostering public awareness. Additionally, the project will provide valuable educational and training opportunities for students and contribute to broader conservation efforts on the Colorado Plateau. The findings will be disseminated through peer-reviewed publications, public outreach events, and collaborations with other researchers in the region.