Hawk Migration Association of North America Winter Raptor Survey Protocol

Study Objectives:

1. Provide a scientifically valid protocol to track diurnal raptors' winter population trends across North America.
2. Identify & survey "hot spots" for diurnal raptors during the winter months (December through February).
3. Identify landscape- and habitat associations for North America's wintering diurnal birds of prey.
4. Provide an opportunity for enthusiasts to observe diurnal raptors outside of migration seasons, and for fellowship with those who are like-minded.

Survey Equipment:

1. Survey participants: a minimum of 2 surveyors is needed, but 3-4 are possible. Ideally the number is the same or similar from survey to survey for your route.
   The goals include consistent effort between surveys of the route, everyone's comfort in the vehicle you will be using, group dynamics, your ability to manage the group and to survey along the whole route within a similar time span for each survey of your route.
2. Worksheets.
3. Clipboard and writing utensils.
4. Binoculars.
5. Spotting scope and window mount - not required but helpful.
6. GPS unit or smart phone with geo-app such as GoogleEarth.
7. Safety vests to wear outside winter clothing – for your protection.
8. Field guide – to check id's, as needed.

Dates and Timing of Surveys:

Surveys are conducted in December, January and February only*. If performed only once in a season, a January survey is preferred. If more than one survey is conducted per season, they are held at least 21 days apart.
Surveys along a given route are of greatest value when they are held close to the same date every year, for example always in January, in late December or early February.

Generally, the best time to run a survey route is early morning into the early afternoon. By mid-afternoon on calm days, raptors are often soaring at high altitudes, making them more difficult to detect. Suggested start time is no earlier than 30 minutes after local sunrise, and the suggested latest finish time is 30 minutes before local sunset.
Stops are mainly to complete data entry for observations, and to scan at designated locations along the route that are consistent from survey to survey. Ask participants to bring food and beverages for the duration of the survey so that snack and meal shopping is not needed during the survey.

**Note: participants who started prior to the 2019-2020 season and prefer to perform and enter data for surveys outside of the above period may do so, but are asked to be aware that data from surveys before December 1 or after February 28/29 may not be included in analyses performed.*

Weather:
Survey routes are run when conditions are favorable for detecting birds, and are not run in fog, during steady precipitation or high winds (relative to usual for the area). Reschedule the survey if conditions are likely to be poor, or turn out to be so. If you are ready to start or have started and conditions are adverse, wait 30-60 minutes to see if conditions improve enough to perform a valid survey.

Survey Routes:
Surveys are conducted while driving along a pre-determined route, in the same direction every time, and may include *pre-determined, safe stopping points used each survey*, to increase detectability of raptors. If choosing to use scanning stops, prior to running your survey, choose locations with anticipated sightings and good pull-outs. These are the same scanning stops you will use from survey to survey. If you have decided against any standard stopping points, stops are only to confirm or document observations made from the moving vehicle.
Routes primarily follow roads that allow driving at slower speeds (ideally <45mph), are reliably passable in winter, and ideally provide safe shoulder or pull-off spots even after snowfalls. Open country (open rangeland, pasture, cropland, grassland, etc.) is preferred, as a vehicle-based survey is not well-suited to detection of birds in cover and forests. There may be short stretches that are not ideal but tie together stretches meeting these criteria. Routes avoid closely parallel road and avoid backtracking, to ensure double-counting does not occur.
Route lengths from 20 miles to 60 miles are preferred as surveys must be completed before dusk, and longer surveys may poise recruitment problems for leaders.

<u>Routes established prior to 2019</u>:
When able, please provide the WRS Committee with an indication of whether or not you have been performing scanning stops, their locations, how consistent these locations have been between surveys, and your plan moving forward. When stops have been consistent, please continue these same stops. Otherwise, please choose the most frequent pattern you have followed, and indicate what your ongoing plan is for the locations of scanning stops on future surveys.

<u>New routes:</u>
Before conducting a survey along a new route, provide the proposed route to HMANA's Winter Raptor Survey Committee for review.
Provide a narrative description of the route. Include starting location (road intersection or name), location of planned scanning stops, ending location, and habitat descriptions (see listing of terms below). Indicate the length of your route in miles. Provide turn-by-turn driving directions, to ensure you always run exactly the same roads and sequence, and in case your route is taken over by others in the future.
Include a file to show the route on the land. Use Google Earth to prepare a .kmz file of your route (YouTube videos can provide instruction in the steps).

Survey Procedure:
1. At the beginning of each survey, use the worksheets to document ambient conditions and participant names. Consider placing a sign in the vehicle's rear window and another in the right-side rear passenger window reporting that you are performing a wildlife survey, to explain to other motorists the reason for your slower driving and pull-offs.
Designate roles for the participants: who will document starting and end conditions, who holds the GPS device and calls out the readings; who will write down the data during the survey.

2. Start driving the route, and identify, locate, and record all diurnal raptors you observe, regardless of their distance from the road. Be conservative; if you think you may have already recorded a bird, do not record it again.

3. When a raptor is spotted, document the time of the observation, latitude/longitude values of where *you* are, species (if sure*,* also the age category and sex), position of the bird (perched, flying, soaring), and *optionally* the type of habitat(s) within 100-m of the bird (please see **Habitats** below).
*We are looking mainly for accurate species identification***.** For the species id, please see **Addendum A**.
If using a smart phone location app., simply note the location reading, and stop the vehicle at the nearest safe pullout to complete form date entry or confirm id as necessary.
Limit the duration of scanning stops to a max. of 5 minutes each, to avoid location bias in your data.

For each raptor detected, record if the bird's position was initially *perched, flying or soaring*.
"Soaring" describes a bird that is high in the air, primarily not flapping. Since birds use flying and soaring differently, and soaring can be a sign of specific environmental conditions that produce thermals, this differentiation may be helpful in analyses such as those that examine bird detectability or consider the effects of changing environmental conditions.

Notes – any additional information you may wish to include regarding the raptor sighting, which may include: presence of prey; interactions with other species; Harlan's RTs; Merlin subspecies; details if the bird is rare; other habitats not included in the habitat list (see below).

Habitats (OPTIONAL**)** – The general classification of habitat(s) within 100-m of where the raptor was initially observed. This may be possible only for perched and low-flying or near birds. On a given survey, you may elect to provide habitat descriptors for all perched birds, and for flying or soaring birds that are close, but to omit them for more distant flying or soaring birds.
Use as many habitat descriptors as apply; up to 4 classifications can be indicated for each sighting.
Analysis of conservation value may be derived from these data, when they are provided.
We recognize this may add considerable work, especially for surveys with many observations, and that it may be difficult to assign ground descriptors to distant, high-flying or soaring birds. Thus, we leave this descriptor *optional*.
If you want to be able to use habitat descriptors during surveys, consider performing a run along your route before first snowfall (depending on your locale!), and documenting the various agricultural designations for your reference during the survey season. Examining satellite imagery such as Google Earth for the area can reveal water features that may be hidden from the road, but may not reflect current land use (in terms of agricultural designations) as images may be one or more years old.
You can print out satellite imagery of your route area to carry when performing surveys. This can be added to your survey clipboard as a portable aid to document your agricultural designations each season.

Please see habitat designations in **Addendum B**.

4. Rare Species: If you note a bird unusual for your location or time of year, use the worksheet's Notes section to detail the identifiers you observed and any relevant observations about the bird's behavior and the location, as well as whether the bird had been previously documented in the area. The WRS committee may contact you for more information about a rare sighting.
Please be aware HMANA may not receive survey reports in a timely manner, nor will our volunteer WRS committee members necessarily review incoming reports in real time. Therefore, if you wish to publicize

a rare bird observation, in situations when you do not think this will compromise the bird's well-being, please submit your report via other platforms, as well as submitting your data to HMANA. Additional options include your region's records committee and/or eBird.
Before making your observation public, consider the bird's welfare, as sometimes harassment from birders and photographers can be anticipated. Here (https://help.ebird.org/customer/en/portal/articles/1006789-guidelines-for-not-publicizing-certain-bird-observations) is useful guidance on how to protect birds whose reported presence may attract too much attention.

5. Your survey is complete when you have reached its end point. Record the ending conditions on the worksheet.

6. Review the worksheets for legibility and completeness.

7. Preferably within 2 weeks, go to the WRS Data Entry Page (http://wrs.hmana.org) and enter your data. First time surveyors will need to create a login and password to access the site.

Additional Gear

Although these are roadside surveys for which you will be in your vehicle most of the day, we recommend that you plan for variable weather and unpredictability.
Bring:
●appropriate footwear and clothing for any stops, and beverages and food for surveys that may last more than a couple hours;
● a GPS unit or a Smart phone running a geo-app like GoogleEarth (as long as you have predetermined that that your route will always be within signal range);
● *extra GPS batteries or the smart phone's car charger.*

Thank you for your participation in the only continent-wide project to identify North American wintering raptors!
The WRS Committee requests that you complete all of the season's on-line data entry before the end of March that season.

-WRS Committee, with thanks to HawkWatch International whose 2017 protocol was adapted for HMANA's purposes.

11-1-2019

Addendum A: List of Raptor Species, and possible information to be documented:

BLVU Black Vulture (*Coragyps atratus*)
TUVU Turkey Vulture (*Cathartes aura*)
OSPR Osprey (*Pandion haliaetus*) Female/Male
WTKI White-tailed Kite (*Elanus leucurus*) Adult/Immature
GOEA Golden Eagle (*Aquila chrysaetos*) Adult Female/Adult Male/Immature (year if possible)
NOHA Northern Harrier (*Circus hudsonius*) Adult Female/Adult Male/Immature
SSHA Sharp-shinned Hawk (*Accipiter striatus*) Adult/Immature
COHA Cooper's Hawk (*Accipiter cooperi*) Adult/Immature
NOGO Northern Goshawk (*Accipiter gentilis*) Adult/Immature
BAEA Bald Eagle (*Haliaeetus leucocephalus*) Adult Female/Adult Male/Immature (may use Notes to describe plumage and indicate year, if reasonable certainty)
SNKI Snail Kite (*Rostrhamus sociabilis*) Adult Female/Adult Male/Immature
HRSH Harris's Hawk (*Parabuteo uncinctus)* Adult/Immature
WTHA White-tailed Hawk (*Geranoaetus albicaudatus)*
GRHA Gray Hawk (*Buteo plagiatus*) Adult/Immature
RSHA Red-shouldered Hawk (*Buteo lineatus*) Adult/Immature
BWHA Broad-winged Hawk (*Buteo platypterus*) Light/Dark morph, Adult/Immature
SWHA Swainson's Hawk (*Buteo swainsonii*) Light/Intermediate/Dark morph, Adult/Immature
RTHA Red-tailed Hawk (*Buteo jamaicensis*) Adult/Immature and Light/Rufous/Dark morph
RLHA Rough-legged Hawk (*Buteo lagopus*) Light/Dark morph, Adult Female/Adult Male/Immature
FEHA Ferruginous Hawk (*Buteo regalis*) Light/Dark morph, Adult/Immature
CRCA Crested Caracara (*Caracara cheriway*) Adult/Immature
AMKE American Kestrel (*Falco sparverius*) Female/Male
MERL Merlin (*Falco columbarius*) Adult Male/Others
APFA Aplomado Falcon (*Falco femoralis*) Adult/Immature
GYRF Gyrfalcon (*Falco rusticolus*) White/Gray (Adults), Gray/Dark (Immatures), Adult/Immature
PEFA Peregrine Falcon (*Falco peregrinus*) Adult/Immature
PRFA Prairie Falcon (*Falco mexicanus*) Adult/Immature

Owl species (optional) and possible information to be documented:
BNOW Barn Owl (*Tyto alba*) Female/Male
WESO Western Screech-Owl (*Megascops kenicottii*)
EASO Eastern Screech-Owl (*Megascops asio*)
GHOW Great Horned Owl (*Bubo virginianus*)
SNOW Snowy Owl (*Bubo scandiacus*)
BDOW Barred Owl (*Strix varia*)
GGOW Great Grey Owl (*Strix nebulosa*)
SEOW Short-eared Owl (*Asio flammeus*) Female/Male
NSWO Northern Saw-whet Owl (*Aegolius acadicus*)

You may use the Notes section of the worksheet if you wish to provide further information re id such as sex, morph, or hybrid status.

Addendum B.: Habitat descriptors

For both your route description and information about individual raptor observations, we use the following habitat classifications:

AgD = dirt agriculture: agricultural ground that has been tilled to bare dirt or very short stubble, not high enough to provide shelter for mice or voles.
AgF = fallow agriculture: agricultural land that has not been used for at least a few years and is over-run by grass, weeds, and shrubs (this is different from grassland which has not been cultivated).
AgG = green agriculture: new agricultural growth including cover crops.
AgH = ***hayfields****:* artificial grassland for hay production.
AgA = animal agriculture*:* open areas typically used for grazing or holding animals, with or without animals.
AgS = stubble agriculture: cut ag fields w/out green growth.
AgU = ***unspecified agricultural land:*** Examples: you are unsure what kind of surface lies under the snow or beyond sight, or specific agricultural descriptors don't seem to apply.
Brn = burn: active or smoldering fire.
Dev = developed: indicates *the presence of human development* including individual homes, businesses, and industrial areas, except for power poles or utility wires (which are assumed to be present for a road-side survey).
Fst = forested: any forested landscape such as deciduous or coniferous forest, aspen groves, etc. etc.
Shr = ***shrubland****:* scrub, thickets; if desert area, use ***Dst*** descriptor.
Grs = grassland: native grassy areas without trees (or very sparse), ie prairie or savannah.
Wtr = wetland/pond/marsh/riparian: indicates the presence of water (whether or not apparently "open"), either permanent, seasonal, or intermittent, inc. developed features (ditches, wastewater facilities, aquaculture), lakes, streams, marshes, etc.
Rds = *roadsides:* area immediately adjacent to road, when bird is perched on it or appears to be hunting along it.
Dst = *Desert*: desert with or without desert shrubs.
Oth = other**:** any other habitat classifications or non-agricultural unknown designation; use the Notes section to explain the habitat types not covered by the specific descriptors, or if you are including incomplete habitat data for a given sighting. Example: you see buildings within 100m, and use ***Dev***, but did not survey the route prior to snowfall and are unsure whether the land is grassland, or contains a water feature.