

FAILINGS IN NAVAJO SEDGE MONITORING AND RECOVERY

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Navajo sedge (*Carex specuicola*) is a hanging garden specialist. Hanging gardens are islands within a dry, desert landscape that is inhospitable for the species outside of the hanging garden habitats. Many mis-steps have been made along the path to gaining an understanding of the taxonomy, range and abundance of Navajo sedge. 1) Explorers failed to document areas where they searched for the plant, but did not find it, which is critical for understanding the island biogeography of this species. They also failed to adequately document where they had found the plants, making re-visits problematic. 2) Navajo sedge is presently known from: Navajo, Canyon de Chelly, and Natural Bridges National Monuments; it is to be expected in Glen Canyon NRA, w/ its extensive hanging gardens, but specimen review indicates that we haven't found it there yet. GLCA Navajo sedge specimens were mis-identified specimens of golden sedge (*Carex aurea*); others were re-assigned to Utah sedge (*Carex utahensis*), a taxon that was named after Navajo sedge was listed. The same kinds of mistakes were made at many other locations, which led to a skewed understanding of the species' range. 3) Our understanding about the relationships between plants in separate hanging gardens has suffered from unsupported assumptions about what constitutes a "population". 4) We failed to define a repeatable procedure for determining plant abundance at a site. Part of the problem is that Navajo sedge is a rhizomatous perennial. Some (perhaps most) sites may be occupied by just a single plant. Many of these problems have been addressed in the last few years and our improved approaches may result in delisting.