

City Creek Canyon Avian Survey Proposal

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We propose to examine the three defined experimental “shaded fuel break” (hereafter ‘treatments’) for their relative use by birds during the breeding season (May and June). The use of these areas, compared both pre- and post- treatment, will be evaluated against both the context of the greater City Creek Canyon avifauna, and against avian communities in similar habitat (low-to-mid elevation riparian habitat) statewide. This two-stage evaluation will give us broader ecological contexts in which to interpret: 1) the effects of treatments on the relative use of treated vs. untreated areas; and 2) the relative value of avian habitats in City Creek Canyon as compared to similar habitats statewide.

“Relative use” is assessed using two independently interpreted metrics. The first is *species richness*, a commonly used measure of avian assemblages (aka ‘communities’). It has two parts, the number of species and the community composition. It typically needs interpretation. For example, diversity is good and more diversity better, but not if the additional species are non-native birds, generalist species, or even native species that do not ‘belong’ in riparian habitats. Community measures are interpreted with an eye toward the number of native vs. non-native species, as well as the frequency of use by each species. This level of interpretation gives us insight into the breeding, migratory, wintering, and resident populations of birds. Overall, community composition is typically interpreted as a *gestalt* measure of habitat quality, where higher numbers of native bird species indicates better quality habitat.

The second measure, *abundance*, is more directly related to habitat quality for individual species and individual parcels of land. It can also be used to inform our understanding of the avian assemblage itself. While the interpretation of this metric is straightforward, its calculation is not, as the relative detectability of each species must be corrected for. The general ecological assumption here is that better local quality habitat is able to support more individuals, much like the assumption that better quality habitat will support more species.

The third dimension of avian use is time. Better quality habitat is presumed to support more species, and more individuals, but it is also assumed to do *more consistently over time*. Testing this assumption is also essential to guard against spurious results. Even poor quality habitat can have a good day, but not often and not always. Using bird presence or abundance to make conclusions about its quality as bird habitat is made more reliable by making more than a single visit to a particular parcel of land. Birds are obviously highly mobile, and their presence on any given sampling day can be dramatically effected by weather (e.g., wind, rain) or localized disturbances (e.g., human disturbances, raptor presence). For this reason we strongly recommend sampling a minimum of 3 visits within each season of interest, with up to 5 visits for highly variable communities or where more detailed information is needed. For comparison, our statewide survey effort uses 3 visits within the breeding season.

Proposed Budget:

Project	Estimated Cost / year
20 sample points, 3 visits / year	\$750 (\$250 / visit)
Data Entry, Analysis, & Write-up	\$750
DNR Overhead (18.5%)	\$278
TOTAL	\$1778

Proposed product and timeline:

Jan 15 – Mar 15	Job advertisement, hiring of field crew
April 15	Field crew training
May 1- June 30	Field Surveys
July 1 – Aug 1.	Data entry, QA/QC, prepare initial report with data summaries
Aug 30	Submit & present final (annual) report for approval.