



Citizen Science Guide to the GREAT BLUE HERON Survey Protocol



Objective

The Objective of this survey effort is to determine occupancy and distribution of Great Blue Heron rookeries around the state, using a citizen science survey approach. Efforts will visit historic rookery locations, estimate nest occupancy at individual rookeries, and will help ground truth remote aerial mapping surveys conducted by Montana Natural Heritage Program and Montana Audubon during the winter of 2020.

How to get involved

- Work with Montana Audubon staff to determine the survey site. Sites are available state-wide based on access, data needs, and site management.
- Surveys take place May through June, during daylight hours. Monitor as early as possible in the season before all of the leaves come out!
- Surveys can be conducted in most weather conditions even if there is a light drizzle or light intermittent rain. In the case of very bad weather, counts can be estimated from inside a vehicle if visibility is not compromised. Avoid surveying during thunder storms.
- Give yourself adequate time to find a good rookery observation point. Some may require access via dirt roads, or may have multiple vantage points of variable quality. Be sure to avoid private property. Be sure to bring good binoculars or a scope.
- Minimize rookery disturbance: surveyors should stay at least 200 meters from the rookery to reduce human impacts. Keep an eye on the bird's behavior – if they are acting disturbed (alarm calling, adults flushing or moving around when incubating or feeding) move further away.

At each rookery observation site, using the Heritage Obs. Collector 2.0 on Survey 123:

- Record the observers name, date, start time and end time. Surveys will take one hour.
- Survey 123 will automatically pinpoint your observation location – Record the spatial precision of the observation (e.g the distance to the rookery. In our case this will always be greater than 200m).
- Record a 'Habitat Comment' – In this case, record the dominant tree species in the rookery (e.g cottonwoods, ponderosa, Russian olive, etc.). Keep in mind nests can be in standing dead timber.
 - Record notes like: Have the leaves emerged? Are there multiple ages of trees present? Do beaver seem to be taking a toll on the cottonwoods here?
- Record a 'Location Description' for the location you are observing from (e.g a road pullout on I-90).
- Use the Taxonomic and species drop-down menu to add records for 'Great Blue Herons'.
- Document the observation as a 'Direct', 'Indirect', or 'Nest only' breeding observation type. For 'Direct' breeding, add the highest level of confidence observation (e.g occupied nest, nest with eggs, etc.).
- Collect a photograph for each rookery visited and indicate 'Detection Type'.
- Record any 'Species Comments' (e.g interesting behaviors such as: pair bonding or mating, nest building, a nest exchange of incubating adults, young fighting or exercising their wings, etc.).
- Record the maximum number of adult herons twice each half-hour, recording the higher of the two for each half-hour time period. If juveniles are present, record the maximum number for the entire survey.
- Record the number of nests that can be seen in the colony (regardless of activity level).
 - NOTE – even if birds are not present at the rookery, a "nest only" observation can be recorded.
- Record the number of *active* nests. Nests are active when: there is fresh white-wash on the edge of the nest, adults are on or directly next to the nest, an adult is incubating, or nestlings or juveniles are present in the nest.
- Record the total number of nests in the colony (regardless of activity level). Estimate nests blocked from view.
- Record other species present using the rookery (e.g Great Horned Owls, or Double-crested Cormorants) with the 'add another record' option.