



# Nelson County Raptor Project

Natural Nelson

*How to learn everything you need to know about local birds of prey, conduct field observations, use science to destroy a land-thieving corporate parasite, and defend the land, wildlife, and people of beautiful Nelson County.*

# ABOUT NATURAL NELSON

In light of the pressing threat to the health and safety of our home landscape posed by the proposed Atlantic Coast Pipeline (ACP) citizen efforts to prevent the worst effects of this most irresponsible and corrupt incidence of corporate malignancy have blossomed. Natural Nelson is one of those citizen efforts. Our mission is to research and catalog those aspects of the natural world which have the greatest degree of federal legal protection, with a mind towards utilizing the data we collect to stall, stymie, bleed, undermine, and generally prevent any attempt to devastate the countryside. To that end, we are currently focusing our attention on the great diversity and abundance of raptors (hawks, eagles, and falcons) who call Nelson County home.

This document details the actions necessary for interested landowners and concerned citizen volunteers to effectively monitor and collect data on raptors living on land potentially affected by the ACP.

# OUR LOCAL RAPTORS

Nelson County is home to three species of Buteos, or Soaring Hawks, two Accipiters, or Sparrowhawks, two Falcons, and two Eagles. We also share our county with Ospreys and Harriers. All are federally protected under the Migratory Bird Treaty Act of 1918.

A good field guide is indispensable, and will be necessary for all field work performed by volunteers as yet unable to distinguish between species or sexes. The following summary is no substitute for a proper field guide.

## EAGLES

### GOLDEN EAGLE

#### *AQUILA CHRYSAETOS*

These majestic creatures are our largest raptor. They are extremely rare in the lowlands, and fairly uncommon even at higher elevations.

Golden Eagles construct platform nests of large sticks, usually on cliff faces, but occasionally in the tops of very tall conifers and deciduous snags. The same nest will remain in use for many generations.



### BALD EAGLE

#### *HALIAETUS LEUCOCEPHALUS*

These are our most common eagle. Juvenile Bald Eagles are frequently mistaken for Golden Eagles. Though initially similar, in that they are large, brown raptors, the two species are quite different in appearance. Pay attention to beak shape, wing shape, size, and coloration.

Bald Eagles construct platform nests of large sticks, usually atop large deciduous snags. Nests are almost always within several hundred meters of water, with good sight-lines all around.

## BUTEOS

### RED TAILED HAWK

#### *BUTEO JAMAICENSIS*

Our largest hawk, Red-Tails are unmistakable in flight. Look for a dark head and shoulders, a red or pale tail, and dark, distinctly spread 'fingers' at the wingtips (the primary feathers).

Red Tails construct platform nests of sticks, branches, and leafy debris atop tall canopy trees in mature forests. They prefer Oaks, especially those in the White Oak branch of the *Quercus* genus. Red Tails favor at least one open sightline, and so often nest on steep slopes. Open canopies and moderate to heavy shrub layer in the forest are preferred. Red Tails compete fiercely with Great Horned Owls for nest sites, as the Owls do not construct their own nests, and exclusively utilized nests made by Red Tailed Hawks.



### RED SHOULDERED HAWK

#### *BUTEO LINEATUS*

Our second-largest hawk, Red Shoulders are identifiable by their namesake ruddy arms and (for the males) upper breast. All have pale bellies otherwise, and boldly barred pale-and-black wings, with black wingtips. Their tails are similarly boldly barred, with slightly wider pale bars in our area than elsewhere in the state.

Red Shoulders construct platform nests of sticks, branches, and leafy debris atop tall canopy trees in mature forests. They prefer Oaks, especially those in the White Oak branch of the *Quercus* genus. Red Shoulders prefer slightly denser, moister forest than Red Tails, cove forest and seasonally wet meadow edges in particular. Most Red Shoulder nests are found within 200m of water.

## BROAD WINGED HAWK

### *BUTEO PLATYPTERUS*

Our smallest Buteo, often confused with the Accipiters (see following section) Broad Wings have pale bellies, dark spotted breasts, darker heads and shoulders, very boldly barred black-and-white tails, and a characteristic black-and-white margin all the way around the edge of their pale wings.

Broad Wings construct platform nests of sticks, branches, and leafy debris in the crotches of canopy trees. Again, Oaks are preferred. Broad Wings favor edge habitat for nesting- along meadows, glades, and breaks in the woods- but do not tend to nest in the dense stands of young trees common near recently cleared land.



## ACCIPITERS



### COOPER'S HAWK

#### *ACCIPITER COOPERII*

The larger of our two native sparrowhawks, Cooper's are sleek and streamlined, but with a characteristic heavy body. Both Accipiters have a distinctive long-tailed, rectangular-winged silhouette. Cooper's have dark grey backs, pale breasts with dark barring, and clearly-stripped dark and light wings. Cooper's flies with a unique rapid flap.

Cooper's construct platform nests in the middle-canopy of large forest trees like Oaks and Maples. Dense understory and dense groundcover- ideal habitat for the songbirds that constitute their primary prey- are preferred in nesting areas.

### SHARP SHINNED HAWK

#### *ACCIPITER STRIATUS*

Our second-smallest raptor, Sharp-Shinned look like smaller, more delicate versions of their cousins the Cooper's. Like Cooper's, Sharp-Shinned has a long, narrow tail, and slightly pointed rectangular wings. In Nelson County, many of our resident Sharp-Shinned preserve the brown plumage of adolescence well into adulthood. Sharp-Shinned are most often seen jinking and weaving through understory vegetation, hunting sparrows.

Sharp-Shinned have similar nesting preferences to Cooper's, if anything preferring even denser understory. Bamboo copses and old Pine plantations may be home to Sharp-Shinned nests, if Barred Owls already resident in these areas haven't pushed them out.



## FALCONS



### PEREGRINE FALCON

#### *FALCO PEREGRINUS*

These large, heavy-bodied falcons are uncommon residents of rocky outcrops and tall conifer forests in the uplands of the Blue Ridge. Occasionally their hunting forays will carry them to lower elevations. The streamlined silhouette and bold markings are unmistakable. Peregrines have a black 'helmet' over a yellow and black beak, with a pale underside frequently stippled with black feathers. Their wings are sharply pointed and tipped with dark primary feathers.

Peregrine nests are always in high areas surrounded by clear sightlines and reliable updrafts. Cliffs are preferred, but they will occasionally nest atop tall snags and conifers.

### AMERICAN KESTREL

#### *FALCO SPARVERIUS*

Our smallest raptor, brilliantly-colored Kestrels are frequently visible hunting beside roadways and in power-line cuts. Kestrels are notable for their brightly barred dark-and-light wings, ruddy breasts and tails, and distinctive black-and-white eye stripes. The only bird similar in appearance to a Kestrel is a Sharp-Shinned, but these have very different hunting preferences, flight patterns, and coloration. Kestrels are not shy, and should be easy to identify.

Kestrels are our only cavity-nesting raptor, preferring to nest in old woodpecker holes in the middle canopy. Snags and older trees are favored, as are maintenance ports atop high-wire lines. Occasionally Kestrels will nest in the lower levels of particularly old Eagle or Red-Tailed Hawk nests. Kestrels hunt in meadows and fields, and do not like to fly far from their nests to their main hunting grounds.



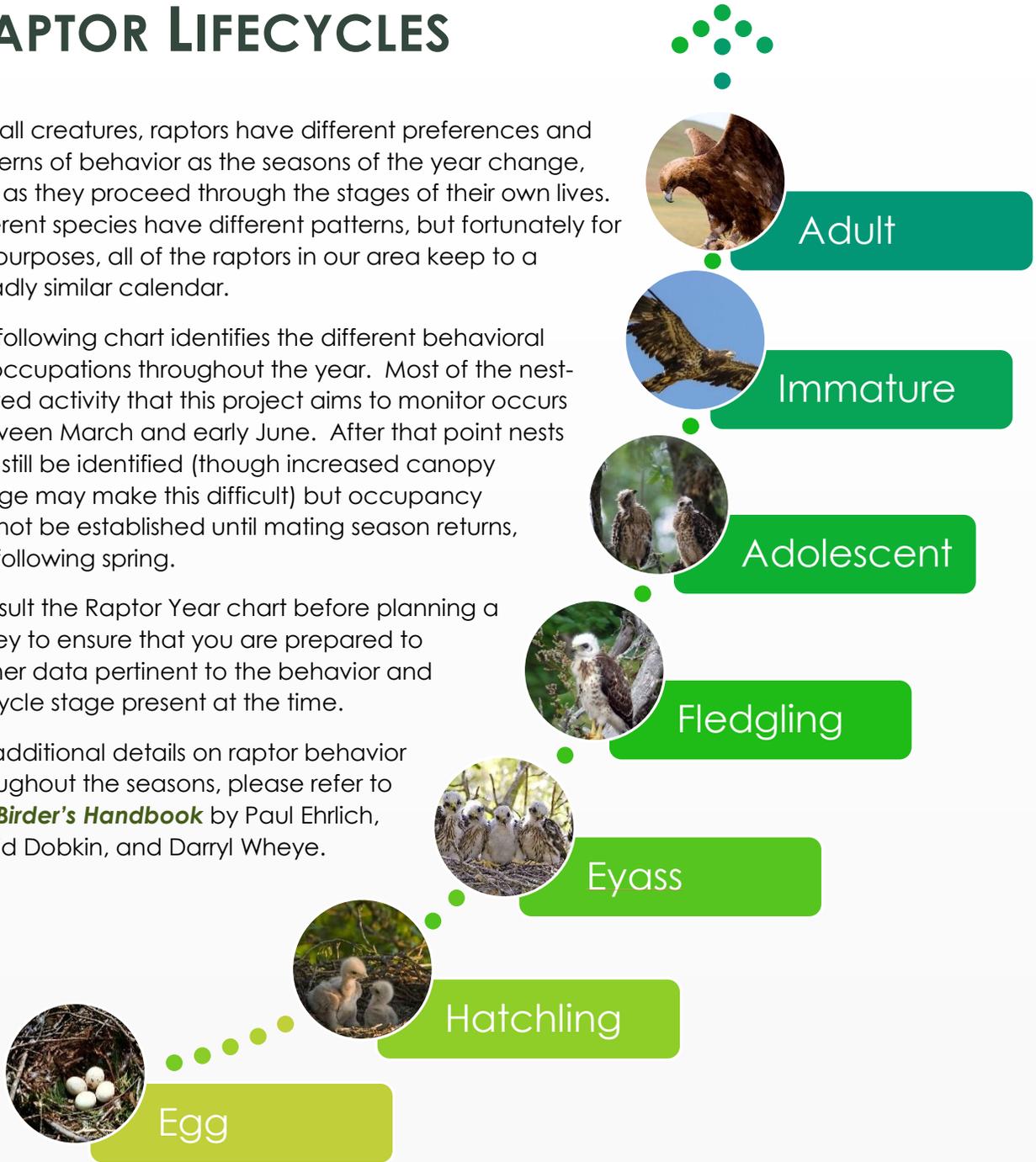
# RAPTOR LIFECYCLES

Like all creatures, raptors have different preferences and patterns of behavior as the seasons of the year change, and as they proceed through the stages of their own lives. Different species have different patterns, but fortunately for our purposes, all of the raptors in our area keep to a broadly similar calendar.

The following chart identifies the different behavioral preoccupations throughout the year. Most of the nest-related activity that this project aims to monitor occurs between March and early June. After that point nests can still be identified (though increased canopy foliage may make this difficult) but occupancy cannot be established until mating season returns, the following spring.

Consult the Raptor Year chart before planning a survey to ensure that you are prepared to gather data pertinent to the behavior and lifecycle stage present at the time.

For additional details on raptor behavior throughout the seasons, please refer to ***The Birder's Handbook*** by Paul Ehrlich, David Dobkin, and Darryl Wheye.



# THE RAPTOR YEAR



# WORKING IN THE FIELD

In order to gather information that will ultimately prove useful to the end of protecting the natural heritage of Nelson County, certain protocols must be followed in the course of performing field observations. We have striven to simplify standard raptor nest survey process as much as possible, but there are a few guidelines that nevertheless must be adhered to if you intend to utilize this project as an effective defense of your home country.

## **EQUIPMENT YOU WILL NEED**

Raptor Project Worksheet

Writing Implement

Writing Surface (Clipboard, Binder, Book, etc.)

Portable GPS Unit

Satellite or Topo Map of Area

## **EQUIPMENT YOU WILL PROBABLY NEED**

Binoculars

Field Guides to Birds & Plants

Sensible Clothing

Camera

## THE RAPTOR PROJECT WORKSHEET

Alongside this introductory document is a **Raptor Project Worksheet**. This document is to be used primarily for the study of nests, but can also be used to document regular appearances of adults or juveniles at certain 'hot-spots' on the land. **It is extremely important that all sections of the worksheet be filled out.** The absence of qualifying data like weather and time of day make any observations far less useful to the overall project. Explanations of the specific sections follow:

### LOCATION ADDRESS & PROPERTY OWNERS

This field identifies where in the county your survey takes place. Important information for determining habitat hot-spots.

### START TIME/END TIME

This identifies time of day. Visibility, bird activity, and other factors are affected by time of day. If you perform repeated observations of the same nest and/or area, try to conduct observations at different times of day.

### NUMBER & NAMES OF OBSERVERS

The number of people taking simultaneous observations of the same nest and/or area affects the reliability of the count. Too few people, and the count could be off. Too many and your presence may be scaring the birds into hiding. The ideal number of observers for a single nest or area is between two and four.

### WEATHER

Brevity is the soul of useful data. Record whether or not it's precipitating, foggy, windy (from which direction and roughly how hard it's blowing) and any other conditions pertinent to visibility, observer awareness, and/or bird behavior.

### VEGETATION

This is a brief description of the dominant canopy, understory, and groundcover species makeup of the area within 100m of the nest and/or observation area. This allows us to determine if there are local habitat preferences that would need to be taken into account when determining overall mortality rates from construction and operation of the ACP.

### RAPTOR CODES

This is a shorthand way of identifying which stage of the life the raptors you observe are in. Obviously this will change over time if you perform repeated observations of the same nest. This important to record, especially for repeat observations, so as to get data on how many nestlings survive from one stage of life to the next, how long they remain in each stage of life, and, once they fledge, how long they remain within the nest area. All are valuable data for establishing total raptor population, and thus maximal bureaucratic headaches for

those intending to kill them all. See **The Raptor Year** for details on each stage of life. For identification, please refer to field guides, the internet, local experts, common sense, etc.

### **RAPTOR SPECIES**

You must identify the raptors you observe. 'Hawk' is not an acceptable identification. If you are unsure of your ability to identify birds on sight, carry a field guide and a pair of binoculars. Photograph all unknown species, and compare with field guides, the internet, etc. at your leisure back home until an ID can be confirmed. Eventually you'll get the hang of it.

### **SEX**

The ratio of females to males within a given area tells a great deal about the long-term health of the local population. All of our local raptors are sexually dimorphic (the males and females look different). Females are larger and heavier bodied, with thicker bills, more muscular legs and necks, and wider wingspans. Males are smaller and more gracile, with brighter plumage. Sometimes, especially with juveniles, the differences can be subtle. When in doubt, photograph and check against guides at home.

### **TREE SPECIES**

Identifying primary nest trees is of vital importance. We can infer additional, unseen raptor nests with a more detailed understanding of their local preferences. More raptors accounted for means greater obstacles to a pipeline. Again, if you are rusty on your species ID, carry a guide and a camera. Take leaf and twig samples home with you to confirm if necessary.

### **LOCATION**

This is a brief description of where, in relation to other landmarks, the nest or observation area is located. It will help other observers to locate the nest. It will also help you to remember where it is. Moreover, in the unlikely event that Dominion or its subsidiaries hires goons to disturb or kill the hatchlings to avoid paperwork and/or fines, you'll know exactly where the commotion is, and which clear firing lines, ambush sites, etc. to utilize in defense.

### **GPS LABEL**

Please tag all nest areas with a GPS device. Label all GPS points using the following rubric: First letter of last name of property owner + nest/area + number, in order of sites found on that property. For instance, the third nest found on the property of Emiliano Zapata would be labeled "Znest03". Natural Nelson can add species information later, after all IDs have been confirmed. See **A Day in the Field** for information on submitting GPS coordinates.

### **DESCRIPTION**

This is a brief description of the activity of the individuals observed. Notes should be made of mating, aggression between individuals, egg-laying, hatching, feeding, grooming, and resting, along with any unusual or striking vocalizations. For greater insight into what these behaviors imply, please refer to **What the Robin Knows** by Jon Young.

## A DAY IN THE FIELD

What follows is a point by point description of all of the steps leading up to your field observations, the protocol for the observations themselves, and all follow-up work necessary to ensure that your data ends up where it will do the most good.

### BEFORE THE SURVEY

1. Decide upon an area to survey for nests and/or raptor activity hot-spots. Prime locations would be stands of old-growth trees, areas with stable deer populations, areas with high understory plant species diversity, known nests, areas of known raptor activity, unbroken woodland near water, seldom-visited woodland near meadows or fallow fields, cliffs, known tall snags, and areas from which can be heard raptor vocalizations.
2. Schedule a survey date. Assemble a crew of fellow observers. Ideally, send a team of no fewer than 2 and no more than 4 individuals to survey each nest or hot-spot. Multiple teams can, and should, survey each site. Make use of the Natural Nelson Volunteer Database if additional observers are necessary.
3. Print out all necessary materials. This includes enough **Raptor Project Worksheets** for everyone in the group, and at least one satellite or topo map of the area per survey team. Use both sides of the paper- somebody else is trying to prevent the destruction of their backyards for paper manufacture, just like we're trying to protect ours.
4. Gather all necessary equipment: GPS device, field guides, binoculars, camera, clipboards, pants, etc.
5. Assemble on site at the prearranged time. Record the start time of the survey, weather conditions, survey location information, and team numbers and names.
6. Before charging off into the woods take a moment to stop talking and observe the local conditions. Stop talking. Listen. Continue to not talk. Pay attention to your breathing patterns. Pay attention to your posture and walking gait. Pay attention to which direction the wind is blowing. Pay attention to any bird or frog song. Listen with your ears, not your mouth. When you all are ready, move into the survey area as a team.

## CONDUCTING THE SURVEY

1. Typical hikers scare the crap out of every bird and mammal within about a quarter mile of their location. Don't scare the wildlife, or your observations will be less useful. Step carefully into the survey area. Birds conduct a great deal of their communication through posture. Think about your own posture. Move slowly and deliberately. Step in such a way that you minimize noise. Look at the canopy. Look at the understory. Look at the groundcover.
2. Keep your eyes and ears peeled for raptor sign. This could include: Pellets of vomited hair and bone on the ground, large patches or sprays of droppings, scatters of bloody feather or fur, worn patches on head-height branches with good sightlines, and passing shadows or silhouettes in the canopy. Listen for abrupt silences in ambient songbird noise, alarm calls, and raptor vocalizations. If you are unfamiliar with what raptors sound like, or how to distinguish between raptors, familiarize yourself with audio recordings before going into the field.
 

Bird kills by raptors can be distinguished from bird kills by mammals by examining the feathers. Raptors pluck feathers from avian prey with their beaks, leaving a pair of small kinks at the base of the quill. Mammals tear or shear feathers out leaving the quills twisted, torn, or bent.
3. Keep a lookout for nests. Most nests appear as piles of sticks, sometimes with leaves still attached, usually located in the crotches of strong branches in the upper canopy. See **Our Local Raptors** for information on species nest site preferences.
4. When approaching a nest be aware of raptor parent presence. They will notice you before you notice them. If they seem agitated or upset, move away. Ideally, you should observe the nest from the greatest distance possible, which also affords clear sightlines to you. Binoculars and cameras are helpful. On the first trip to each nest, approach as closely as you can without unnecessarily tormenting the parents to tag the location with your GPS device. Future observations of already-tagged nests will not require further tagging (but you will still need to record the name of the GPS point in question).
5. If possible, count eggs, hatchlings, nestlings, fledglings, parents, juveniles, or any other individuals present. Try to figure out and record the sex of all adult birds.
6. Record simple description of local vegetation height, density, and species makeup in the vicinity of each nest and/or hot-spot.
7. Record all observations, including incidental observations of plants or other wildlife. Tag all such observations with the GPS. Label all GPS points using the following rubric: First letter of last name of property owner + observed item + number, in order of items found on that property. For instance, the first Cow Know Salamander found on the property of Emma Goldman would be labeled "Gsally01".
8. Leave the survey area as quietly and carefully as you entered it. Amend your record of the weather, if necessary. Record the end time of the survey period

## AFTER THE SURVEY

1. High-fives all around; celebrate with a cold one at Blue Mountain.
2. Collect all **Raptor Project Worksheets**. Scan and email them to [naturalnelsonian@gmail.com](mailto:naturalnelsonian@gmail.com). Alternatively, worksheets can be gathered and delivered to the drop box/counter at Trager Bros. Coffee at the RVCC. Scanned and emailed would be preferable.
3. Upload all GPS data. Convert to .kms or .kml format and email to [naturalnelsonian@gmail.com](mailto:naturalnelsonian@gmail.com).
4. If any photographs were taken that could be used by Natural Nelson, please also send those to [naturalnelsonian@gmail.com](mailto:naturalnelsonian@gmail.com). Include photographer name, date, and location taken, along with any pertinent species information.
5. Plan your next survey. The more repeated observations of the same sites, the better. Information on nestling and fledgling survival rate is extremely valuable.

## FURTHER OPPORTUNITIES

There are many citizen science projects that could be yet be undertaken in Nelson County. Feel free to use this framework as a building block towards creating and running your own citizen science project.

Volunteering for an existing project is invaluable and entirely necessary to the ultimate task of protecting our beloved land and community. It is even better to pursue your own project with zeal and excellence. Each of us is uniquely talented, able to safeguard and nourish the health and well-being of this place in a thousand different ways. It is our choice whether or not to rise to the occasion. The enemies of Nelson County expect a rabble of undisciplined followers. They have no defense against a coalition of independent strategists, innovators, and highly motivated small groups.

The wind in this country is a hurricane wind. Our people stand side by side with hawks and eagles. Working together, land and people, we will prevail. The good earth between these rolling mountains will blossom through us into another season.

**NATURAL NELSON**