

Coastal Northern Goshawk - *Stads K'un* Identification Workshop (Haida Gwaii)



Stads K'un (wings brushing boughs)
Haida Gwaii's national bird



Photos: Harvey Thomas, Veronica Woodruff, TimberWest, Paul Chutvik and Ryan Murphy

24-Feb-2014

Workshop Objective

How to identify, document and report Northern Goshawk (*Accipiter gentilis laingi*): detections, signs, nests, habitat and behaviour.



This workshop is intended for forestry workers and other professionals conducting work on forested lands.

Photo: Harvey Thomas

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Workshop Overview



- ◉ **MODULE 1:** Status
- ◉ **MODULE 2:** Biology
- ◉ **MODULE 3:** Identification
- ◉ **MODULE 4:** Habitat
- ◉ **MODULE 5:** Now What?

Goshawk Coastal Subspecies
Accipiter gentilis laingi
Queen Charlotte Goshawk
Stads K'un

Photo: TimberWest

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MODULE 1: Status



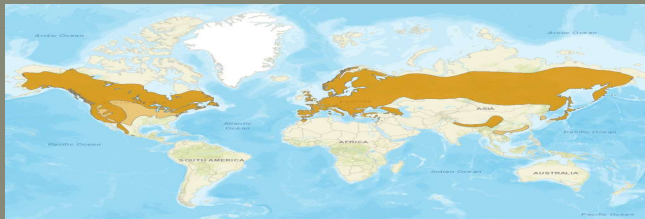
- Distribution and Range
- Conservation Status
- Population Trend
- Primary Threats
- Recovery Strategy Goals and Objectives
- Implementation Plan

Photo: Rory Hill

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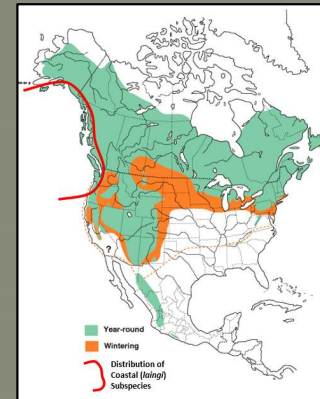
Northern Goshawk Global Range

- Restricted to forested habitats of the northern hemisphere.
- Widely distributed, but uncommon to rare across their range.



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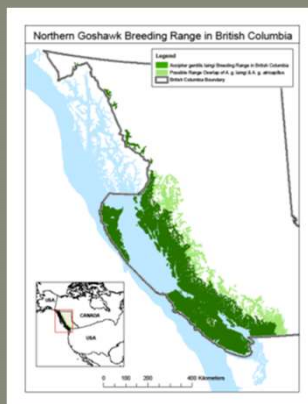
Northern Goshawk North American Range



- Across most of Canada and the western United States.
- Resident across most of its range in N. America.
- Short, southern movements in winter when prey species are low in number.
- *laingi* subspecies is restricted to the Pacific Northwest.

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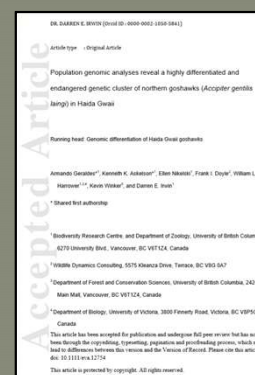
Northern Goshawk B.C. Range



- Coastal subspecies *laingi* occurs west of the Coast Range (dark green)
- Interior subspecies *atricapillus* occurs east of the Coast Range
- Possible range overlap and interbreeding of the 2 subspecies (light green transition zone)

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Goshawk Coastal Subspecies Recent Genomics Analysis



(Geraldes et al. 2018)

- Results suggest that *laingi* predominates only in Haida Gwaii, *atricapillus* predominates elsewhere
- Results do not change the taxonomy of Northern Goshawk in BC
- Federal gov't and BC CDC looking into implications
- Both subspecies are provincially ranked as species at risk

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Goshawk Coastal Subspecies Population Trend

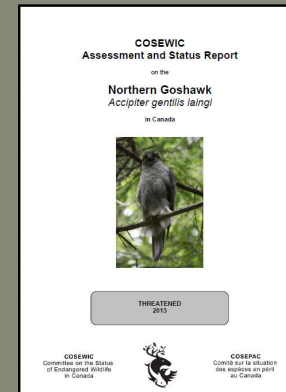


Photo: John Deal, Harvey Thomas

- Provincial population trend is unknown
- Habitat trend has declined since historic capability (likely population trend as well)
- Haida Gwaii population trend unknown but monitoring indicates low occupancy

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Goshawk Coastal Subspecies Conservation Status

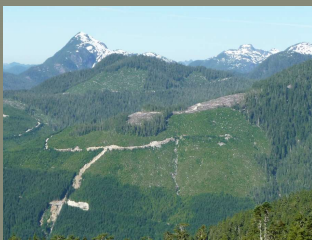


- Nationally – Threatened
- Provincially – *laingi* is **Red-listed** (equivalent to Endangered or Threatened)
- Provincially – *atricapillus* is **Blue-listed** (equivalent to Special Concern)

The genetically distinct, small population size on Haida Gwaii combined with ongoing threats suggests a high risk of extinction

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Goshawk Coastal Subspecies Primary Threats



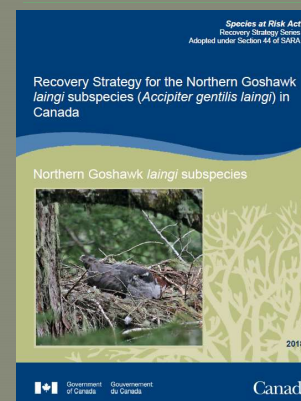
- Habitat loss and fragmentation
- Forest seral stage conversion
- Reductions in prey diversity, abundance and availability
- Disturbance near nests
- Haida Gwaii:
 - Genetic isolation
 - Introduced species (deer)
 - Livestock conflict (chickens)

Primary Threats are exacerbated by the biology of the species, including: high mortality and low reproduction and survivorship.

Photo: Paul Chylok

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Federal Recovery Strategy (2018) Federal Recovery Goals



- Sets the strategic direction to arrest or reverse the decline of the species in Canada
- Includes short-term and long-term population and distribution objectives
- Identifies nesting and foraging critical habitat

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B.C. Recovery Implementation Plan (2018) Provincial Implementation Plan Goals

Implementation Plan for the Recovery of Northern Goshawk, *laingi* Subspecies (*Accipiter gentilis laingi*) in British Columbia



Prepared for the Ministry of Forests, Land,
Natural Resource Operations and Rural Development

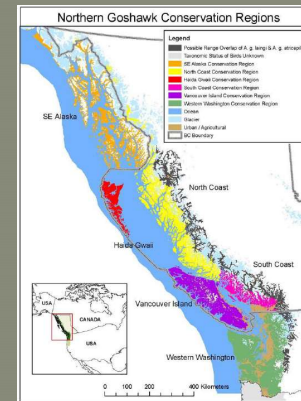


February 2018

- The provincial IP outlines senior provincial government direction on how to manage and recover Northern Goshawk *laingi* subspecies
- The provincial IP differs from the federal RS in some key areas, particularly around managing foraging habitat, long-term population objectives, and list of Critical Habitat sites

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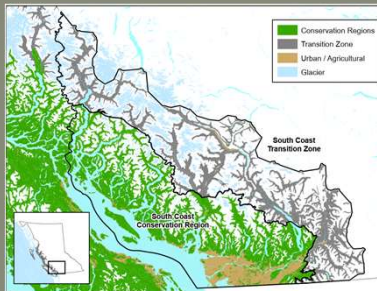
B.C. Recovery Implementation Plan (2018) Provincial Implementation Plan Goals



- Contains management actions and commitments to meet population and distribution objectives and long-term recovery goals
- Home range targets, existing landscape-level habitat protection, and total habitat “gaps” are provided for each conservation region
- Ongoing progress on priority actions in the IP is a high provincial priority

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B.C. Recovery Implementation Plan (2018) Transition Zone



- The IP contains specific population and distribution objectives, and management actions for the Transition Zone
- Suitable breeding area habitats will be prioritized for reserve implementation in the Transition Zone

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B.C. Recovery Implementation Plan Short-term Objectives

- By 2020, protect at least 95 new priority breeding areas
 - 5 in Haida Gwaii
 - 30 in each of the 3 other regions
- Research foraging habitat requirements
- By 2020, update the Implementation Plan and determine foraging habitat management recommendations

More information, the BC Implementation Plan is available at:
https://www2.gov.bc.ca/assets/gov/environment/plants-animals-and-ecosystems/species-ecosystems-at-risk/recovery-planning/implementation_plan_for_the_recovery_of_northern_goshawk.pdf

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Goshawk Coastal Subspecies Other Provincial Management Tools



- Currently 35 WHAs established for coastal goshawks
 - 2 WHAs on Haida Gwaii (4437 ha)
- Goshawks are a focal species in the Great Bear Rainforest (+ BA WHA establishment)
- Goshawk habitat protected in a variety of conservation designations and Parks & Protected Areas
- Sec. 34c of the Wildlife Act

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Additional Management Tools – Haida Gwaii

- The Haida Gwaii LUOO contains Objectives for goshawk habitat:
 - Currently 3242 ha is protected under Sched. 12 Northern Goshawk reserves
 - Minimum 200 ha reserves established around known nests
 - Reserve zones established around new nests
- 14 reserves have been established to protect goshawk habitat



5/28/2019

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MODULE 2: Biology



Photo: Roger Hill

- Breeding
- Nesting Chronology
- Hunting
- Prey Species
- Predators

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Adult Coastal Subspecies Biology Breeding



Photo: Harvey Thomas

- Most males initiate breeding at 3 years of age.
- Some females may breed as early as 1-2 years old.
- Adults do not necessarily breed every year.
- Annual occupancy rates are variable (Vancouver Island 55% and Haida Gwaii 30%).

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Goshawk Coastal Subspecies Biology

Nesting Chronology



Courtship and Breeding (late February to April)

- Males perform aerial displays to attract females.
- Pairs mate and nest is built.



Incubation Phase (May)

- Female lays 1-4 eggs, one every 2 days, and incubates for 30-32 days.
- Male provides female with food.

Photos: Terma Lohia and Rob Armstrong

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Goshawk Coastal Subspecies Biology

Nesting Chronology



Nestling Phase (late May to late June)

- Chicks hatch and remain in the nest (38-42 days), fed by the adults.
- Male forages afar; female close by.



Fledgling Phase (late June to mid-August)

- Males fledge earlier than females.
- Chicks begin to fly, but stay close.
- Still fed by the adults (35-55 days).

Photos: TimberWest and TimberWest

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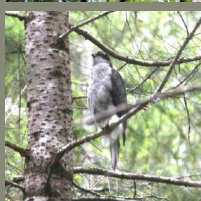
Goshawk Coastal Subspecies Biology

Nesting Chronology



Dispersal (mid-August to early September)

- Adults stop feeding young.
- Fledglings' feathers harden and birds disperse from nest area.



Non-breeding Season (October to January)

- Female moves to wintering area.
- Male remains in or near the breeding territory.

Photos: TimberWest and Todd Manning

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Adult Coastal Subspecies Biology

Hunting



- Generally, do not soar in open habitats when hunting or foraging.
- Instead, they have an ambush style of hunting.
- Goshawks use a stop-and-go, perched, short-stay and leave hunting style.
- Generalist predator of medium-sized bird and small mammals.

Photo: TimberWest

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Goshawk Coastal Subspecies Biology

Preferred Prey Species



Thrushes

- Varied Thrush
- Swainson's Thrush
- Hermit Thrush
- American Robin



Woodpeckers

- Hairy Woodpecker
- Northern Flicker
- Red-breasted Sapsucker

Photos: John Schwarz and John Gatchet

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Goshawk Coastal Subspecies Biology

Preferred Prey Species



Grouse and Jays

- Sooty Grouse
- Steller's Jay



Mammals

- Red Squirrel (introduced)

Seasonally (winter)

- Waterfowl

Photos: Bill Hobick and Kim Smith

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Goshawk Coastal Subspecies Biology

Predators



Adults have few natural predators. Young may be preyed upon by:

- Bald Eagle
- Red-tailed Hawk
- Raccoon
- Black Bear
- American Marten

Photo: Jacques Morin

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MODULE 3: Identification



- Coastal vs. Interior
- Adult vs. Immature
- Perched vs In Flight
- Young
- Similar Species
- Vocalizations
- Signs

Photo: Rory Hill

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Identification Coastal Subspecies Variation



**Interior
*atricapillus***



**Coastal
*laingi***

Photos: Douglas Herr and Rory Hill

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Identification Adult Coastal Subspecies (Perched)



- Overall smudgy or sooty appearance.
- Fine barring and streaking on breast.
- Upright perched posture.
- Dark cap and face mask with lighter eyebrow stripe.

Photo: John Deal

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Identification Adult Coastal Subspecies (Perched)



- Contrast between dark back and lighter breast.
- Barred tail is round and has a whitish tip.
- Conspicuous eyebrow stripe.

Photo: Rory Hill

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Identification Adult Coastal Subspecies (Perched)



- Conspicuous white undertail coverts that are flared when agitated.
- Slightly smaller than a raven in size.
- Adults look notably 'fierce' or 'angry' when disturbed.

Photo: Harvey Thomas

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Identification

Adult Coastal Subspecies (Perched)



- Subadult (2-3 years old) has some brown feathering on back.
- Adult (4 years and older) has dark, blue-black back.

Photos: Mel Dittie and Mark Schwarz

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Identification

Adult Coastal Subspecies (Perched)




- Subadult (2-3 years old)**
 - Grey-black feathering.
 - Yellow/orange to mahogany coloured eye.
- Adult (4 years and older)**
 - Black feathering.
 - Red eye.

Photos: Todd Mahon and USFWS

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Identification

Immature Coastal Subspecies (Perched)



- Few distinguishing characteristics.
- Mottled brown overall.
- Darker head.
- Long, rounded tail with wavy barring and lighter coloured tip.

Photo: John Deal

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Identification

Immature Coastal Subspecies (Perched)



- Thick, brown vertical streaking on breast.
- Tan upper breast, fading lighter below.
- Indication of a lighter eyebrow stripe.
- Upright perched posture.

Photo: Jack Williamson

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Identification

Adult Northern Goshawk (In Flight)



- Uniformly grey below.
- White undertail coverts.
- Long, barred tail.
- Dark back.
- Dark head with lighter eyebrow stripe.
- Bulky body with powerful, stiff wingbeat.
- Long, rudder-like tail for manoeuvring through forest.

Photos: Mathias Puter, Mikko Pyhälä and Holly Marker

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Identification

Northern Goshawk (In Flight)



Video: BBC

Body adapted to pursue prey through forest.

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Identification

Immature Northern Goshawk (In Flight)



- Few distinguishing characteristics.
- Heavily mottled brown from below.
- Distinct barring on underwings.
- Long-tailed with dark barring.
- Faint eyebrow stripe.
- Flight pattern is weaker or clumsier than adult.

Photos: Alexander Viduckiy, Steve Poland and Steve Poland

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Identification

Northern Goshawk (In Flight)



Video: Nib Uniku

Distinctive flight pattern: flap-flap-flap-glide.

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Identification

Northern Goshawk (Courtship Flight)



Deep, slow, deliberate wingbeats – 'butterfly' flight.

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Video: Marcus Nash

Identification

Goshawk Coastal Subspecies(Young)



14-17 days old



32-34 days old

- ◉ Until 10-12 days, all white down.
- ◉ Day 14, first dark pin feathers begin to appear.
- ◉ Day 24, young are partially feathered and half the size of an adult.
- ◉ Day 32, young are mostly feathered and practice flapping in the nest.
- ◉ Day 34, males fledge.
- ◉ Day 42, females fledge.

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Photos: TimberWest and TimberWest

Identification

Northern Goshawk (Young)



Nestlings around 12-14 days of age.

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Video: Aaron Allred

Identification

Goshawk Coastal Subspecies (Young)



Nestling around 36-38 days of age.

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Video: Barry Witteveen

Similar Species Identification Sharp-shinned Hawk



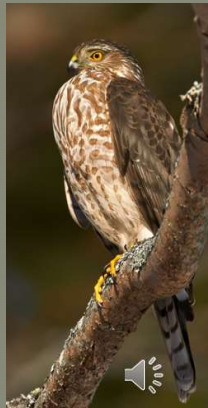
½ the size of goshawk

Adult

- Dark grey back.
- Chestnut barred front.
- Black cap, no eyebrow stripe.
- Thin, delicate legs.
- Barred, squared and long tail.

Immature

- Coarse brown streaking on light coloured breast.



Photos: Tonia Irvine and Beverly Lee

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Similar Species Identification Red-tailed Hawk



Slightly larger than goshawk

Adult

- Overall mottled dark brown.
- Darker belly-band.
- Rufous upper side of tail.

Immature

- Similar to adult, but with buffy coloured breast.

In Flight

- Short, red, fanned tail.
- Dark 'armpit' patches.



Photos: Bob Moul and David Levenson

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Similar Species Identification Common Raven



Bulkier and larger than goshawk

Adult and Immature

- Large, all black body.
- Shaggy throat.
- Large bill.
- Perches more horizontally.

In Flight

- Long, wedge-shaped tail.
- Flaps more frequently.

Photos: Dick Daniels and Sergey Yeliseyev

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Questions?



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Goshawk Coastal Subspecies (Adult) Vocalizations



- Adults are generally quiet most of the year.
- Give alarm calls during the breeding season or when agitated.
- Pitch varies among individuals.
- Females call deeper in tone than males.
- Females give wail calls to elicit male to bring food.

Photo: TimberWest

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Goshawk Coastal Subspecies (Adult) Vocalizations



Adult responding to alarm call playback.

Video: TimberWest

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Goshawk Coastal Subspecies (Immature) Vocalizations



- Start giving begging calls by 3 weeks of age.
- By 5.5 weeks of age may start giving alarm calls.



Photos: TimberWest, Harvey Thommas and TimberWest

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Mimic Species Vocalizations



Jays and Sapsuckers

- Can give convincing mimics of both goshawk alarm and begging calls.
- Jay mimic calls can be particularly misleading.
- Have patience, the mimic species almost always inserts at least one of its own calls or songs while it is mimicking.

Photos: Corey Shearwater, Jeff Maw and Paul Shumline

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Goshawk Coastal Subspecies Signs



Prey Remains

- Plucked feathers, bones and fur tufts of prey species.
- Found on the forest floor, plucking posts, or at the base of nest trees.



Plucking Posts

- Used regularly or habitually.
- Typically an elevated stump, mossy mound, log, branch or snag; frequently in sight of the nest.

Photos: Paul Chivuk and Paul Chivuk

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Goshawk Coastal Subspecies Signs



Moulted Feathers

- Adult flight and tail feathers are frequently shed or moulted during the nesting season.
- Often found on ground near nest.



Pellets

- Indigestible bones, fur and feathers are regurgitated in pellets.
- Typically grey, tubular, 2-6 cm long.

Photos: Ryan Murphy and Sue McDonald

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Goshawk Coastal Subspecies Signs



Whitewash

- Defecate over the nest and at roosts where whitewash accumulates.
- Easier to detect on even ground or on vegetation with large leaves.



Eggshells

- Pale bluish-white and are about the size of a small chicken egg.
- Adult removes the eggshell from nest and discards it on the ground.

Photos: Timber West and Ryan Murphy

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MODULE 4: Habitat



Photo: Rory Hill

- Nesting Habitat
- Foraging Habitat
- Nest Trees
- Nests
- Mistletoe Structures
- Active or Inactive?

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Goshawk Coastal Subspecies Nesting Habitat



Photo: Pamela Zevit

Nesting Habitat Suitability is likely based more on:

- stand structure rather than on stand age and tree species composition
- abundance and accessibility of prey rather than prey species diversity

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Goshawk Coastal Subspecies Nesting Habitat



Photo: Paul Chayok

Preferred Stand Structure

- closed canopies
- open understories
- structural complexity
- subcanopy flyways
- suitable nesting platforms

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Goshawk Coastal Subspecies Nesting Habitat

Preferred Stand Characteristics

BEC Zone

- **Suitable:** CWH (all except vh)
- **Less Suitable:** CWH (vh) and MH (all)
- **Unsuitable:** AT

Tree Species

- **Highly Suitable:** western hemlock and sitka spruce
- **Moderately Suitable:** red alder and black cottonwood
- **Unsuitable:** yellow-cedar, western red cedar, lodgepole pine, mountain hemlock

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Goshawk Coastal Subspecies Nesting Habitat

Preferred Stand Characteristics

Stand Height

- **Highly Suitable:** stands > 27 m
- **Moderately Suitable:** stands 23-27 m
- **Unsuitable:** stands < 23 m

Stand Age

- **Highly Suitable:** old (SS 7) and mature (SS 6) ≥ 90 years old
- **Moderately Suitable:** young (SS 5); approx. 65-89 years old
- **Unsuitable:** pole/sapling (SS 4); < 65 years old

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Goshawk Coastal Subspecies Nesting Habitat

Preferred Stand Characteristics

Canopy Closure

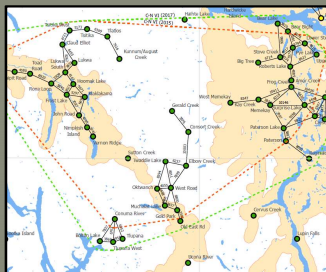
- **Highly Suitable:** 50-75% canopy closure

Slope

- **Suitable:** ≤ 60% slope
- **Less Suitable:** 61-100% slope
- **Unsuitable:** > 100% slope

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Goshawk Coastal Subspecies Breeding Territory Size



Spacing between breeding territories varies regionally and on the quality of habitat and availability of prey.

Territories are spaced, on average:

- 6.9 km* apart on Vancouver Island
- 10.4 km apart on Haida Gwaii

Photo: Parks Canada Agency

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Goshawk Coastal Subspecies Foraging Habitat



Foraging habitat is more varied than nesting habitat and includes:

- Forests
- Wetlands
- Estuaries
- Edges
- Subalpine
- Alpine
- Clearcuts

Photos: Paul Chytrik, Paul Chytrik, Public Commons and Public Commons

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Goshawk Coastal Subspecies Foraging Habitat



Goshawks will forage in any habitat that has available and accessible prey.

Habitats with:

- Structural complexity
- Abundant flyways
- Open understories
- Greater canopy cover

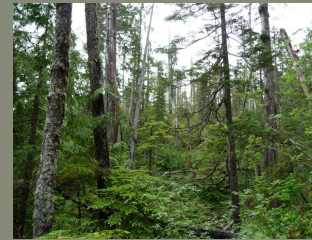
better facilitates the goshawk's surprise and ambush hunting technique.

Photo: Paul Chivuk

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Goshawk Coastal Subspecies Foraging Habitat

Poorer Quality Foraging Habitats



Open canopied stands with dense, cluttered understories.

Dense, pole-stage stands with heavy canopy cover, few flyways and little understory.



Photos: Paul Chivuk and Paul Chivuk

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Goshawk Coastal Subspecies Nest Trees



It remains unclear why goshawks choose a particular nest tree over others.

Most nest trees are:

- Live conifers.
- One of the larger or taller trees in a stand.
- Sufficiently sized branches to support a nest structure.
- Has adjacent open sub-canopy flyways.

Photo: Ross Vennesland

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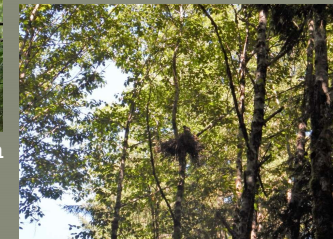
Goshawk Coastal Subspecies Nest Trees

In Second Growth Forests (rare on Haida Gwaii)



Nests are generally built on a deformity, adjacent to old/mature forest (in HG)

Deciduous trees with large branch forks to support a nest structure may be used.



Photos: Ross Vennesland and TimberWest

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Goshawk Coastal Subspecies Nest Trees

Preferred Nest Tree Characteristics

Tree Species	<ul style="list-style-type: none"> ◉ Preferred: western hemlock and Sitka spruce ◉ Less Preferred: western redcedar, red alder and black cottonwood ◉ Not Preferred: yellow-cedar, lodgepole pine, mountain hemlock
Location	<ul style="list-style-type: none"> ◉ Preferred: > 200 m of recent hard edge ◉ Less Preferred: < 200 m of recent hard edge ◉ Not Preferred: along recent hard edge

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Goshawk Coastal Subspecies Nest Trees

Preferred Nest Tree Characteristics

Tree Size	<ul style="list-style-type: none"> ◉ Preferred: taller with large dbh and suitable branches or mistletoe for nest platforms ◉ Less Preferred: smaller with deformities (i.e. forked tops) ◉ Not Preferred: trees < 20 m tall
Terrain	<ul style="list-style-type: none"> ◉ Preferred: even slopes, mid-slope flat benches and toes of slopes ◉ Less Preferred: uneven, steep slopes with deep ravines ◉ Not Preferred: very seep, craggy topography

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Goshawk Coastal Subspecies Nest Trees



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Photos: Veronica Woodruff, TimberWest, Veronica Woodruff and TimberWest

Goshawk Coastal Subspecies Nest Trees



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Photo: Kiren Dhanwant

Goshawk Coastal Subspecies Nest Trees



Photo: Jacques Morin

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Goshawk Coastal Subspecies Nest Trees



Photo: Jacques Morin

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Goshawk Coastal Subspecies Nests



Most Mature and Old Growth Nests Are:

- ◉ Built against the tree trunk.
- ◉ On the first live branch from the ground.
- ◉ Between 15-25 m height.
- ◉ 1/3 to 1/2 way up the tree.



Photos: Paul Chivik and Ryan Yenneland

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Goshawk Coastal Subspecies Nests



Most 2nd Growth Nests Are:

- ◉ Built on deformities such as mistletoe structures, branch whorls or forked-tops.
- ◉ 2/3 to 4/5 up the tree.



Photos: TimberWest and Ryan Murphy

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Goshawk Coastal Subspecies Nests



Photos: Michael Shepard, Ryan Murphy, TimberWest, and TimberWest

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Goshawk Coastal Subspecies Alternate Nests



Alternate nests are commonly built in the breeding area and are used in successive years. It is unclear why goshawks use them.

- Usually built in different trees, but a single tree can have multiple nests.
- VI territories typically had 3 alternate nests, but can have over 10.
- On average, 275 m apart on Vancouver Island and 375 m apart on Haida Gwaii.
- Can be < 50 m apart, or > 1 km apart.

Photo: Casfor

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Goshawk Coastal Subspecies Nest Starts



Inactive nest start in 2017 (left) and active nest in 2018 (right).

- In some cases, goshawks start to build a nest and abandon it before it is fully constructed.
- Nest starts may remain incomplete for years or be added to in subsequent years.



Photos: Ryan Murphy and Ryan Murphy

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Goshawk Coastal Subspecies Mistletoe Structures



Mistletoe structures can look very convincingly like a goshawk nest from the ground.

Photos: Paul Chytok, Paul Chytok and Paul Chytok

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Goshawk Coastal Subspecies

Other Large Stick Nests



- Some forest raptor nests can be similar in appearance to goshawk nests, making them difficult to differentiate.
- At times, species may use one another's nests.
- Sometimes the only way to confirm what species the nest belongs to is to see the bird.
- Look for fresh signs.

Photo: Paul Chivuk

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Goshawk Coastal Subspecies

Other Large Stick Nests



Sharp-shinned Hawk and Common Raven

- Typically, built higher in the tree than goshawks.
- Often more concealed by tree foliage and branches.
- Can be the same size as goshawk nest, but made with thinner branches.
- Raven nests are made with shorter, dead branches or sticks.

Photos: Paul Chivuk and BC Biodiversity Centre

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Goshawk Coastal Subspecies

Other Large Stick Nests

Red-tailed Hawk



- Red-tailed Hawks nests are sometimes larger in size, in branch crotches, more exposed and in upper tree crown.

Photo: National Geographic

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Goshawk Coastal Subspecies

Other Large Stick Nests

Bald Eagle



- Typically, build nests near the top of the tree and close to waterbodies.
- Nests are large in size.
- Use thicker, dead branches and sticks for nest structure.

Photos: Wikimedia Commons

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Goshawk Coastal Subspecies Other Large Stick Nests



Great Blue Heron

- Typically nest in colonies up to 20-25 nests and near the coast.
- On Haida Gwaii, they nest singly or in small groups (< 5 nests), further inland.
- Nests are smaller, more ball-shaped or raggedly, and often out on branches, not against the tree trunk.

Photo: Bob Elmer

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Goshawk Coastal Subspecies Active or Inactive Nest?



An incubating female can be difficult to detect on an active nest.

The following may help to determine if the nest is active or not.

- Robustness
- Greenery
- Feathers
- Flies
- Spiderwebs
- Whitewash
- Pellets, Eggshells and Prey Remains

Photo: Bob Brett

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Goshawk Coastal Subspecies Active or Inactive Nest?



Active nests often look fresh and fluffy due to the newly added branches.

Robustness

A newly built or repaired nest often appears robust, non-slumpy, and full-looking from the ground and may indicate the nest is active.

Photo: Ross Yenneland

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Goshawk Coastal Subspecies Active or Inactive Nest?



Fresh greenery added to top layer of an active nest.

Greenery

Live conifer branches are often added to the nest each year, some still having green needles. This fresh greenery may be visible from the ground and may indicate the nest is active.

Photo: TimberWest

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Goshawk Coastal Subspecies Active or Inactive Nest?



Moulted nestling down feathers caught in the nest branches.

Feathers

- Breast feathers from the female's brood patch or down feathers from the nestlings often get caught in the nest structure.
- Moulted adult feathers may also be found at the base of the nest tree.

Photo: Paul Chirvak

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Goshawk Coastal Subspecies Active or Inactive Nest?



Black fly infestations at active nests may jeopardize chick health and can even contribute to nestling mortality.

Flies

Flying insects (e.g., flies, black flies, gnats and mosquitoes) are often seen above active nests. Flies feed on prey remains in the nest, while blood-seeking insects feed on the young birds.

Photo: Paul Chirvak

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Goshawk Coastal Subspecies Active or Inactive Nest?



Note the biting gnats pestering the nestlings.

Video: TimberWest

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Goshawk Coastal Subspecies Active or Inactive Nest?



An inactive goshawk nest with a thin layer or spider webs where the nest meets the tree trunk.

Spiderwebs

Spiderwebs are sometimes seen above the nest. If the nest was active, then the adult birds would likely brush these away when flying in and out of the nest. If they are present, it may indicate the nest is inactive.

Photo: Ross Youngland

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Goshawk Coastal Subspecies Active or Inactive Nest?



Accumulation of whitewash at the base of an active nest tree with three nestlings.

Photo: TimberWest

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Whitewash

At one week of age, nestlings begin to defecate over the edge of the nest. Whitewash amounts depends on how many young are present, how cluttered the ground is below the nest, and if recent rains have washed it away.

Goshawk Coastal Subspecies Active or Inactive Nest?



Pellets, Eggshells and Prey Remains

Fresh pellets, eggshells and prey remains may be found at the base of the nest tree or nearby and may indicate that the nest is active.

Photos: Barn Owl Trust, Mike Gadd, Paul Chutvik

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MODULE 5: Now What?



Photo: Rocky Hill

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- Unknown Stick Nest Found
- Is It a Goshawk Nest?
- BC iSpecies Goshawk App
- Reporting Your Sighting
- Additional Information

Goshawk Coastal Subspecies Is it a goshawk nest?



FOUND!!!

Unknown Large Stick Nest

- Have any birds been detected?
- Is it suitable goshawk habitat?
- Is it a mistletoe structure?
- Are there any fresh signs?
- Are there alternate nests?
- Can you see into the nest from a vantage point with binoculars?

Photo: Paul Chutvik

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Goshawk Coastal Subspecies

Is it a goshawk nest?



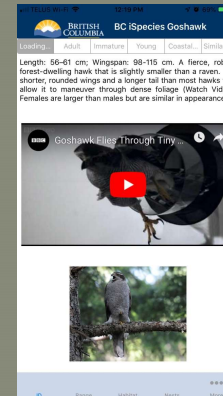
Photo: Paul Chrysk

- Use BC iSpecies Goshawk App
- Compare your nest to App photos of goshawk nests, nests trees, and suitable habitat.
- Check your App's active/inactive nest hints.
- Broadcast goshawk alarm and begging calls.

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Goshawk Coastal Subspecies

BC iSpecies Goshawk App



Download your free
BC iSpecies Goshawk App:

(weblink to be announced shortly)

- 65 ID photos and 9 ID videos
- 40 nest tree photos
- 35 nest photos
- 30 prey species remains photos
- 12 goshawk and raptor calls
- Aging nestlings key and photos
- Active/Inactive nest hints

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Goshawk Coastal Subspecies

Documenting and Reporting Your Sighting

Goshawk Field iForm

Field form uses FileMaker
Go (17) iOS software
<https://www.filemaker.com/products/filemaker-go/>

- Take a photo, video or audio recording of the bird, nest and habitat.
- Collect UTM's of the sighting or nest tree.
- If a nest is present, measure or estimate tree height, dbh & nest height above ground
- Collect pellets or prey remains in a bag and label.
- Fill-in electronic goshawk field form and submit.

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Goshawk Coastal Subspecies

Documenting and Reporting Your Sighting

- An RPBio (or someone with relevant goshawk experience) should be consulted to confirm goshawk nest identification

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Goshawk Coastal Subspecies Documenting and Reporting Your Sighting



Submit your sighting information to your District and Regional provincial biologist:

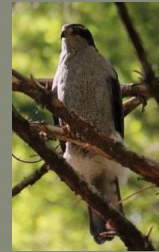
- ◉ Haida Gwaii Natural Resource District
Oliver Holt (250-559-6427)
Oliver.Holt@gov.bc.ca
- ◉ West Coast Region
Janice Anderson (250-751-3212)
Janice.Anderson@gov.bc.ca

Photo: TimberWest

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For Additional Information

Detailed information on coastal goshawk ecology and management of goshawk breeding areas can be found at:



McClaren et al. (2015) – Science-based Guidelines for Managing Northern Goshawk Breeding Areas in Coastal British Columbia.

URL: <http://jem-online.org/index.php/jem/article/view/576>

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Further Questions?



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Photo: Rore Hill

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Photo: Rory Hill

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