Project title: Tabor Lake Bird Population Study
Grant applicant: Susan Bennett, Environmental Interpreter City of Wheat Ridge

Other partners on the project: The City of Wheat Ridge is collaborating with two professors at the Metropolitan State University of Denver. Dr. Christy Carello, Professor of Biology, will develop an avian monitoring program and train students to conduct bird surveys and Dr. Sara Schliemann, Senior Lecturer in Earth and Atmospheric Science, and her students will collect and analyze soil samples.

Project description & goals: Tabor Lake is a former gravel pit located along the Clear Creek Trail within the Wheat Ridge Greenbelt. The island in Tabor Lake offers a communal nesting location and provides safety and food supply for colonial nesting birds along its perimeter and at an island rookery. Periodically, Tabor Lake is stocked with fish by Colorado Parks and Wildlife. The Tabor Lake Rookery supports breeding populations of Black-crowned Night Herons, Great Blue Herons, Snowy Egrets, and Double-crested Cormorants. Based on data collected by Denver Field Ornithologist, Tuesday Birders and eBird, there are populations of Black-crowned Night Herons (>2 to 10 birds), Great Blue Herons (1 to 15 birds), Snowy Egrets (3 to 16 birds), and Double-crested Cormorants (>2 to 200 birds) on the island in Tabor Lake1 . Natural threats to colonial birds include phenomena like hail and snowstorms. The intensity of storms due to climate change can impact our wading bird populations. These storms reduce the egg and chick survival rates. Also, these birds are experiencing habitat loss through human development. The increase in population of the Denver Metro area, specifically along Clear Creek just west of Tabor Lake has resulted in habitat loss. Residents in this area will have direct access to Wheat Ridge Greenbelt and the presence of additional people may add strain to the colonial bird population. Rookery locations are limited in suburban areas and should be preserved whenever possible. To help these breeding populations, the City restricts access to the lake during the breeding season (March 1 – August 1). The trees at the Tabor Lake Rookery are stressed and dying. The City would like to restore this natural resource for the bird populations. Restoring the rookery and the shoreline helps protect habitat for these species and potentially increase their survival rates. In addition, restoration of the rookery will support birding and 1 (Data from: https://dfobirds.org/Birds/CitizenScience/Colonial%20Waterbirds/WATERBIRDS_Species_Locations.pdf). educational opportunities for the general public. This work will be part of our restoration and management plan for the Tabor Lake section of the Wheat Ridge Greenbelt. The City of Wheat Ridge is updating the Open Space Management Plan for the first time since 2002, so this research will be impactful with informing the wildlife component of the plan. The Wheat Ridge Greenbelt and Tabor Lake are birding destinations. Birders from Tuesday Birders, Denver Field Ornithologists colonial waterfowl study, and Denver Audubon bird walks regularly visit as well as many birders who are not affiliated with groups. Restoring this birding destination supports education and conservation efforts for these organization and the City. The City of Wheat Ridge has a funded plan currently in the design phase to create a trail around Tabor Lake. This trail will replace the current social trails with a safe, accessible trail. The trail will also include a new bird blind with views of Tabor Island Rookery and a connection between 44th Ave. and the Peaks to Plains Trail along Clear Creek in the Wheat Ridge Greenbelt. Prior to construction and in conjunction with the Open Space Management Plan revisions, these data will establish a baseline for the bird populations around Tabor Lake. This study addresses the mission of Denver Field Ornithologists by seeking conservation options for habitat that supports numerous species of birds, including several species of colonial birds and looking to preserve a habitat that is highlighted on one of DFO's studies. In addition, preservation of the location allows its use in birding and educational programs. The goals of this study are: • Document status of bird habitat around Tabor Lake through the breeding season. • Document status of rookery trees and soil conditions at the Tabor Lake Rookery. • Determine bird population health and size of sustainable population. • Provide recommendations for habitat management during Tabor Lake Trail construction. • Identify possible restoration methods for the Tabor

Lake Rookery. Deliverables – 1) Evaluation of bird populations through the breeding season. 2) Establish bird population background levels before the construction of the Tabor Lake Trail. 3) Evaluation of the health of the remaining trees on the island. 4) Evaluation of soil conditions on the island. 5) Analysis of bird population health and sustainable population for the Tabor Lake Rookery. 6) Detailed report of possible methods to restore the Tabor Lake Rookery.

Research, education or conservation methods to be used: Research: • The City will collaborate with Dr. Carello and her MSU Denver Ornithology class to create a bird monitoring protocol. It is anticipated that this protocol will continue to be used on a regular basis and incorporated into the revised Open Space Management Plan. • Data from DFO, Tuesday Birders, and eBird will be reviewed and incorporated to enhance understanding of the bird populations in the area. • Health of remaining trees will be determined via International Society of Arboriculture (ISA) assessment procedures. Results will show survival predictions for current vegetation. • Soil will be collected by Dr. Schliemann and students for analysis of texture; organic matter; micronutrient content, electrical conductivity; pH; available phosphorous, potassium, calcium, magnesium, sodium, nitrogen, & sulfur; and cation exchange capacity. Results will show soil viability for plant material growth. • Conduct technical research on rookery preservation through websites and interviews. Results will show possible methods to restore the rookery.
Conservation: • Avian data on the rookery on Tabor Island will be obtained from the shore and evaluation of soil and vegetation on the island will not occur until after the breeding season. • Data analysis will inform construction decisions for the Tabor Lake Trail to minimize impact on breeding birds. • Research will create recommendations to improve the bird habitat over the long term