

2014

Incidental Take of Migratory Birds in Canada

Canadian Wildlife Service

Environment Canada

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1 Introduction

Migratory birds are an important component of Canadian biodiversity and most of these birds and their nests and eggs are protected everywhere in Canada under the *Migratory Birds Convention Act, 1994* (MBCA) (see [list of birds protected in Canada](#) under the MBCA).

Implementing the [conservation of migratory birds](#) requires attention to key factors, including the protection of the birds themselves, their nests and eggs. For example, the breeding period is critical in the life cycle of migratory birds to maintain sustainable populations. Most migratory bird species build a nest and/or find a safe place from predators and harsh weather to lay and incubate their eggs and to raise their young.

Migratory birds, the nests of migratory birds and/or their eggs can be inadvertently harmed or disturbed as a result of many activities—including but not limited to clearing trees and other vegetation, draining or flooding land, or using fishing gear.

This inadvertent harming, killing, disturbance or destruction of migratory birds, nests and eggs is known as **incidental take**. Incidental take, in addition to harming individual birds, nests or eggs, can have long-term consequences for migratory bird populations in Canada, especially through the cumulative effects of many different incidents.

Environment Canada works cooperatively with individuals, governments and industries to minimize the risk of incidental take effects to migratory birds, to achieve compliance with the law and to maintain sustainable populations of migratory birds.

Why is it important to protect migratory birds and their nests and eggs?

Canada is home to approximately 450 native species of birds, the majority of which are protected under the *Migratory Birds Convention Act, 1994*, and are collectively referred to as “migratory birds” (see a detailed [list of birds protected in Canada under the MBCA](#)). Some of these birds – ducks, geese, herons, song birds – are among the most familiar wildlife of the Canadian landscape, and are part of the cultural and spiritual experience of many Canadians.



Migratory birds play important roles in our environment; for example, they contribute to environmental quality by protecting agricultural and forest products from pests, and promote the health and diversity of ecosystems through pollination and seed dispersion. Expenditures on nature-related activities, including migratory bird watching and hunting, also make a significant contribution to our economy, and are estimated to be in the billions of dollars annually (source: [The Importance of Nature to Canadians; The Economic Significance of Nature-related Activities](#)).

How are migratory birds protected in Canada?

The [Migratory Birds Convention Act, 1994](#), an act that was first adopted in Canada in 1917, protects species of migratory birds and their nests and eggs anywhere they are found in Canada, including surrounding ocean waters regardless of ownership (see [Act and Regulations](#) and [list of birds protected in Canada under the MBCA](#)). General prohibitions under the Act and its regulations protect migratory birds, their nest and eggs and prohibit the deposit of harmful substances to birds in waters or areas frequented by them.

Incidental take of a migratory bird, nest or eggs, has the potential to result in investigation and potentially prosecution under the general prohibitions of the Act and its regulations. This possibility is elevated if the individual or organization is not able to demonstrate due diligence. Demonstrating due diligence means that the person or organization should have known that migratory birds, their nests and eggs may be in the area; that the activity that the person or organization wants to undertake would likely impact those migratory birds, nests and eggs; and that the person or organization attempted to avoid or reduce such impact.

Currently, the regulations do not provide for authorizations or permits for the incidental take of migratory birds or their nests or eggs in the course of industrial or other activities. As such, to minimize the possibility of contravening the law, understanding your potential impact on migratory birds, nests and eggs, taking reasonable care, and avoidance are the best approaches to take when contemplating any activity or decision that has the potential to impact migratory birds, nests or eggs. However, if migratory birds are causing [damage or danger](#) (for example cases of crop depredation or airport safety), please contact [Environment Canada's Canadian Wildlife Service office in your region](#).

General advice to prevent detrimental effects on migratory birds, nests and eggs

General Environment Canada recommendations:

1. Know your legal obligations;
2. Avoid engaging in potentially destructive or disruptive activities in key sensitive periods and locations, in order to reduce the risk of affecting birds, their nests or eggs;
3. Develop and implement appropriate preventive and mitigation measures to minimize the risk of incidental take and to help maintain sustainable populations of migratory birds.

Note that appropriate measures need to be decided on a case-by-case basis. It is the responsibility of the individual or company undertaking the activities to determine these measures.

2 Avoidance Guidelines

Compliance is an integral part of wildlife protection legislation and aims to ensure that migratory birds, as individuals and as populations, and their nests and eggs are protected and conserved. These [avoidance guidelines](#) are advice to help reduce the risk of incidental take of migratory birds, nests and eggs, and to help make proactive avoidance and mitigation decisions for any activities that might affect migratory birds (see [list of species protected under the Migratory Birds Convention Act, 1994](#)).



DISCLAIMER

The information presented here constitutes advice only. All persons must adhere to all pertinent laws (for example provincial or territorial laws), regulations and permit requirements including but not restricted to the [Migratory Birds Convention Act, 1994](#) (MBCA) and the [Migratory Birds Regulations](#) (MBR). It is important to note that some species of birds protected under the MBCA have also been listed in Schedule 1 of the [Species at Risk Act](#) (SARA). These species receive protection from both the MBCA and SARA.

This advice does not provide an authorization for harming or killing migratory birds or for the disturbance, destruction or taking of nests or eggs under the MBR. It does not provide a guarantee that the activities will avoid contravening the MBR or other laws and regulations. This is general information not intended to be relied on as official advice concerning the legal consequences of any specific activity. It is not a substitute for the MBCA, the MBR, or any other legislation.

The guidance provided on this website will be updated as new information becomes available.

2.1 General Avoidance Information

2.1.1 Planning ahead to reduce the risk of detrimental effects to migratory birds and their nests and eggs

If you are active on land or in the water in Canada, you need to be aware of the legal obligations regarding the protection of migratory birds, including the prohibition against disturbing or destroying the nests and eggs of migratory birds. Planning ahead can help you comply with the law and minimize the risk of detrimental effects to migratory birds. Assessing the risks of effects is a first step for developing appropriate prevention and mitigation measures that help maintain sustainable populations of migratory birds.

2.1.2 What is the law?

The Act and its regulations protect migratory birds and prohibit the disturbance or destruction of migratory bird nests and eggs in Canada. The legislation and regulations apply to all lands and waters in Canada, regardless of ownership (see: [How are migratory birds protected in Canada?](#)). Environment Canada is responsible for administering the MBCA on behalf of the federal government.

2.1.3 What is Environment Canada's role?

In the context of incidental take, Environment Canada works cooperatively with individuals, governments and industries to minimize the risk of effects to migratory birds, to maintain sustainable populations and to achieve compliance with the law. To attain these goals, Environment Canada:

- Promotes awareness and compliance of the legislation and regulations;
- Issues expert guidance on how to avoid incidental disturbance or destruction of migratory birds and their nests and eggs;
- Develops and communicates [Bird Conservation Region Strategies](#) that provide information about threats to migratory bird conservation and help establish priorities for conservation actions; and
- Undertakes activities to verify compliance with the legislation, investigates alleged infractions, and ensures deterrence through a combination of game officer presence and court prosecutions.

Environment Canada also encourages the development and application of Beneficial Management Practices (BMPs) by individuals and companies to protect and conserve migratory birds. For background information on BMPs, refer to [Environment Canada's Approach to the Development of BMPs](#).

Please note that Environment Canada cannot provide authorizations or permits for the incidental take of migratory bird nests and eggs. Activities affecting migratory birds and/or their nests and eggs, regardless of their scale, the level of potential detrimental effects on bird populations, or the nature of mitigation measures taken, can result in violations of the MBR.

2.1.4 How do I know if migratory birds may be affected or will be nesting in the area?

In order to help ensure that you are complying with the [Migratory Birds Convention Act, 1994](#) and the [Migratory Birds Regulations](#), you should first determine the likelihood of the presence of migratory birds and their nests or eggs when planning activities to be carried out. It is recommended to use a scientifically sound approach that considers the available bird habitats, the migratory bird species likely to be encountered in such habitats, and the likely time period of encounters.

You should plan to avoid engaging in potentially destructive or disruptive activities at key locations or during key periods, including the breeding periods and periods of high usage such as migration and/or feeding, which vary by region and by species, in order to reduce the risk of harmful impacts on migratory birds and the risk of nest destruction or disturbance (see [Risk factors for migratory birds](#) and [Timing of breeding of birds in Canada](#)).

If you need to determine whether migratory birds are nesting in an area at a particular time, consider using non-intrusive monitoring methods in order to prevent disturbing migratory birds while they may be nesting. Except when nests are known to be easy to locate, active nest searches are generally not recommended because 1) searchers may disturb or stress nesting birds, and 2) in most habitats, the likelihood of detecting all nests in a given search area is known to be low.

Read the [Specific considerations related to determining the presence of nests](#), and assess and document what is the most appropriate approach for the circumstance. Remember that searching for nesting birds generally requires effort and expertise. Finding all nests in an area is generally unlikely; therefore, incidental take is also unlikely to be avoided through an approach based exclusively on conducting active nest searches prior to industrial or other operations.

2.1.5 About nests

2.1.5.1 What should I do if I find a migratory bird's nest?

If nests containing eggs or young of migratory birds are located or discovered during operations, all disruptive activities in the nesting area should be halted until nesting is completed. In all cases where you may disturb a nest of a migratory bird, move away as quickly and quietly as possible, without disturbing the surrounding vegetation (i.e., avoid making a trail to and from the nest). Any nest found should be protected with a buffer zone determined by a setback distance appropriate to the species, the intensity of disturbance and the surrounding habitat until the young have naturally and permanently left the vicinity of the nest. (Read the [Specific considerations related to determining the presence of nests](#) for more details about setback distances).

Moreover, if there are migratory bird nests where you plan to work, consider options like avoiding, adapting, rescheduling or relocating activities that could disturb or destroy nests.

2.1.5.2 Can I remove a migratory bird's nest from last year before the birds come back to use it again?

The MBR do not explicitly limit the protection of nests to active nests, and an individual may be in violation of the Regulations if he or she damages, destroys or removes a non-active nest.

For most migratory bird species, however, removing the nest after the breeding season will have no effect on the ability of birds to nest again, as the great majority build or occupy new nests each year. On the other hand, some species such as the Great Blue Heron may reuse the same nest structure year after year, and the loss of these nests could have a negative impact on future nesting success. An appropriate approach for such circumstances must take into account relevant scientific information or practices for the species, considering in particular the species reliance on its old nest and the potential impact on nesting success of having to reconstruct a new nest.

The nest of a migratory bird is included in the definition of “residence” for migratory bird species listed in [Schedule 1 of the Species at Risk Act](#) (SARA) as endangered, threatened and, in some cases, extirpated (i.e. when the recovery strategy has recommended the reintroduction of the species in the wild in Canada). Nests of species listed under SARA are also protected at all times when the species usually reuses its nest. (For more information, please refer to the [legal text of SARA](#)).

Also remember that some provincial or other legislation may protect nests of some migratory bird species at all times.



For more information, please contact [Environment Canada's Canadian Wildlife Service office in your region](#).

2.1.6 In summary

To avoid the incidental take of migratory birds, nests and eggs, it is recommended to plan ahead and:

- Ensure that you are aware of and understand the relevant provisions of the [Migratory Birds Convention Act, 1994](#) and the [Migratory Birds Regulations](#) and, where applicable, the [Species at Risk Act](#) and provincial, territorial or other laws and regulations;
- Determine the likelihood of the presence of migratory birds, their nests or eggs when planning activities to be carried out, by using a scientifically sound approach that considers the available bird habitats, what migratory bird species are likely to be encountered in such habitats, and the likely time periods when they would be present.
- Avoid engaging in potentially destructive or disruptive activities at key locations or during key periods, including the breeding periods and periods of high usage, such as migration and/or feeding periods that vary by region and by species, in order to reduce the risk of impacts on migratory birds and the risk of nest destruction or disturbance (see [Risk factors for migratory birds](#) and [Timing of breeding of birds in Canada](#))
- In many circumstances, affecting migratory bird nests and eggs is unlikely to be avoided through an approach based exclusively on conducting active nest searches prior to industrial or other operations (see [How do I know if migratory birds may be affected or will be nesting in the area?](#) and [Specific Considerations related to determining the presence of nests](#)).

Also consider:

- Developing and implementing appropriate preventive and mitigation measures to minimize the risk of detrimental effects and to help maintain sustainable populations of migratory birds;
- Incorporating migratory bird protection measures and relevant conservation objectives and actions into policies, procedures, plans, directives and compensatory plans for your project or activity (see the [Bird Conservation Region Strategies](#)).

Note that the appropriate measures need to be decided on a case-by-case basis. It is the responsibility of the individual or company undertaking the activities to determine these measures.

In some cases, appropriate measures that minimize the risk of detrimental effects to migratory birds and their nests and eggs could be incorporated into BMPs. (see [Environment Canada's Approach to the Development of BMPs](#)).

All appropriate preventive or mitigation measures identified by a person, company, landowner or activity manager will require awareness on the part of the proponents' representatives (including contractors) conducting operations in the field.

Environment Canada recommends that all field operations staff be made aware of the selected avoidance and mitigation measures and be provided with appropriate advice/training on how to implement these measures.

2.2 Technical Information

2.2.1 Risk factors for migratory birds

Depending on the location, the time of year and the type of activities, some operations could be subject to different risk factors associated with migratory birds.

The main sensitive periods to consider are the breeding season and the migration periods although for some migratory bird species, risks may also be associated with other times of the year, such as the post-breeding moult period and wintering stages.



The main sensitive locations include, for example, migratory bird breeding colonies and feeding areas around them as well as migration staging sites.

In the case of bird collisions with structures, generally the main risk factors are site sensitivity (areas of bird concentration, migratory pathways, surrounding landscaping and habitat type, particular meteorological conditions like fog, etc.) and structure design and size (reflectivity of glass panels, lighting used, use of guy wires, height, etc.).

Environment Canada provides information on the timing of migratory bird breeding in Canada and about other risk factors (see, for example, the Environment Canada publication: [Wind Turbines and Birds: A Guidance Document for Environmental Assessment](#)) in order to help individuals and companies assess their risk with regards to migratory birds and design relevant avoidance and mitigation measures.

Information about risk factors on this website will be updated as new information becomes available.

Examples of risk factors associated with the take and disturbance of migratory birds, their nests and their eggs.

Warning

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The following table presents a summary of information extracted from the [Avoidance Guidelines](#) on Incidental Take published by Environment Canada. These examples are provided to help you with planning your activities.

Factor associated with management of incidental take (Full text)	Example of lower risk level	Example of higher risk level
Knowledge of legal obligations	Awareness of and understanding the relevant provisions of laws and regulations pertaining to the protection of birds, nests and eggs. Notably: the Migratory Birds Convention Act, 1994 , the Migratory Birds Regulations and, where applicable, the Species at Risk Act .	Unaware of legal responsibilities towards the protection of birds, nests and eggs.
Risk assessment and planning	Completed a thorough risk assessment in a timeframe suitable to balance project needs with risk of incidental take of migratory birds.	Little to no pre-planning or risk assessment around conservation issues related to migratory birds.
Preventive and mitigation measures	Measures are determined, implemented and monitored to avoid engaging in potentially destructive or disruptive activities at key locations or during key periods. Records of decision and actions taken. Measures (policies, procedures, plans, directive or compensatory plan) incorporated into a BMP. Awareness of avoidance measures to be implemented on the part of proponents' representatives and field operations staff.	No specific measures planned and implemented to minimize the risk of detrimental effects and to help maintain sustainable populations of migratory birds. No records. No BMP. Ignorance and /or no training.
Factor associated with protection of nests (Full text)	Example of lower risk level	Example of higher risk level
Timing	Project occurs outside the general nesting period and won't affect nest to be reused the next year.	Operations occur during the general nesting period or, throughout the year, could affect nest to be reused the next year (e.g., Great Blue Heron).
Likelihood of the presence of nests	Pertaining to the project, knowledge of available bird habitats, of migratory bird species and of the time periods during which they are likely to be encountered in such habitats. Search for evidence of nesting using non-intrusive search methods to prevent disturbance.	No understanding of local bird presence in space or time. Active nest searches, except when the nests searched are known to be easy to locate without disturbing them.
Habitat	Habitat is small and simple, such as: human-made structure (bridge, beacon, tower, and building), man-made setting or those with few potential nesting spots or few species of migratory birds,	Habitat is large and/or complex with many potential nesting areas, such as woodland and scrubland.

	urban park made mostly of lawns with few isolated trees, a vacant lot with sparse vegetation.	
Nest type	Presence of conspicuous and/or large nests that are easy to find and to avoid (e.g. Great Blue Heron, Bank Swallow, Chimney Swift), cavity nesters in simple snags or colonial-breeding species that can often be located from distance (e.g. colony of terns or gulls) - <i>This applies to nests of a few species</i>	Presence of nest difficult to locate (e.g. cryptic or small), such as nest of song birds. - <i>This applies to nests of most species</i>
Factor associated with disturbance of nests and nesting birds (Full text)	Example of lower risk level	Example of higher risk level
Intensity of operation	Infrequent, quick and low intensity disturbance. One or few sources of disturbance. Low or below ambient noise in natural areas.	Frequent, lasting and large disturbance. Several sources of disturbance. Loud noise emissions, especially when above ambient in natural areas or greater than about 50 dB.
Landscape context	Presence of birds accustomed to disturbance in the area or already breeding successfully in disturbed areas.	Presence of birds intolerant to disturbance, such as those moving away from their nest, agitated or performing distraction displays or actively defending the nest.
Preventive and mitigation measures	Disruptive activities around nest halted and nest protected with effective / efficient buffer zone / setback distances according to circumstances until the young have naturally and permanently left the vicinity of the nest.	No protection measures to reduce the effect of disturbance sources or ineffective/inefficient buffer or setback distance.
Factor associated with bird at sea and fishing (Full text)	Example of lower risk level	Example of higher risk level
Risk assessment	Awareness of potential risks of fishing method to seabirds and knowledge of where and when the birds are concentrated.	No understanding how fishing practice creates risk for birds.
Preventive and mitigation measures	Measures are determined, implemented and monitored to avoid engaging in potentially destructive or disruptive activities at key locations or during key periods.	No record or best management practices implemented.

2.2.2 Timing of breeding of birds in Canada

Environment Canada publishes technical information on general nesting periods to support the planning of activities in order to reduce the risk of detrimental effects to migratory birds, their nests and eggs. However, any time nests containing eggs or young are encountered, the immediate area should be avoided until the young have naturally left the vicinity of the nest ([see Buffer zones and setbacks distances](#)). This protection measure should be taken even if the nest has been found outside the dates of the general nesting period for the area published by Environment Canada. Once out of the nest, young birds are still vulnerable therefore precautionary measures are recommended.

In some cases, such as for migratory birds listed under the [Species at Risk Act](#) (SARA), more specific information on nesting periods may be available and should be considered. At all times, the onus remains with the individual or company to comply with all applicable legislation. *See more information on [requirements related to residence protection under SARA](#).*



In Canada, the general nesting period may start as early as mid-March and may extend until end of August. This is a general nesting period that covers most [federally protected migratory bird species](#). This period varies regionally across Canada mainly due to differences in species assemblages, climate, elevation and habitat type. Generally, the nesting period is delayed in more northerly latitudes, corresponding to vegetation development and food availability. To help with determining regionally relevant periods where nesting is likely to occur, Environment Canada is publishing estimated regional nesting periods within large geographical areas across Canada referred as "nesting zones". These periods are estimated for each zone and consider the time of first egg-laying until the young have naturally left the vicinity of the nest. Note that the technical information

published on this web site may be updated – and possibly modified - as new data become available.

For more information please see [General Nesting Periods of Migratory Birds in Canada](#).

2.2.3 Specific considerations:

2.2.3.1 Related to determining the presence of nests

Migratory bird nests can be found in a wide variety of habitats and locations. Depending on the species, nests may be found at many heights in trees, in tree cavities, in shrubs, on the ground (including in hayfields, crops and pastures), on cliffs, in burrows, in stockpiles of overburden from mines, in quarry banks, within wetlands, and on human-made structures such as bridges, ledges, and gutters.

It is difficult to locate most nests. Nest sites are cryptic and adult birds avoid approaching their nests in a manner that would attract predators to their eggs or young. Moreover, the amount and complexity of habitat to be searched often limits the success of surveys intended to locate all active nests. The nests of a few species are easier to locate, particularly those in isolated trees, on human-made structures and/or in colonies.

To determine the likelihood that migratory birds, their nests or eggs are present in a particular location, use a scientifically sound approach that considers the available bird habitats, which migratory bird species are likely to be encountered in such habitats and the time periods when they would likely be present. This will help you plan work activities to avoid affecting nesting birds. If further investigation is required to determine the presence of breeding birds, consider conducting an area search for evidence of nesting (e.g., presence of birds in breeding habitat through observation of singing birds, alarm calls, distraction displays) using non-intrusive search methods to prevent disturbance. In the case of songbirds for example, “point counts” (a technique where singing territorial males are located) may provide a good indication of the presence of the nests of these birds in an area. Please contact [Environment Canada’s Wildlife Service office in your region](#) for further technical information about investigation methods for non-song bird species (notably, waterfowl, waterbirds and shorebirds).

In most cases nest search techniques are not recommended because, in most habitats, the ability to detect nests remains very low while the risk of disturbing active nests is high. Flushing nesting birds increases the risk of predation of the eggs or young, or may cause the adults to abandon the nest or the eggs. Therefore, except when the nests searched are known to be easy to locate without disturbing them, active nest searches are generally not recommended; they have a low probability of locating all nests, and are likely to cause disturbance to nesting birds. In many circumstances, incidental take is likely to still occur during industrial or other activities even when active nest searches are conducted prior to these activities.

In some cases, nest surveys may be carried out successfully by skilled and experienced observers using appropriate methodology, in the event that activities would take place, in simple habitats (often in man-made setting) with only a few likely nesting spots or a small community of migratory birds. Examples of simple habitats include:

- an urban park consisting mostly of lawns with a few isolated trees;
- a vacant lot with few possible nest sites;
- a previously cleared area where there is a lag between clearing and construction activities (and where ground nesters may have been attracted to nest in cleared areas or in stockpiles of soil, for instance); or
- a structure such as a bridge, a beacon, a tower or a building (often chosen as a nesting spot by robins, swallows, phoebes, Common Nighthawks, gulls and others).

Nest searches can also be considered when looking for:

- conspicuous nest structures (such as nests of Great Blue Herons, Bank Swallows, Chimney Swifts);
- cavity nesters in snags (such as woodpeckers, goldeneyes, nuthatches); or
- colonial-breeding species that can often be located from a distance (such as a colony of terns or gulls).

2.2.3.2 Buffer zone and setback distances

Birds usually perceive humans as potential predators and may leave their nests in response to being approached, or abort nesting because of stressful situations. In general, there is a negative relationship between the type and magnitude of disturbance experienced by a nesting bird or colony and its breeding success. For example, disturbed birds tend to spend more time off the nest, which could increase the likelihood of predation on eggs or nestlings, exposure of nest and eggs to cold temperatures or wet conditions, fewer episodes of chick feeding, premature fledging or abandonment of nestlings and physiological stress. If nests containing eggs or young of migratory birds are located or discovered, disturbance in the nesting area should cease until nesting is completed (i.e., the young have permanently

left the vicinity of the nest, which could range from a few days to a few weeks depending on the species and stage of development).

Any nest found should be protected with a buffer zone determined by a setback distance appropriate to the species, the level of the disturbance and the landscape context, until the young have permanently left the vicinity of the nest. The appropriate setback distance varies greatly according to the circumstances. For example, a buffer of only a few metres is a safety measure that is likely to reduce the risk of disturbing a migratory bird nesting in your backyard. However, a larger buffer may be more appropriate in the case of industrial operations.

Birds respond differently to different types of disturbance but also with their levels, which could be determined based on the intensity, duration, frequency and proximity of the activity but also on the cumulative effects of multiple activities in the vicinity of a nest. Therefore, setbacks should incorporate this dynamic by identifying larger setbacks for types and levels of activities which cause greater amounts of disturbance. Significant sources of disturbance include: removal of vegetation and/or soil operations, drilling, loud noise, vibration, (e.g., seismic blasting from operations), regular approach by humans or vehicles. Disturbance could also be associated to noise emissions, especially when the noise is 10 dB above ambient in natural areas or greater than about 50dB.

Birds can habituate to disturbances and the degree of habituation is largely a function of landscape context. Birds (even with same species) which choose to inhabit developed areas are less susceptible to given degrees of disturbance and likely do not need buffers of the same extent as birds which inhabit more natural or remote settings. Birds can also be less tolerant if the nest is exposed and located in landscape with sparse vegetation density and/or with lack of topographic relief (like the Prairie or tundra) instead of when nest is hidden and/or in a more complex setting, like a forest or bush habitat. The risk of disturbance is also greater with larger birds (such as herons or cranes) that are generally less tolerant than songbirds (such as robins or sparrows). For songbirds, which generally have inconspicuous nests, setbacks may not be the most practical means of providing nest protection. For such species, alternative nest protection can still be provided without needing to know the precise nest location by protecting prescribed areas of high-quality habitat in the vicinity of known breeding activity. For heron colonies and other stick-nesting birds, which generally have conspicuous nests, setbacks are often used to provide nest protection.

Setback distances are often set based on experimental evidence of the distance at which nesting birds react to human disturbance, however expert opinion is often used to supplement scientific data. Two benchmark measurements of disturbance distance are often used to develop a baseline equation to help determine a setback distance: alert distance and flush distance. Alert distance is the distance at which the bird adopts a vigilant posture or emits alarm calls. Flush distance is the distance at which a bird takes flight or moves away from a threat, performs distraction displays (e.g., feigning a broken wing or sitting down on a non-nesting site), or actively defends the nest.

To help with the determination of appropriate setback distances for the circumstances, here are examples of setback ranges for different types of birds. Remember that these general examples can serve as an initial basis for review and must be adjusted after assessing relevant factors, such as those described above.

- Example 1: 1-5m, up to 10-50m or more*for most nest of songbirds and other small birds;
- Example 2: 10-30m, up to 100m or more*for most nest of waterfowl, and up to 500m for Trumpeter Swan;
- Example 3: 10-25m, up to 50m or more*for swallow colonies;
- Example 4: 50-100m, up to 200m or more*for Pileated or Red-Headed woodpecker cavities;

- Example 5: 100-150m, up to 300m or more*for nest of Piping Plover;
- Example 6: 100m, up to a 1000m or more*for nest of Sandhill Crane;
- For guidance regarding seabird and waterbird colonies, please refer to [Guidelines to Avoid Disturbance to Seabird and Waterbird Colonies in Canada](#).

**: These general examples can serve as an initial basis for review. A larger buffer may be needed to minimize the risk of disturbance caused by industrial operations and for species at risk.*

Warning

Note that it is the responsibility of the individual or company undertaking the activities to determine set-back distances. The information presented above constitutes advice only. This advice does not provide an authorization for harming or killing migratory birds or for the disturbance, destruction or taking of nests or eggs under the Migratory Birds Regulations (MBR). It does not provide a guarantee that activities will avoid contravening the MBR or other laws and regulations. This is general information that should not be relied on as official advice concerning the legality of any specific activity. It is not a substitute for the *Migratory Birds Convention Act, 1994*, the MBR, or any other legislation. In particular instances, specific recommendations or requirements may apply and may be found in such documents as Species at Risk Recovery Strategies or other official documents. Please contact [Environment Canada's Wildlife Service office in your region](#) for further technical information.

In all cases, the nest itself should never be marked using flagging tape or other similar material as this increases the risk of nest predation. If necessary, flagging tape can be placed at the limits of the buffer zone.

2.2.3.3 Related to disturbance of breeding colonies

The colonies of seabirds and waterbirds are particularly vulnerable to the effects of human disturbance. Disturbance can cause colonial-breeding birds to abandon their nests or young, or to use valuable energy reserves for defense, instead of incubating eggs and feeding their young. In addition, disturbance to the colony may prevent adult birds from returning to protect and feed their young, and expose eggs or chicks to predation and to the lethal effects of heat, cold and rain. Human activities in the vicinity of breeding colonies, such as fishing and boating or low-altitude flying, should be kept far enough away to avoid flushing birds from their nests, or cause them to dive at you in an attempt to drive you away from the colony. In all cases where you may be disturbing seabirds or waterbirds, move away as quickly and quietly as possible.



Environment Canada recommends that people stay off seabird and waterbird colonies, maintain appropriate buffer zones around colonies, and avoid any disturbance of migratory birds, during the breeding season. For more specific information including minimum distances and distances for anchoring large vessels, please refer to [Guidelines to Avoid Disturbance to Seabird and Waterbird Colonies in Canada](#). In addition, protected areas such as [National Wildlife Areas](#), Migratory Bird Sanctuaries and National Parks may have specific restrictions regarding buffer zones on land and in water, as well as flight restrictions. For more information, please contact [Environment Canada's Canadian Wildlife Service office in your region](#).

2.2.3.4 Related to Birds at Sea

Seabird populations are threatened by many factors including introduced predators on nesting colonies, contaminants, marine oil pollution and litter, climate change, tourism, disease, and aquaculture activities. Seabirds may be encountered at sea at any time of year and in almost any location, however, many seabirds tend to concentrate in particular areas; the birds are at greater risk if there are interactions between seabirds and human activities in those areas.

Environment Canada conducts research and monitoring to determine the areas and time periods where seabirds congregate. This is done to raise awareness of the potential risks to seabirds from human activities, and to identify the areas and time periods when those risks may be higher. The information from this research and monitoring is also provided in order to facilitate risk management decisions by those who carry out activities in areas where seabirds are found. The first phase of this work was a study to determine [areas of increased density for species vulnerable to fisheries bycatch in Canada's Pacific Ocean](#). For additional information, please refer to the section on [Birds at sea](#) or contact [Environment Canada's Canadian Wildlife Service office in your region](#).

2.2.3.5 Related to maintenance of human-built structures

Activities such as cleaning, application and removal of protective coatings (e.g., paints), and demolition should not take place during the breeding season on structures where migratory birds are nesting, as there is a risk of disturbing or destroying eggs or nestlings.

Where maintenance activities must take place during the breeding season, netting or other appropriate systems may be temporarily installed prior to the arrival of birds in the spring, in order to prevent birds from initiating nesting on the structure.

Generally, if migratory birds nesting in buildings are a cause for concern, it is recommended that you identify how the birds enter the building and block those entries after nesting is completed and before the birds come back to nest the following season. Should there be additional concerns, please contact [Environment Canada's Canadian Wildlife Service office in your region](#).

2.2.3.6 Related to water-level regulation



The management of dams and project construction and maintenance may necessitate modifications to water levels in reservoirs, ponds or other wetlands. For example, it may be required to remove beaver dams in order to regulate water-levels. Under such circumstances, project managers should determine whether waterfowl, waterbirds and/or other birds are nesting in or near the wetland, and avoid regulating water-levels that could result in flooding or drying out nests until the birds have raised their young. Water-level modifications may, for example, be scheduled prior to or after the breeding season.

2.2.3.7 Related to exposed soil banks

Particular care should be taken in selecting erosion prevention and control measures if migratory birds are found nesting in stockpiles of overburden or on exposed soil banks in sand pits or quarries. During the breeding season it is important that nests not be disturbed by erosion prevention and control measures or by excavation and construction activities. For species such as Bank Swallows, which nest in burrows dug into exposed soil banks, the period when nests are considered active includes not only when birds are incubating eggs and taking care of flightless chicks, but also the roosting period after chicks have learned to fly and nests continue to be used.



2.3 General Nesting Periods of Migratory Birds in Canada

Environment Canada publishes technical information on general nesting periods to support the planning of activities in order to reduce the risk of detrimental effects to migratory birds, their nests and eggs ([see warning below](#)). However, any time nests containing eggs or young are encountered, the immediate area should be avoided until the young have naturally left the vicinity of the nest ([see Buffer zones and setbacks distances](#)). This protection measure should be taken even if the nest has been found outside the dates of the general nesting period for the area published by Environment Canada. Once out of the nest, young birds are still vulnerable therefore precautionary measures are recommended.

Species at risk: In some cases, such as for migratory birds listed under the [Species at Risk Act](#) (SARA), more specific information on nesting periods may be available and should be considered. At all times, the onus remains with the individual or company to comply with all applicable legislation. *See more information on [requirements related to residence protection under SARA](#).*

2.3.1 General nesting periods:

In Canada, the general nesting period may start as early as mid-March and may extend until end of August. This is a general nesting period that covers most [federally protected migratory bird species](#) (*see below for [species with a breeding period that may fall outside the general nesting period](#)*). This period varies regionally across Canada mainly due to differences in species assemblages, climate, elevation and habitat type. Generally, the nesting period is delayed in more northerly latitudes, corresponding to vegetation development and food availability. To help with determining regionally relevant periods where nesting is likely to occur, Environment Canada is publishing estimated regional nesting periods (*see [table](#)*) within large geographical areas across Canada referred as "nesting zones" (*see the [map](#) and the text below about the nesting zones*). These periods are estimated for each zone and consider the time of first egg-laying until the young have naturally left the vicinity of the nest. Note that the technical information published on this web site may be updated – and possibly modified - as new data become available.

2.3.2 Nesting calendars:

In addition to the regional nesting period tables, the information is also presented in a set of [calendars](#). These calendars show the variation in nesting intensity by habitat type and nesting zone. Nesting intensity is defined as the proportion of species that are predicted to be actively nesting on a given date from March to September. The median value was used to determine the representative proportion of species from all parts of a nesting zone (colours from white to dark red). The blue markers show extreme dates predicted for some atypical parts of a nesting zone where nesting could occur earlier or later. For example, in the nesting zone "A1", the general nesting period in open field habitat is predicted to occur between March 28 and August 18, but, in some atypical part of that nesting zone in open field habitat, the earliest/latest nesting records are March 14 and August 18 respectively. These nesting calendars are the result of predictive models based mainly on the mean annual temperature. The dates were established by considering only the species known to nest in each of the nesting zones (*see below about the species analyzed and the [list of species included /excluded for the determination of regional nesting periods and calendars](#)*). Note that the calendars are based upon number of nesting species not number of nesting individuals, therefore periods with fewer nesting species may still have a high number of individuals within those species that nest during that time period (for example: many Canada Geese, Mallards and Pintails nest in April on the prairies, nesting zones B3 and B4).

2.3.3 Nesting zones:

The regional nesting period table and calendars are associated with broad geographical areas distributed across Canada, referred to as "nesting zones" (*see [map](#)*). These nesting zones were determined using mainly the limits defined by the Bird Conservation Regions ([BCR](#)), which reflect broad changes in species diversity across Canada. Nesting zones also consider variation in the mean annual temperature, as well as similarities in the nesting periods within and between zones. It should be noted that changes in the nesting period between adjacent nesting zones occurs as a gradient. Therefore, when working near the boundary of a zone, it is advisable to also consider the nesting period in adjacent zones in order to determine when migratory birds are most likely to be nesting.

2.3.4 Exceptions - species with a breeding period that may fall outside the general nesting period:

The general nesting period covers most federally protected migratory bird species and may not include the complete nesting period for species under provincial jurisdiction (such as jays, owls, hawks, blackbirds, grouse, cormorants or pelicans). In addition, the general nesting period may not be accurate for:

- species that can breed any time conditions are right, such as Red Crossbills and White-winged Crossbills nesting in winter when cone crops are available;
- species that may nest earlier, such as Great Blue Heron and American Woodcock in March, or those which may nest later such as Cedar Waxwing, Bohemian Waxwing, Pine Siskin, American Goldfinch, Common Murre and Great Blue Heron until the end of September, or Leach's Storm-Petrel, Fork-tailed Storm-Petrel and Northern Gannet in October;
- the south of British-Columbia, on the coastal area especially, where some species can start nesting in February, such as Song Sparrow, Anna's Hummingbird, Great Blue Heron and Mallard and, in early March, such as Canada Goose, Common Merganser, Killdeer and Bushtit; or those which may nest later in September such as swallows, wrens, chickadees, Bushtit, Swainson's Thrush and Dark-eyed Junco;
- mountainous landscapes (e.g. Rockies, Torngats) where the nesting period can start later on mountain tops or earlier in valleys.

2.3.5 Species analysed:

The determination of the regional nesting period table and calendars are the result of a statistical analysis based on nearly 640,000 nest observations gathered from nearly 180,000 nests by volunteers and others who contributed their data to [Project NestWatch](#). This project is managed by Bird Studies Canada in collaboration with provincial and regional nest record schemes across Canada. Among the 357 federally protected species known to breed regularly in Canada, 259 species (73%) were included for the determination of the regional nesting period table and calendars. The remaining 98 species were excluded because of insufficient nest records available (80 species), species that can breed any time conditions are right and/or very late or very early nesters (5 species) or unsuccessful modeling (13 species; see [the list of species included/excluded](#)). Note that the list of species included may change as more information becomes available, which could result in the changing of technical information published on this web site.

Warning

The technical information contained in the "General nesting periods of migratory birds in Canada" published on this web site is general information that constitutes advice only. All persons must adhere to all pertinent laws (for example provincial or territorial laws), regulations and permit requirements including but not restricted to the [Migratory Birds Convention Act, 1994](#) (MBCA) and the [Migratory Birds Regulations](#) (MBR). It is important to note that some species of birds protected under the MBCA have also been listed in Schedule 1 of the [Species at Risk Act](#) (SARA). These species receive protection from both the MBCA and SARA. This information does not provide an authorization for harming or killing migratory birds or for the disturbance, destruction or taking of nests or eggs as prohibited under the MBR. This information does not provide a guarantee that the activities will avoid contravening the MBR or other laws and regulations. This is general information not intended to be relied on as official advice concerning the legal consequences of any specific activity. It is not a substitute for the MBCA, the MBR, or any other legislation.

It is the responsibility of individuals and companies to assess their risk with regards to migratory birds and design relevant avoidance and mitigation measures (see [the Specific consideration related to determining the presence of nests](#) and [the Guide for Developing Beneficial Management Practices for Migratory Bird Conservation](#)). Since the "General nesting periods of migratory birds in Canada" applies to large geographical areas, it is possible that local nesting periods could have a different starting date and/or duration than published dates due to micro-climatic conditions in specific areas (e.g. high elevation sites or coastal sites) as well as inter-annual variation due to factors such as early spring or cold, wet summer. The technical information published on this web site will be updated as new data become available, which could result in the changing of dates and/or limits of the nesting zones.

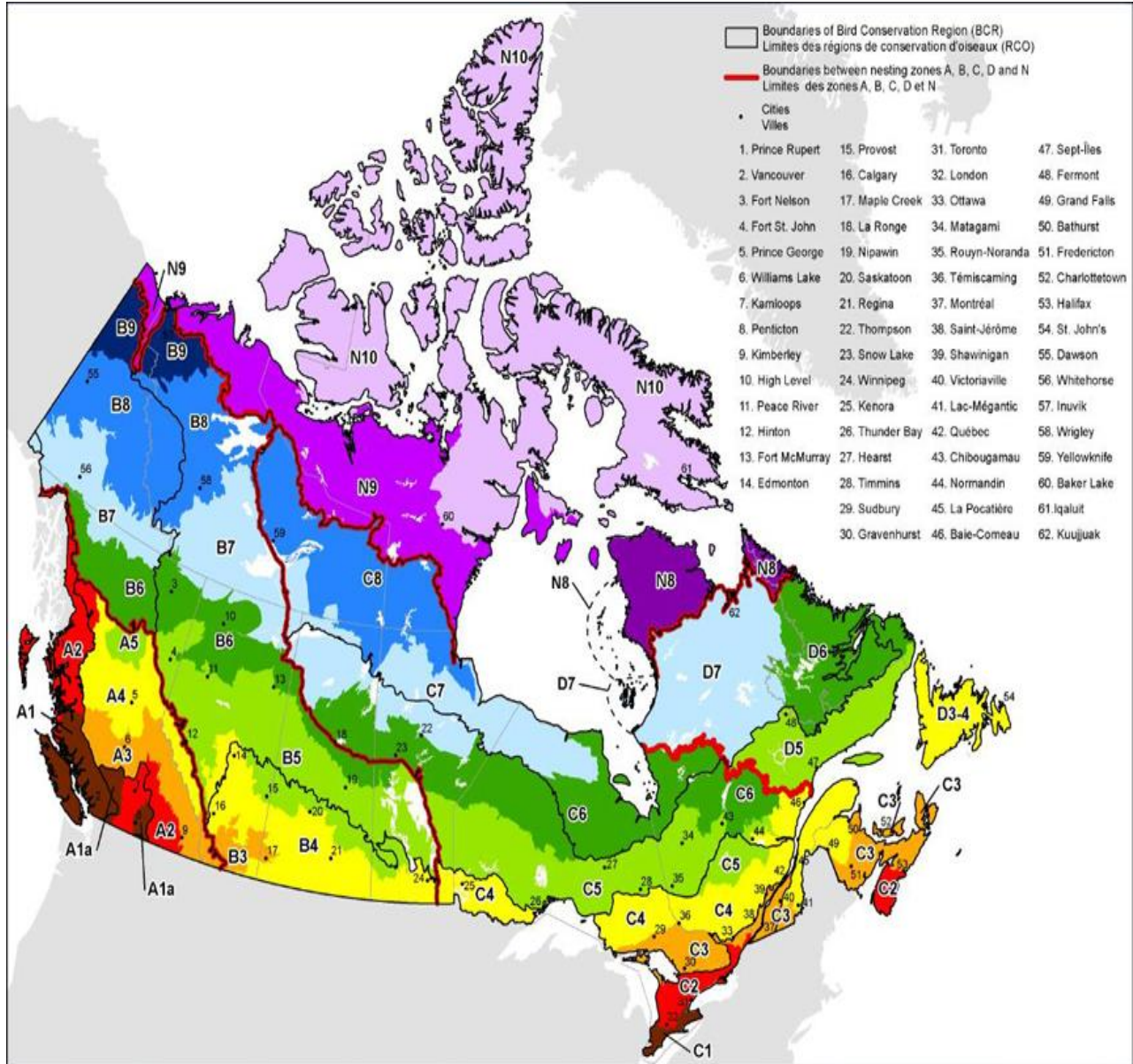
Please contact [Environment Canada's Wildlife Service office](#) in your region for further technical information.

2.3.6 Regional nesting period table in Canada, technical information for planning purposes

Table 1. Regional nesting period table in Canada, technical information for planning purposes	
Nesting zone A: Northern Pacific Rainforest (BCR5), Great Basin (BCR9) & Northern Rockies (BCR10) (Map) (Nesting calendars)	Regional nesting period
A1	Mid-March – Mid-August
A1a & A2	End of March – Mid-August
A3 & A4	Mid-April – Mid-August
A5	End of April – Mid-August
Nesting zone B: Prairie Potholes (BCR11), Boreal Taiga Plains (BCR6) & Northwestern Interior Forest (BCR4)	Regional nesting period

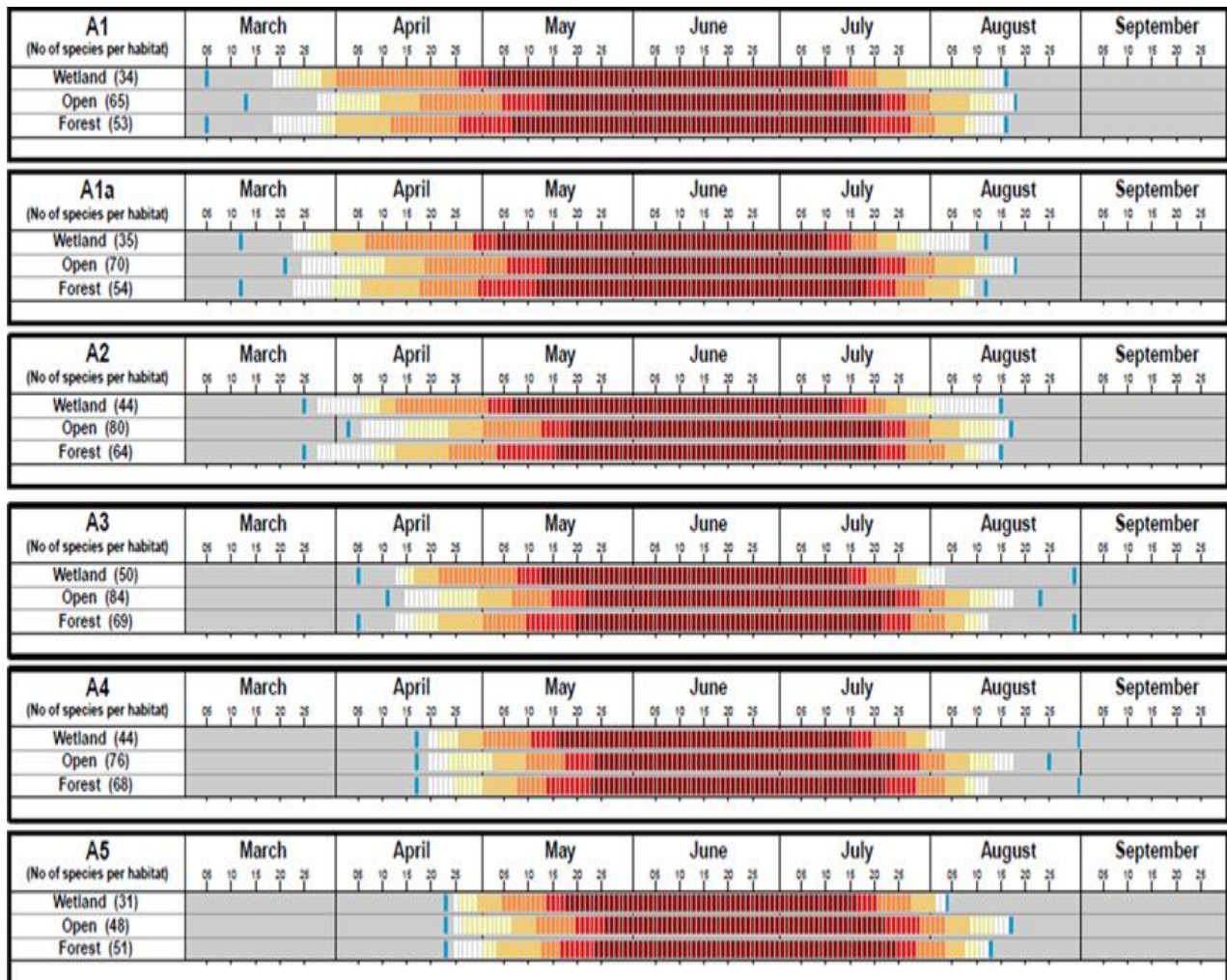
(Map) (Nesting calendars)	
B3	Beginning of April – End of August
B4 & B5	Mid-April – End of August
B6	End of April – Mid-August
B7 & B8	Beginning of May – Mid-August
B9	Mid-May – Mid-August
Nesting zone C: Lower Great Lakes/St. Lawrence Plain (BCR13), Atlantic Northern Forest (BCR14), Boreal Hardwood Transition (BCR12), parts of Boreal Softwood Shield (BCR8) & parts of Taiga Shield and Hudson Plains (BCR7) (Map) (Nesting calendars)	Regional nesting period
C1 & C2	End of March – End of August
C3	Beginning of April – End of August
C4 & C5	Mid-April – End of August
C6	End of April – End of August
C7 & C8	Beginning of May – Mid-August
Nesting zone D: Quebec-Labrador and Newfoundland sub-zones of Boreal Softwood Shield (BCR8) & of Taiga Shield and Hudson Plains (BCR7) (Map) (Nesting calendars)	Regional nesting period
D3-4	Mid-April – Mid-August
D5	End of April – Mid-August
D6 & D7	Beginning of May – Beginning of August
Nesting zone N: Arctic Plains and Mountains (BCR3) (Map) (Nesting calendars)	Regional nesting period
N8 & N9	Mid-May – Mid-August
N10	End of May – Mid-August

2.3.7 Map of the nesting zones in Canada

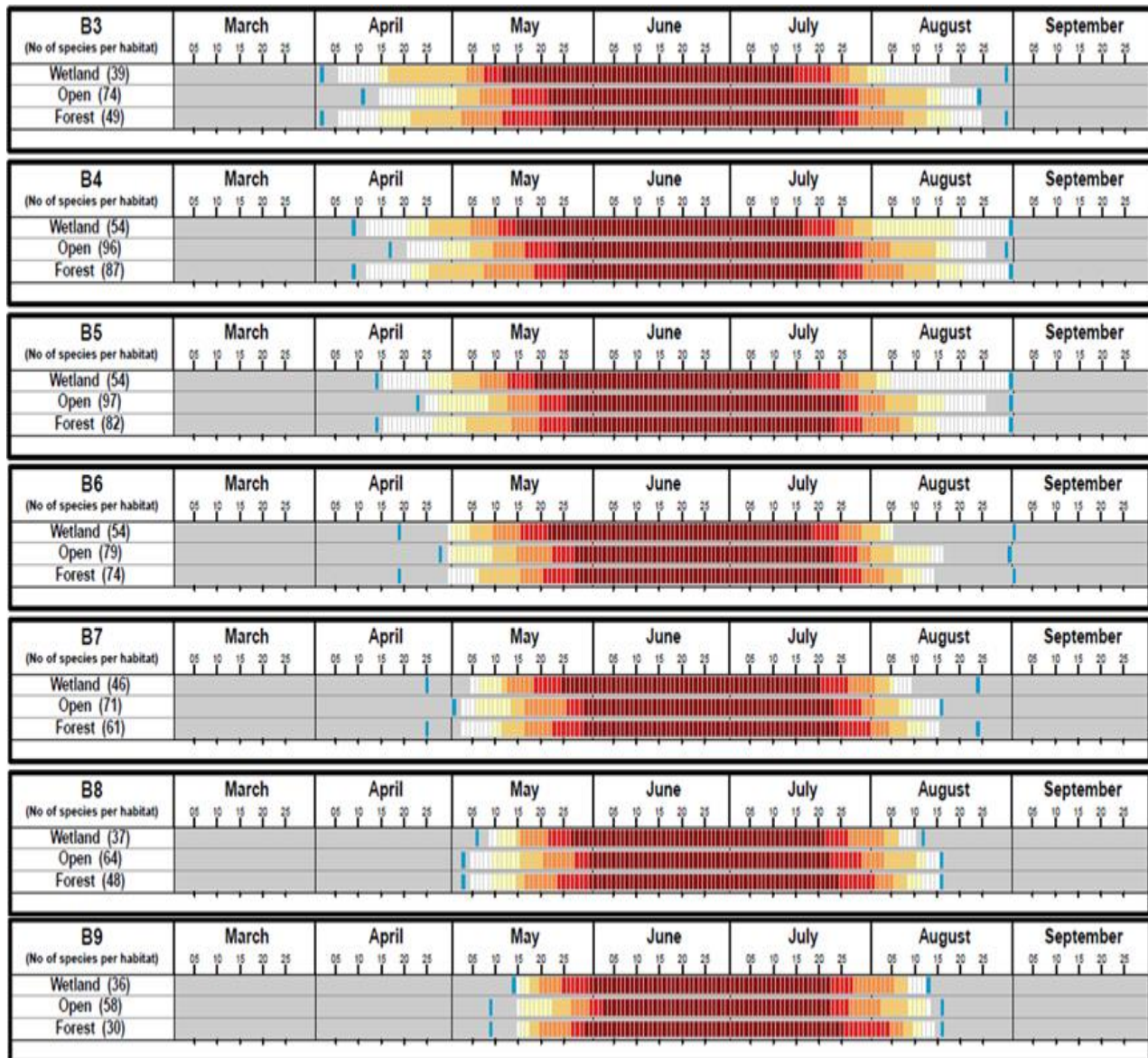


Zone A: includes Northern Pacific Rainforest (BCR5), Great Basin (BCR9) and Northern Rockies (BCR10);
Zone B: includes Prairie Potholes (BCR11), Boreal Taiga Plains (BCR6) & Northwestern Interior Forest (BCR4);
Zone C: includes Lower Great Lakes/St. Lawrence Plain (BCR13), Atlantic Northern Forest (BCR14), Boreal Hardwood Transition (BCR12), parts of Boreal Softwood Shield (BCR8) & parts of Taiga Shield and Hudson Plains (BCR7);
Zone D: includes Quebec-Labrador & Newfoundland sub-zones of Boreal Softwood Shield (BCR8) & of Taiga Shield and Hudson Plains (BCR7);
Zone N: includes Arctic Plains and Mountains (BCR3)

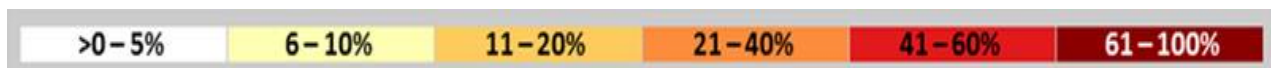
2.3.8 Nesting Calendars in zone A ([Map](#)), technical information for planning purposes covering Northern Pacific Rainforest (BCR5), Great Basin (BCR9) & Northern Rockies (BCR10)



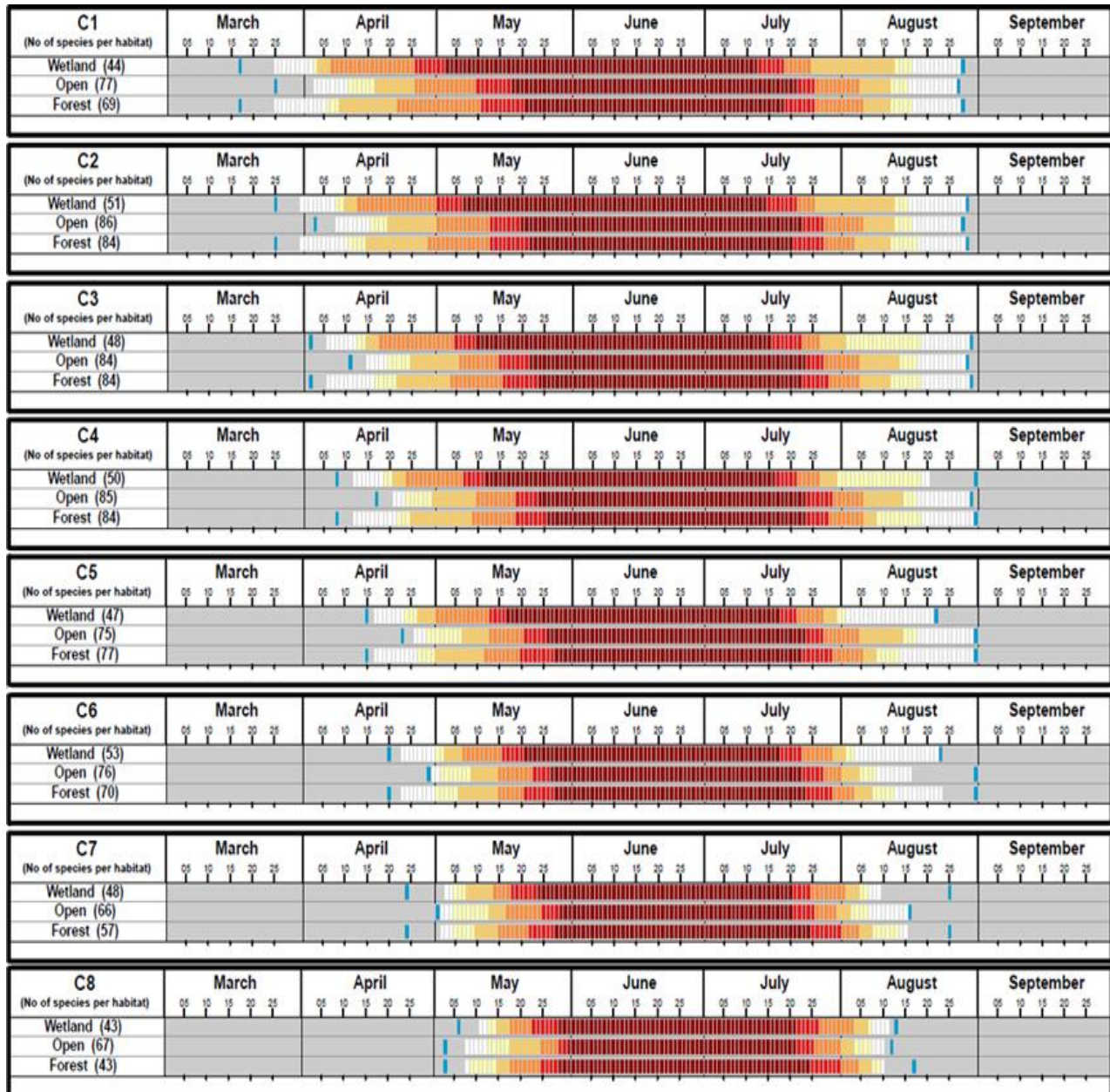
2.3.9 Nesting Calendars in zone B ([Map](#)), technical information for planning purposes covering Prairie (BCR11), Boreal Taiga Plains (BCR6) & Northwestern Interior Forest (BCR4)



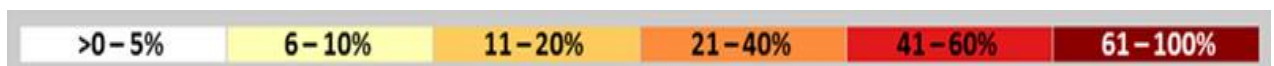
Legend for calendars: Number of species in percentage (Blue markers shows extreme dates predicted for some atypical parts of the nesting zone where nesting could be earlier or later)



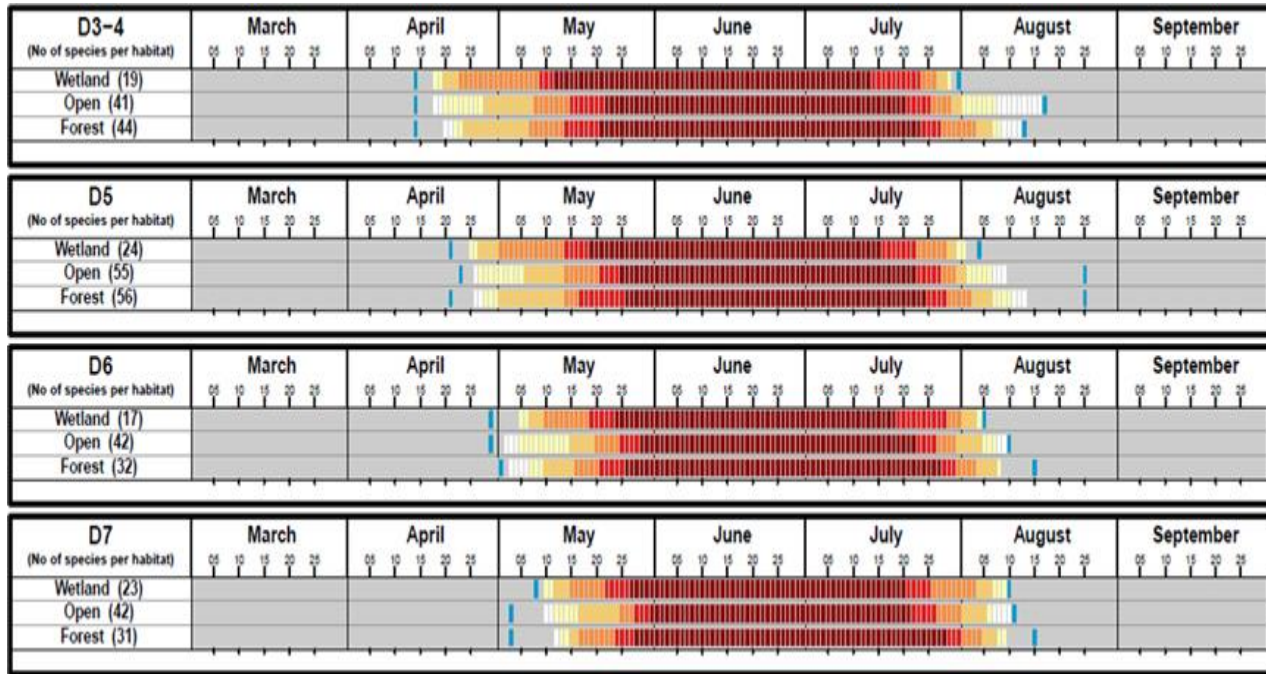
2.3.10 Nesting Calendars in zone C ([Map](#)), technical information for planning purposes covering LowerGreat Lakes/St. Lawrence Plain (BCR13), Atlantic Northern Forest (BCR14), Boreal Hardwood Transition (BCR12), parts of Boreal Softwood Shield (BCR8) & of Taiga Shield and Hudson Plains (BCR7)



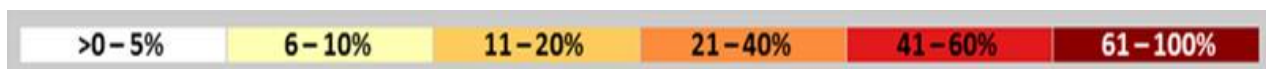
Legend for calendars: Number of species in percentage (Blue markers shows extreme dates predicted for some atypical parts of the nesting zone where nesting could be earlier or later)



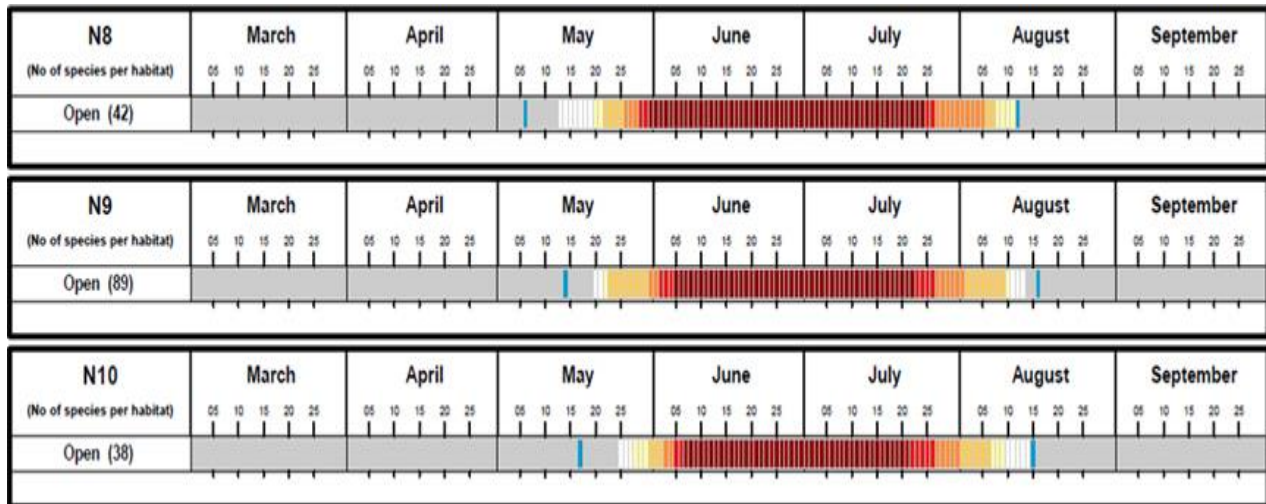
2.3.11 Nesting Calendars in zone D ([Map](#)), technical information for planning purposes covering Quebec-Labrador & Newfoundland sub-zones of Boreal Softwood Shield (BCR8) & of Taiga Shield and Hudson Plains (BCR7)



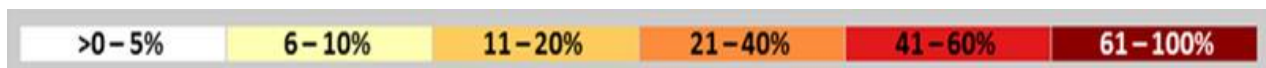
Legend for calendars: Number of species in percentage (Blue markers shows extreme dates predicted for some atypical parts of the nesting zone where nesting could be earlier or later)



2.3.12 Nesting Calendars in zone N ([Map](#)), technical information for planning purposes covering Arctic Plains and Mountains (BCR3)



Legend for calendars: Number of species in percentage (Blue markers shows extreme dates predicted for some atypical parts of the nesting zone where nesting could be earlier or later)



2.3.13 List of federally protected birds known to breed regularly in Canada

List of federally protected birds known to breed regularly in Canada (357 species). The table shows the species included (In, 259 species) and those excluded (98 species) for the determination of the regional nesting period table and calendars, following three exclusion criteria: because of insufficient nest records available (Ex 1, 80 species), it can breed any time conditions are right and/or very late or very early nesters (Ex 2, 5 species) and of unsuccessful modeling (Ex 3, 13 species). Species are rank following a phylogenetic order with their associated broad types of habitat: forests (F), wetlands (W) and open fields (O).

English Name	Scientific Name	Status	Habitat
Greater White-fronted Goose	<i>Anser albifrons</i>	In	W
Snow Goose	<i>Chen caerulescens</i>	In	W
Ross's Goose	<i>Chen rossii</i>	Ex1	
Brant	<i>Branta bernicla</i>	In	W
Cackling Goose	<i>Branta hutchinsii</i>	Ex1	
Canada Goose	<i>Branta canadensis</i>	Ex3	
Mute Swan	<i>Cygnus olor</i>	In	W
Trumpeter Swan	<i>Cygnus buccinator</i>	In	W
Tundra Swan	<i>Cygnus columbianus</i>	In	W
Wood Duck	<i>Aix sponsa</i>	In	F, W
Gadwall	<i>Anas strepera</i>	In	W, O
American Wigeon	<i>Anas americana</i>	In	W, O
American Black Duck	<i>Anas rubripes</i>	In	F, W
Mallard	<i>Anas platyrhynchos</i>	In	F, W
Blue-winged Teal	<i>Anas discors</i>	In	W, O
Cinnamon Teal	<i>Anas cyanoptera</i>	Ex1	
Northern Shoveler	<i>Anas clypeata</i>	In	W
Northern Pintail	<i>Anas acuta</i>	In	W, O
Green-winged Teal	<i>Anas crecca</i>	In	W
Canvasback	<i>Aythya valisineria</i>	In	W
Redhead	<i>Aythya americana</i>	In	W
Ring-necked Duck	<i>Aythya collaris</i>	In	W
Greater Scaup	<i>Aythya marila</i>	In	W
Lesser Scaup	<i>Aythya affinis</i>	In	W
King Eider	<i>Somateria spectabilis</i>	In	W
Common Eider	<i>Somateria mollissima</i>	In	O
Harlequin Duck	<i>Histrionicus histrionicus</i>	Ex1	
Surf Scoter	<i>Melanitta perspicillata</i>	In	F, W
White-winged Scoter	<i>Melanitta fusca</i>	In	F, W
Black Scoter	<i>Melanitta americana</i>	Ex1	
Long-tailed Duck	<i>Clangula hyemalis</i>	In	W
Bufflehead	<i>Bucephala albeola</i>	In	F, W
Common Goldeneye	<i>Bucephala clangula</i>	In	F, W
Barrow's Goldeneye	<i>Bucephala islandica</i>	Ex1	
Hooded Merganser	<i>Lophodytes cucullatus</i>	In	F, W
Common Merganser	<i>Mergus merganser</i>	In	F, W

Red-breasted Merganser	<i>Mergus serrator</i>	In	F, W
Ruddy Duck	<i>Oxyura jamaicensis</i>	In	W
Red-throated Loon	<i>Gavia stellata</i>	In	W
Pacific Loon	<i>Gavia pacifica</i>	In	W
Common Loon	<i>Gavia immer</i>	In	W
Yellow-billed Loon	<i>Gavia adamsii</i>	Ex1	
Pied-billed Grebe	<i>Podilymbus podiceps</i>	In	W
Horned Grebe	<i>Podiceps auritus</i>	In	W
Red-necked Grebe	<i>Podiceps grisegena</i>	In	W
Eared Grebe	<i>Podiceps nigricollis</i>	In	W
Western Grebe	<i>Aechmophorus occidentalis</i>	Ex1	
Clark's Grebe	<i>Aechmophorus clarkii</i>	Ex1	
Northern Fulmar	<i>Fulmarus glacialis</i>	Ex1	
Manx Shearwater	<i>Puffinus puffinus</i>	Ex1	
Fork-tailed Storm-Petrel	<i>Oceanodroma furcata</i>	Ex1	
Leach's Storm-Petrel	<i>Oceanodroma leucorhoa</i>	Ex1	
Northern Gannet	<i>Morus bassanus</i>	Ex1	
American Bittern	<i>Botaurus lentiginosus</i>	In	W
Least Bittern	<i>Ixobrychus exilis</i>	In	W
Great Blue Heron	<i>Ardea herodias</i>	In	F, W
Great Egret	<i>Ardea alba</i>	In	F, W
Cattle Egret	<i>Bubulcus ibis</i>	In	W
Green Heron	<i>Butorides virescens</i>	In	F, W
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	In	F, W
Yellow Rail	<i>Coturnicops noveboracensis</i>	Ex1	
King Rail	<i>Rallus elegans</i>	In	W
Virginia Rail	<i>Rallus limicola</i>	In	W
Sora	<i>Porzana carolina</i>	In	W
Common Gallinule	<i>Gallinula galeata</i>	In	W
American Coot	<i>Fulica americana</i>	In	W
Sandhill Crane	<i>Grus canadensis</i>	In	W
Whooping Crane	<i>Grus americana</i>	Ex1	
Black-necked Stilt	<i>Himantopus mexicanus</i>	Ex1	
American Avocet	<i>Recurvirostra americana</i>	In	W
Black Oystercatcher	<i>Haematopus bachmani</i>	Ex1	
Black-bellied Plover	<i>Pluvialis squatarola</i>	In	O
American Golden-Plover	<i>Pluvialis dominica</i>	In	O
Common Ringed Plover	<i>Charadrius hiaticula</i>	Ex1	
Semipalmated Plover	<i>Charadrius semipalmatus</i>	In	O
Piping Plover	<i>Charadrius melodus</i>	In	W, O
Killdeer	<i>Charadrius vociferus</i>	In	O
Mountain Plover	<i>Charadrius montanus</i>	Ex1	
Spotted Sandpiper	<i>Actitis macularius</i>	In	W, O
Solitary Sandpiper	<i>Tringa solitaria</i>	In	F, W
Wandering Tattler	<i>Tringa incana</i>	Ex1	
Greater Yellowlegs	<i>Tringa melanoleuca</i>	Ex1	
Willet	<i>Tringa semipalmata</i>	In	W
Lesser Yellowlegs	<i>Tringa flavipes</i>	In	F, W

Upland Sandpiper	<i>Bartramia longicauda</i>	In	W, O
Whimbrel	<i>Numenius phaeopus</i>	In	O
Long-billed Curlew	<i>Numenius americanus</i>	In	O
Hudsonian Godwit	<i>Limosa haemastica</i>	In	O
Marbled Godwit	<i>Limosa fedoa</i>	In	W
Ruddy Turnstone	<i>Arenaria interpres</i>	In	O
Red Knot	<i>Calidris canutus</i>	In	O
Surfbird	<i>Calidris virgata</i>	Ex1	
Stilt Sandpiper	<i>Calidris himantopus</i>	In	O
Sanderling	<i>Calidris alba</i>	Ex1	
Dunlin	<i>Calidris alpina</i>	In	O
Purple Sandpiper	<i>Calidris maritima</i>	Ex1	
Baird's Sandpiper	<i>Calidris bairdii</i>	In	O
Least Sandpiper	<i>Calidris minutilla</i>	In	O
White-rumped Sandpiper	<i>Calidris fuscicollis</i>	In	O
Buff-breasted Sandpiper	<i>Calidris subruficollis</i>	Ex1	
Pectoral Sandpiper	<i>Calidris melanotos</i>	In	O
Semipalmated Sandpiper	<i>Calidris pusilla</i>	In	O
Short-billed Dowitcher	<i>Limnodromus griseus</i>	Ex1	
Long-billed Dowitcher	<i>Limnodromus scolopaceus</i>	Ex1	
Wilson's Snipe	<i>Gallinago delicata</i>	In	W
American Woodcock	<i>Scolopax minor</i>	In	F, W
Wilson's Phalarope	<i>Phalaropus tricolor</i>	In	W
Red-necked Phalarope	<i>Phalaropus lobatus</i>	In	O
Red Phalarope	<i>Phalaropus fulicarius</i>	In	O
Pomarine Jaeger	<i>Stercorarius pomarinus</i>	Ex1	
Parasitic Jaeger	<i>Stercorarius parasiticus</i>	Ex3	
Long-tailed Jaeger	<i>Stercorarius longicaudus</i>	In	O
Dovekie	<i>Alle alle</i>	Ex1	
Common Murre	<i>Uria aalge</i>	Ex1	
Thick-billed Murre	<i>Uria lomvia</i>	Ex1	
Razorbill	<i>Alca torda</i>	Ex1	
Black Guillemot	<i>Cepphus grylle</i>	Ex3	
Pigeon Guillemot	<i>Cepphus columba</i>	Ex1	
Marbled Murrelet	<i>Brachyramphus marmoratus</i>	Ex1	
Ancient Murrelet	<i>Synthliboramphus antiquus</i>	Ex1	
Cassin's Auklet	<i>Ptychoramphus aleuticus</i>	Ex1	
Rhinoceros Auklet	<i>Cerorhinca monocerata</i>	Ex1	
Atlantic Puffin	<i>Fratercula arctica</i>	Ex1	
Horned Puffin	<i>Fratercula corniculata</i>	Ex1	
Tufted Puffin	<i>Fratercula cirrhata</i>	Ex1	
Black-legged Kittiwake	<i>Rissa tridactyla</i>	Ex1	
Ivory Gull	<i>Pagophila eburnea</i>	Ex1	
Sabine's Gull	<i>Xema sabini</i>	Ex1	
Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	In	F, W
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	Ex1	
Little Gull	<i>Hydrocoleus minutus</i>	In	W
Ross's Gull	<i>Rhodostethia rosea</i>	Ex1	

Laughing Gull	<i>Leucophaeus atricilla</i>	Ex1	
Franklin's Gull	<i>Leucophaeus pipixcan</i>	In	W
Mew Gull	<i>Larus canus</i>	In	W
Ring-billed Gull	<i>Larus delawarensis</i>	In	W, O
Western Gull	<i>Larus occidentalis</i>	Ex1	
California Gull	<i>Larus californicus</i>	Ex3	
Herring Gull	<i>Larus argentatus</i>	In	W, O
Thayer's Gull	<i>Larus thayeri</i>	Ex1	
Iceland Gull	<i>Larus glaucoides</i>	Ex1	
Glaucous-winged Gull	<i>Larus glaucescens</i>	Ex1	
Glaucous Gull	<i>Larus hyperboreus</i>	In	O
Great Black-backed Gull	<i>Larus marinus</i>	Ex3	
Caspian Tern	<i>Hydroprogne caspia</i>	Ex1	
Black Tern	<i>Chlidonias niger</i>	In	W
Roseate Tern	<i>Sterna dougallii</i>	Ex1	
Common Tern	<i>Sterna hirundo</i>	In	W, O
Arctic Tern	<i>Sterna paradisaea</i>	In	O
Forster's Tern	<i>Sterna forsteri</i>	In	W
Band-tailed Pigeon	<i>Patagioenas fasciata</i>	Ex1	
Eurasian Collared-Dove	<i>Streptopelia decaocto</i>	Ex1	
Mourning Dove	<i>Zenaida macroura</i>	In	O
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	In	F, O
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	In	F, O
Flammulated Owl	<i>Psilosops flammeolus</i>	Ex1	
Common Nighthawk	<i>Chordeiles minor</i>	In	F, O
Common Poorwill	<i>Phalaenoptilus nuttallii</i>	Ex1	
Chuck-will's-widow	<i>Antrostomus carolinensis</i>	Ex1	
Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	In	F
Black Swift	<i>Cypseloides niger</i>	Ex1	
Chimney Swift	<i>Chaetura pelagica</i>	In	F, O
Vaux's Swift	<i>Chaetura vauxi</i>	Ex1	
White-throated Swift	<i>Aeronautes saxatalis</i>	Ex1	
Ruby-throated Hummingbird	<i>Archilochus colubris</i>	In	F, O
Black-chinned Hummingbird	<i>Archilochus alexandri</i>	Ex1	
Anna's Hummingbird	<i>Calypte anna</i>	Ex1	
Rufous Hummingbird	<i>Selasphorus rufus</i>	Ex1	
Calliope Hummingbird	<i>Selasphorus calliope</i>	Ex1	
Lewis's Woodpecker	<i>Melanerpes lewis</i>	Ex1	
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	In	O
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	In	F, O
Williamson's Sapsucker	<i>Sphyrapicus thyroideus</i>	Ex1	
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	In	F
Red-naped Sapsucker	<i>Sphyrapicus nuchalis</i>	In	F
Red-breasted Sapsucker	<i>Sphyrapicus ruber</i>	Ex1	
Downy Woodpecker	<i>Picoides pubescens</i>	In	F, O
Hairy Woodpecker	<i>Picoides villosus</i>	In	F, O
White-headed Woodpecker	<i>Picoides albolarvatus</i>	Ex1	
American Three-toed Woodpecker	<i>Picoides dorsalis</i>	In	F, O

Black-backed Woodpecker	<i>Picoides arcticus</i>	In	F, O
Northern Flicker	<i>Colaptes auratus</i>	In	F, O
Pileated Woodpecker	<i>Dryocopus pileatus</i>	In	F
Olive-sided Flycatcher	<i>Contopus cooperi</i>	In	F
Western Wood-Pewee	<i>Contopus sordidulus</i>	In	F
Eastern Wood-Pewee	<i>Contopus virens</i>	In	F
Yellow-bellied Flycatcher	<i>Empidonax flaviventris</i>	In	F
Acadian Flycatcher	<i>Empidonax virescens</i>	In	F
Alder Flycatcher	<i>Empidonax alnorum</i>	In	O
Willow Flycatcher	<i>Empidonax traillii</i>	In	O
Least Flycatcher	<i>Empidonax minimus</i>	In	F
Hammond's Flycatcher	<i>Empidonax hammondi</i>	Ex3	
Gray Flycatcher	<i>Empidonax wrightii</i>	In	O
Dusky Flycatcher	<i>Empidonax oberholseri</i>	In	O
Cordilleran Flycatcher	<i>Empidonax occidentalis</i>	In	F
Eastern Phoebe	<i>Sayornis phoebe</i>	In	O
Say's Phoebe	<i>Sayornis saya</i>	In	O
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	In	F
Western Kingbird	<i>Tyrannus verticalis</i>	In	O
Eastern Kingbird	<i>Tyrannus tyrannus</i>	In	O
Loggerhead Shrike	<i>Lanius ludovicianus</i>	In	O
Northern Shrike	<i>Lanius excubitor</i>	Ex1	
White-eyed Vireo	<i>Vireo griseus</i>	Ex1	
Yellow-throated Vireo	<i>Vireo flavifrons</i>	In	F
Cassin's Vireo	<i>Vireo cassinii</i>	Ex1	
Blue-headed Vireo	<i>Vireo solitarius</i>	In	F
Hutton's Vireo	<i>Vireo huttoni</i>	In	F
Warbling Vireo	<i>Vireo gilvus</i>	In	F, O
Philadelphia Vireo	<i>Vireo philadelphicus</i>	In	F
Red-eyed Vireo	<i>Vireo olivaceus</i>	In	F
Sky Lark	<i>Alauda arvensis</i>	Ex1	
Horned Lark	<i>Eremophila alpestris</i>	Ex3	
Purple Martin	<i>Progne subis</i>	In	O
Tree Swallow	<i>Tachycineta bicolor</i>	In	O
Violet-green Swallow	<i>Tachycineta thalassina</i>	In	O
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	In	O
Bank Swallow	<i>Riparia riparia</i>	In	O
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	In	O
Barn Swallow	<i>Hirundo rustica</i>	In	O
Black-capped Chickadee	<i>Poecile atricapillus</i>	In	F, O
Mountain Chickadee	<i>Poecile gambeli</i>	In	F
Chestnut-backed Chickadee	<i>Poecile rufescens</i>	In	F
Boreal Chickadee	<i>Poecile hudsonicus</i>	In	F
Gray-headed Chickadee	<i>Poecile cinctus</i>	Ex1	
Tufted Titmouse	<i>Baeolophus bicolor</i>	Ex1	
Bushtit	<i>Psaltiriparus minimus</i>	In	F, O
Red-breasted Nuthatch	<i>Sitta canadensis</i>	In	F
White-breasted Nuthatch	<i>Sitta carolinensis</i>	In	F

Pygmy Nuthatch	<i>Sitta pygmaea</i>	In	F
Brown Creeper	<i>Certhia americana</i>	In	F
Rock Wren	<i>Salpinctes obsoletus</i>	In	O
Canyon Wren	<i>Catherpes mexicanus</i>	In	O
House Wren	<i>Troglodytes aedon</i>	In	F, O
Pacific Wren	<i>Troglodytes pacificus</i>	Ex1	
Winter Wren	<i>Troglodytes hiemalis</i>	In	F
Sedge Wren	<i>Cistothorus platensis</i>	In	O
Marsh Wren	<i>Cistothorus palustris</i>	In	O
Carolina Wren	<i>Thryothorus ludovicianus</i>	In	F, O
Bewick's Wren	<i>Thryomanes bewickii</i>	In	O
Blue-gray Gnatcatcher	<i>Polioptila caerulea</i>	In	F
American Dipper	<i>Cinclus mexicanus</i>	Ex3	
Golden-crowned Kinglet	<i>Regulus satrapa</i>	In	F
Ruby-crowned Kinglet	<i>Regulus calendula</i>	In	F
Northern Wheatear	<i>Oenanthe oenanthe</i>	Ex1	
Eastern Bluebird	<i>Sialia sialis</i>	In	O
Western Bluebird	<i>Sialia mexicana</i>	In	O
Mountain Bluebird	<i>Sialia currucoides</i>	In	O
Townsend's Solitaire	<i>Myadestes townsendi</i>	In	O
Veery	<i>Catharus fuscescens</i>	In	F
Gray-cheeked Thrush	<i>Catharus minimus</i>	In	O
Bicknell's Thrush	<i>Catharus bicknelli</i>	In	F
Swainson's Thrush	<i>Catharus ustulatus</i>	In	F
Hermit Thrush	<i>Catharus guttatus</i>	In	F
Wood Thrush	<i>Hylocichla mustelina</i>	In	F
American Robin	<i>Turdus migratorius</i>	In	F, O
Varied Thrush	<i>Ixoreus naevius</i>	In	F
Gray Catbird	<i>Dumetella carolinensis</i>	In	O
Brown Thrasher	<i>Toxostoma rufum</i>	In	O
Sage Thrasher	<i>Oreoscoptes montanus</i>	Ex1	
Northern Mockingbird	<i>Mimus polyglottos</i>	In	O
Eastern Yellow Wagtail	<i>Motacilla tschutschensis</i>	Ex1	
American Pipit	<i>Anthus rubescens</i>	In	O
Sprague's Pipit	<i>Anthus spragueii</i>	In	O
Bohemian Waxwing	<i>Bombycilla garrulus</i>	Ex3	
Cedar Waxwing	<i>Bombycilla cedrorum</i>	Ex2	
Lapland Longspur	<i>Calcarius lapponicus</i>	In	O
Chestnut-collared Longspur	<i>Calcarius ornatus</i>	In	O
Smith's Longspur	<i>Calcarius pictus</i>	In	O
McCown's Longspur	<i>Rhynchophanes mccownii</i>	In	O
Snow Bunting	<i>Plectrophenax nivalis</i>	In	O
Ovenbird	<i>Seiurus aurocapilla</i>	In	F
Louisiana Waterthrush	<i>Parlesia motacilla</i>	In	F
Northern Waterthrush	<i>Parlesia noveboracensis</i>	In	F, O
Golden-winged Warbler	<i>Vermivora chrysoptera</i>	In	O
Blue-winged Warbler	<i>Vermivora cyanopectera</i>	In	O
Black-and-white Warbler	<i>Mniotilta varia</i>	In	F

Prothonotary Warbler	<i>Protonotaria citrea</i>	In	F
Tennessee Warbler	<i>Oreothlypis peregrina</i>	In	F
Orange-crowned Warbler	<i>Oreothlypis celata</i>	In	O
Nashville Warbler	<i>Oreothlypis ruficapilla</i>	In	F
Connecticut Warbler	<i>Oporornis agilis</i>	In	F
MacGillivray's Warbler	<i>Geothlypis tolmiei</i>	In	F
Mourning Warbler	<i>Geothlypis philadelphia</i>	In	O
Common Yellowthroat	<i>Geothlypis trichas</i>	In	O
Hooded Warbler	<i>Setophaga citrina</i>	In	F
American Redstart	<i>Setophaga ruticilla</i>	In	F, O
Cape May Warbler	<i>Setophaga tigrina</i>	In	F
Cerulean Warbler	<i>Setophaga cerulea</i>	In	F
Northern Parula	<i>Setophaga americana</i>	In	F
Magnolia Warbler	<i>Setophaga magnolia</i>	In	F
Bay-breasted Warbler	<i>Setophaga castanea</i>	In	F
Blackburnian Warbler	<i>Setophaga fusca</i>	In	F
Yellow Warbler	<i>Setophaga petechia</i>	In	O
Chestnut-sided Warbler	<i>Setophaga pennsylvanica</i>	In	F, O
Blackpoll Warbler	<i>Setophaga striata</i>	In	F
Black-throated Blue Warbler	<i>Setophaga caerulescens</i>	In	F
Palm Warbler	<i>Setophaga palmarum</i>	In	O
Pine Warbler	<i>Setophaga pinus</i>	In	F
Yellow-rumped Warbler	<i>Setophaga coronata</i>	In	F
Prairie Warbler	<i>Setophaga discolor</i>	In	O
Black-throated Gray Warbler	<i>Setophaga nigrescens</i>	In	F
Townsend's Warbler	<i>Setophaga townsendi</i>	Ex3	
Black-throated Green Warbler	<i>Setophaga virens</i>	In	F
Canada Warbler	<i>Cardellina canadensis</i>	In	F
Wilson's Warbler	<i>Cardellina pusilla</i>	In	O
Yellow-breasted Chat	<i>Icteria virens</i>	In	O
Spotted Towhee	<i>Pipilo maculatus</i>	In	O
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	In	O
American Tree Sparrow	<i>Spizella arborea</i>	In	O
Chipping Sparrow	<i>Spizella passerina</i>	In	O
Clay-colored Sparrow	<i>Spizella pallida</i>	In	O
Brewer's Sparrow	<i>Spizella breweri</i>	In	O
Field Sparrow	<i>Spizella pusilla</i>	In	O
Vesper Sparrow	<i>Poocetes gramineus</i>	In	O
Lark Sparrow	<i>Chondestes grammacus</i>	In	O
Lark Bunting	<i>Calamospiza melanocorys</i>	In	O
Savannah Sparrow	<i>Passerculus sandwichensis</i>	In	O
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	In	O
Baird's Sparrow	<i>Ammodramus bairdii</i>	In	O
Henslow's Sparrow	<i>Ammodramus henslowii</i>	In	O
Le Conte's Sparrow	<i>Ammodramus leconteii</i>	In	O
Nelson's Sparrow	<i>Ammodramus nelsoni</i>	In	O
Fox Sparrow	<i>Passerella iliaca</i>	In	F
Song Sparrow	<i>Melospiza melodia</i>	In	O

Lincoln's Sparrow	<i>Melospiza lincolnii</i>	In	O
Swamp Sparrow	<i>Melospiza georgiana</i>	In	O
White-throated Sparrow	<i>Zonotrichia albicollis</i>	In	F, O
Harris's Sparrow	<i>Zonotrichia querula</i>	In	F, O
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	In	O
Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>	In	O
Dark-eyed Junco	<i>Junco hyemalis</i>	In	F, O
Scarlet Tanager	<i>Piranga olivacea</i>	In	F
Western Tanager	<i>Piranga ludoviciana</i>	Ex3	
Northern Cardinal	<i>Cardinalis cardinalis</i>	In	F, O
Rose-breasted Grosbeak	<i>Phenicicus ludovicianus</i>	In	F
Black-headed Grosbeak	<i>Phenicicus melanocephalus</i>	In	F, O
Lazuli Bunting	<i>Passerina amoena</i>	In	O
Indigo Bunting	<i>Passerina cyanea</i>	In	O
Dickcissel	<i>Spiza americana</i>	Ex1	
Bobolink	<i>Dolichonyx oryzivorus</i>	In	O
Eastern Meadowlark	<i>Sturnella magna</i>	In	O
Western Meadowlark	<i>Sturnella neglecta</i>	In	O
Orchard Oriole	<i>Icterus spurius</i>	In	O
Bullock's Oriole	<i>Icterus bullockii</i>	In	F, O
Baltimore Oriole	<i>Icterus galbula</i>	In	F, O
Gray-crowned Rosy-Finch	<i>Leucosticte tephrocotis</i>	Ex3	
Pine Grosbeak	<i>Pinicola enucleator</i>	In	F
House Finch	<i>Haemorrhous mexicanus</i>	In	O
Purple Finch	<i>Haemorrhous purpureus</i>	In	F
Cassin's Finch	<i>Haemorrhous cassinii</i>	In	F
Red Crossbill	<i>Loxia curvirostra</i>	Ex2	
White-winged Crossbill	<i>Loxia leucoptera</i>	Ex2	
Common Redpoll	<i>Acanthis flammea</i>	In	O
Hoary Redpoll	<i>Acanthis hornemanni</i>	In	O
Pine Siskin	<i>Spinus pinus</i>	Ex2	
American Goldfinch	<i>Spinus tristis</i>	Ex2	
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	Ex3	

2.4 Guidelines to Avoid Disturbance to Seabird and Waterbird Colonies in Canada

Seabirds and waterbirds are particularly vulnerable to the effects of human disturbance. These guidelines are designed to increase awareness of the sensitivities of Canada's seabird and waterbird colonies to disturbance, provide information on the applicable legal protection, and provide guidance on appropriate behaviour to follow when near breeding colonies of seabirds and waterbirds in order to avoid and minimize disturbance.

2.4.1 Seabirds and waterbirds

Seabirds are birds that frequent coastal waters and the open ocean; some are found exclusively in the marine environment. They include puffins, gannets, murres, razorbills, guillemots, shearwaters, petrels, auklets, murrelets and fulmars. Some seabirds can be found in both marine and freshwater areas, these include gulls, terns and cormorants (see [Legal protection](#) below for details on legal protection, acts and regulations). In general, seabirds have long life spans and low reproductive rates, with many species only laying one egg per year. They often nest on islands, on cliff-faces or in other inaccessible locations to avoid predators, and several species may nest together in mixed colonies. Some seabirds nest on ledges or on open rock, while others nest under boulders, in crevices or in burrows they have excavated in the soil. Colonies in Canada range in size from a few pairs of breeding terns or gulls to over a million pairs of Leach's Storm-petrels.

Most species spend much of the year at sea. In spring and summer, they congregate in colonies in order to court, mate, lay and incubate their eggs, and raise and feed their young. Breeding seasons along Canada's southern oceanic coasts extend from March through September, and through the ice-free period in Canada's Arctic.

Colonial waterbirds are the freshwater equivalent of seabirds; they share many of the behavioural and conservation traits of seabirds. In Canada, colonial waterbirds include gulls, terns, herons, egrets, Double-crested Cormorants and American White Pelicans (see [Legal protection](#) below for details on legal protection, acts and regulations). The distinction between freshwater nesters and seabirds is not always clear-cut, as many species will breed in both environments. In the freshwater environment, they usually breed on islands; however, they will also breed on undisturbed mainland areas, e.g. peninsulas, fenced off areas near water and even on roof tops, and some species breed in marshes. In marine areas, they breed in coastal mainland areas as well as on coastal islands. The breeding season for colonial waterbirds extends from March through September, and through the ice-free period in Canada's Arctic.



Colonies are vulnerable to habitat loss and destruction, and to the impacts of catastrophic events such as storms, disease, and oil spills. Birds breeding in colonies are particularly vulnerable to the effects of human disturbance.

2.4.2 Humans, seabirds and waterbirds

2.4.2.1 History

For hundreds of years, seabirds and colonial waterbirds were exploited for meat, eggs, and feathers, and many breeding colonies were disrupted by human disturbance and development. The Great Auk, a flightless colonial-nesting seabird, was harvested to extinction by the mid-1800s. Concern over severe declines in the numbers of seabirds breeding in coastal regions of Canada's eastern provinces is one of the issues that contributed to the adoption of the *Migratory Birds Convention Act* in 1917.

2.4.2.2 Legal protection

Except for cormorants and pelicans, all regularly occurring seabirds and waterbirds in Canada are protected under the [Migratory Birds Convention Act, 1994](#) (see: the complete [list of species protected under](#)

[the Act](#)). Cormorants and pelicans are protected under provincial or territorial acts and regulations. It is illegal to harass or kill migratory birds, or to destroy or disturb their nests or eggs. It is also illegal to deposit a substance that is harmful to migratory birds, or permit such a substance to be deposited, in waters or areas frequented by migratory birds. Many colonies are afforded additional protection in Migratory Bird Sanctuaries, National Wildlife Areas or National Park Reserves under federal jurisdiction or as Ecological Reserves, Wildlife Habitat Areas, Wildlife Management Areas or Wildlife Conservation Areas under provincial or territorial jurisdiction. These designations may add specific regulations that go beyond the guidelines presented here, and most protected colonies are completely closed to visitation during the breeding periods.

Under Canada's [Species at Risk Act](#), several species of seabirds and colonial waterbirds are classified as being at risk: Roseate Terns, Marbled Murrelets, Ivory Gulls, Ancient Murrelet, Ross's Gull, Great Blue Heron (*fannini* subspecies). These birds, their residences, and when relevant, their critical habitat are given additional protection by the act.

In addition to these designations, there are numerous provincial, territorial, regional and municipal acts, policies and guidelines that may regulate visitors' activities. Before approaching coastal islands or mainland colonies, prospective visitors should contact relevant agencies and local landowners to determine what restrictions may apply, and to obtain any necessary permits.

2.4.2.3 Impacts of disturbance

Seabird and waterbird breeding colonies throughout North America have seen increased visitation by private boaters, picnickers, tourists and fishers. Many people are not aware that approaching colonies, landing boats, letting pets run loose, walking across breeding areas or staying too long in one spot can affect these birds. Even approaching too closely by water can put seabirds and colonial waterbirds at risk.

Disturbance can cause these birds to abandon their nests or young, or to use valuable energy reserves for defense, instead of incubating eggs and feeding their young. The presence of humans in close proximity to nests may prevent adult birds from returning to protect and feed their young, and expose eggs or young to predation, and to the lethal effects of heat, cold and rain. As many species of seabirds and waterbirds nest in hidden crevices, burrows, vegetation or on top of exposed rocky ledges, nests may not be obvious to a casual observer, especially where species are active only after dark. A careless step in a colony can destroy a bird's breeding burrow, nest, eggs, or chicks.

When adult birds are flushed, many of the young chicks wander from their nest site and may fall to the water, be taken by predators, or be pecked to death by neighbouring birds. Some species are particularly sensitive at certain stages of their breeding cycle. For example, disturbance can cause chicks to leave the nest too soon, resulting in high chick mortality. Young herons are particularly prone to leaving their nests when they are disturbed.

2.4.3 Guidelines

Environment Canada recommends that, during the breeding season, people stay off seabird and waterbird colonies, maintain appropriate buffer zones around colonies, and avoid any disturbance of migratory birds.

Human activities in waters around breeding colonies, such as fishing and boating or low-altitude flying, can also put these birds at risk. Such activities should be kept far enough away to avoid flushing birds from their nests, or causing them to dive at you in an attempt to drive you away from the colony. In coastal areas, colonial nesting seabirds often share rocky islands and ledges with other wildlife, such as

seals or sea lions. You know you are too close if these marine mammals become restless and plunge into the water. In all cases where you may be disturbing seabirds and waterbirds, move away as quickly and quietly as possible.

Researchers requesting access to bird colonies should contact their local Canadian Wildlife Service office for permitting requirements.

Many protected areas (Migratory Bird Sanctuaries, National Wildlife Areas, National Parks, etc.) that contain breeding colonies have specific restrictions regarding buffer zones on land and in water, as well as flight restrictions. Please [contact the local Canadian Wildlife Service office](#) for more information on these restrictions.

General guidance on reducing disturbance to colonies that do not have other restrictions, are given below.

2.4.3.1 On land

- In general, maintain a distance of at least 300 m from seabird and waterbird colonies. It may be possible to approach closer at authorized and supervised locations where appropriate fenced viewing facilities have been established.
- For high-disturbance activities (e.g. drilling, blasting), maintain a buffer of at least 1 km from colonies.

If you should inadvertently find yourself at a colony, leave as quietly as possible and without sudden movements. Your local [Canadian Wildlife Service office](#) would appreciate hearing of a new colony location.

2.4.3.2 On the water

- In general, maintain a minimum distance of at least 300 m from all areas of the island or colony occupied by seabirds and waterbirds.
- Always travel at steady speeds when close to seabird and waterbird colonies, moving parallel to the shore, rather than approaching the colony directly.
- Avoid any sharp or loud noises, do not blow horns or whistles, and maintain constant engine noise levels.
- Do not pursue seabirds or waterbirds swimming on the water surface, and avoid concentrations of these birds on the water.
- Where possible, only use certified tour boats or accredited guides.
- Anchor large vessels, such as cruise ships, at least 500 m from the breeding islands and only approach as close as 300 m in smaller vessels. If closer access is required, please contact [Environment Canada's Canadian Wildlife Services office](#) in your region.
- Never dump waste or garbage overboard, because
 - even small amounts of oil can kill birds and other marine life, and habitats may take years to recover; and
 - fishing line, cans, plastic bottles and other plastic waste can injure or kill birds.

2.4.3.3 From the air

- Helicopters and other aircraft should keep well away from breeding colonies, as aircraft can cause severe disturbance to seabird/waterbird colonies, and there is a serious risk of collision with flying birds.

- Please consult with the appropriate [regional Canadian Wildlife Service office](#) for guidelines on appropriate flight altitudes and horizontal distances in order to minimize disturbance to bird colonies.
- Protected areas such as Migratory Bird Sanctuaries and National Wildlife Areas may have specific restrictions regarding flight altitudes. Pilots should contact the appropriate [regional Canadian Wildlife Service office](#) for these restrictions.

Further information:

For more information on seabirds or colonial waterbirds and their habitats, guidelines, restrictions and permit requirements for visiting their colonies, and information on ways to observe them without putting them at risk, please contact [Environment Canada's Canadian Wildlife Service office](#) in your region.

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2.5 Birds at sea

2.5.1 Threats and risk factors for seabirds

Seabird populations are threatened by many factors including introduced predators on nesting colonies, contaminants, marine oil pollution and litter, climate change, tourism, disease, and aquaculture activities. Some of the characteristics and behavioral traits of seabirds make them particularly vulnerable to the effects of human activities in the marine environment. For example, many seabird species do not start breeding until they are several years old. Although most seabird species are long-lived, many produce a small number of eggs (or only a single egg) per year and do not necessarily breed every year. This means that the deaths of breeding adults can have a substantial impact on populations over time.



Some of the threats and risks that can result in mortality to seabirds and potentially affect their populations are described below.

Many seabirds congregate in marine areas of high productivity, where there is a greater abundance of food. Fisheries tend to also concentrate their activities in high-productivity areas, as target fish are often found there. Given the higher densities of seabirds and fisheries in these areas, there is an increased chance for birds to have fatal interactions with fishing gear. In addition, many seabirds are attracted to fishing vessels as potential sources of food. This combination of factors, coupled with birds' specific foraging techniques such as diving and pursuing prey underwater, can result in injury or death to the birds.

The presence of debris in the marine environment, particularly plastics and other non-biodegradable items, can have an adverse effect on seabirds. Seabirds may become entangled in these items and can also confuse them for food. Ingesting debris can cause blockage of the intestinal tract, reduced appetite, and reduced dietary efficiency. It can also lead to the accumulation of some contaminants in the birds' tissues.

Feathers provide seabirds with waterproofing, insulation and buoyancy, all of which are necessary for their survival. However, if a seabird comes in contact with even trace amounts of oil, the waterproofing properties of the feathers will be destroyed. This can lead to death from hypothermia or drowning. Oiled seabirds that do not die from hypothermia or drowning may die from ingesting petroleum-based oil when they clean their feathers. Birds that do survive being oiled may have reduced life expectancy and

reduced breeding success. Seabirds and their populations can be affected by large single-event catastrophic oil spills, as well as by chronic oiling from small-scale discharges of oil-contaminated bilge water or from sources of unknown origin. Moreover, exposure to fish and vegetable oils can be just as deadly to seabirds as petroleum-based oils as they can also disrupt the waterproofing properties of feathers.

Seabirds are attracted to large offshore structures including drilling and production platforms. The birds are attracted by visual cues from the platforms, lighting and flares, and increased concentrations of food near the structures. Birds may be injured or killed when they collide with the platforms or fly into lights or flares. They can also be affected by the thin, barely visible sheens of oil that can form around the platforms.

2.5.2 How are seabirds protected?

Except for cormorants and pelicans, all regularly-occurring seabirds in Canada are protected under the [Migratory Birds Convention Act, 1994](#) (MBCA). Please see the complete [list of species protected under the Act](#). It is illegal to harass or kill migratory birds, or to destroy or disturb their nests or eggs. It is also illegal to deposit any substance that is harmful to migratory birds, or permit such a substance to be deposited, in waters or areas frequented by migratory birds. Some species of birds protected under the MBCA have also been listed in Schedule 1 of the [Species at Risk Act](#) (SARA). These species receive protection from both the MBCA and SARA.

2.5.3 What is being done to address the risks to seabirds?

Fisheries bycatch of seabirds is an issue affecting thousands of seabirds each year in Canada. Environment Canada is working with Fisheries and Oceans Canada to find ways to reduce the risk of seabird mortality from human activities at sea; please see the report: [Canada's Progress Report on the Implementation of Key Actions Taken Pursuant to the National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries \(March 2007\)](#).

Some of the sources of chronic oil pollution can be very difficult to identify, as small-volume discharges are often unreported or unnoticed. Environment Canada is working closely with Transport Canada and academic partners to explore the spatial patterns of background oil pollution, and to identify the human activities that may be causing them. The study is using data collected by Transport Canada's [National Aerial Surveillance Program \(NASP\)](#) and Environment Canada's Marine Aerial Reconnaissance Team (MART). The NASP conducts regular surveillance flights over the Pacific, Atlantic and Arctic Oceans, using state-of-the-art equipment to detect and map the presence of oily substances on the surface of the ocean.

In the cases of uncontrolled or accidental releases of hazardous substances such as oil, Environment Canada coordinates a response through the [Environmental Emergencies Program](#). The program concentrates on preventing damage to wildlife and their habitat. To support the program, Environment Canada:

- provides data on migratory birds, species at risk, and sensitive habitats
- conducts surveys of affected or potentially affected areas and the migratory bird populations
- provides permits for the capture and treatment of affected migratory birds and species at risk
- provides guidance to other agencies on the clean-up of migratory birds and species at risk
- assesses the damage to migratory birds and species at risk (and their populations)
- provides documentation for future cost recovery from the responsible party
- studies affected populations to determine the status of recovery

Environment Canada conducts research and monitoring to determine the areas and time periods where seabirds congregate. This is done to raise awareness of the potential risks to seabirds from human activities, and to identify the areas and time periods when those risks may be higher. The information from this research and monitoring is also provided in order to facilitate risk management decisions by those who carry out activities in areas where seabirds are found.

The first phase of this work was a study to determine [areas of increased density for species vulnerable to fisheries bycatch in Canada's Pacific Ocean](#). Similar studies are being undertaken to determine bird densities for other regions such as eastern Canada, for other species, and for other sectors. Results from these studies will be posted on Environment Canada's website as they become available.

2.5.4 Determining potential high-density areas for longline and gillnet vulnerable seabirds

Although birds at sea may be encountered at any time of year and in almost any location, many species tend to concentrate in particular areas. The birds are at greater risk if there are interactions between seabirds and human activities in those areas.

Seabirds are vulnerable to either longline or gillnet fisheries bycatch; they may become entangled in trawl or gill nets or they may become hooked and pulled underwater when they attempt to take bait from longlines. Also, birds can collide with the cables that run between a vessel and its trawl nets, although this happens less frequently.

2.5.4.1 Methods used to identify potential high-density areas for some seabirds on Canada's Pacific coast

Environment Canada has identified marine areas of high seabird density on Canada's Pacific Coast for four groups of seabirds. These four groups were chosen because they are the seabirds most frequently taken as fisheries bycatch in Canada's Pacific waters. Albatrosses and large gulls are most frequently caught on longline gear; murres and Rhinoceros Auklets are most frequently caught in salmon gillnets.

Areas of heightened density were identified by analyzing data on seabird observations from Environment Canada's Pelagic Seabird Survey Database. Observations used in the study were collected between 1982 and 2010 within 150 km of the coast of British Columbia (B.C.), southern Alaska, and northern Washington. All the data were collected through opportunistic surveys; that is, observers went aboard ocean-going vessels as opportunities for doing so were available. Consequently, the survey effort is not evenly distributed. Once on the vessel, observers collected the data using a standardized survey protocol.

Since the areas of heightened densities were estimated based on opportunistic surveys, other areas of seabird congregation may not have been surveyed or detected. In order to account for uneven survey effort, seabird densities were estimated using total counts divided by the total number of surveys for each 250m² survey cell. The Kernel Density Estimation (KDE) technique was used to obtain smooth estimates from the observed occurrences.

The data for each species group were analyzed according to the breeding and non-breeding seasons specific to each group as shown in [Table 1](#), below. These dates were chosen to represent the breeding and non-breeding seasons for the purposes of data analysis only; actual breeding times may vary from year to year, and birds may sometimes nest outside these dates.

Table 1. Dates selected for the breeding and non-breeding seasons used in the data analysis for each species group

Species group/species	Breeding Season Used for the Analysis	Non-breeding Season Used for the Analysis
Albatrosses	1 Nov - 31 Jul	1 Aug - 31 Oct
Large Gulls	1 May - 15 Aug	16 Aug - 30 Apr
Murres	1 Apr - 7 Sep	8 Sep - 31 Mar
Rhinoceros Auklet	15 Apr - 15 Sep	16 Sep - 14 Apr

Disclaimer: The information provided here can be used to identify areas of heightened density for some seabirds where the risk of encounters is potentially higher. This can support the planning of activities in order to reduce the risk of detrimental effects. It should be noted that this information constitutes advice only. It is the responsibility of the individual or company undertaking the activities to evaluate risks and determine the measures required. In addition, readers should be aware of the information contained in the disclaimer found at the [Avoidance Guidelines](#) web page.

Please refer to [Map 1](#) for the marine locations and terrestrial locations mentioned in the descriptions below.

2.5.4.2 High-density areas identified for longline vulnerable seabirds

2.5.4.2.1 *Albatrosses*

Photo: © John Ford, Fisheries and Oceans Canada

Albatrosses can be found within Canada's Pacific Exclusive Economic Zone (EEZ) in all months of the year. They breed outside of Canada on the Hawaiian Islands and on small islands off the coasts of Japan and Mexico. Adults travel great distances to the west coast of North America when seeking food for their young. Two species of albatross have been listed under the Species at Risk Act: the Short-tailed Albatross is listed as Threatened; and the Black-footed Albatross, which is the most abundant albatross species found in Canadian waters, is listed as Special Concern. More information, including status reports and recovery strategies, can be found at the [Species at Risk Public Registry](#).



During the [breeding season for albatrosses](#), several high-density areas were identified along the outer continental shelf and shelfbreak/slope areas ([Map 2](#)); notably, along **most of the west coast of Vancouver Island (especially west of La Perouse Bank to approximately Estevan Point)**. Other areas of heightened density were the shelfbreak region west of the Scott Islands, the entrance to Queen Charlotte Sound (especially southeast of Kunghit Island), and waters west of Frederick and Langara Islands, Haida Gwaii.

During the [non-breeding season](#), albatrosses showed a similar pattern as during the breeding season with high-density areas associated with the shelf-break/slope region, notably **the La Perouse Bank area, the entrance to Queen Charlotte Sound, and waters to the west of Langara Island** ([Map 2](#)). Additional high-density areas were the slope region west of Nootka Sound, the edge of Cook Bank, the outer shelf and slope northwest of Anthony Island, and west of Learmonth Bank.

Overall, albatrosses are present at higher densities off Canada's Pacific coast during the breeding season than the non-breeding season, and are strongly associated with outer shelf and continental slope waters.

2.5.4.2.2 *Large gulls*

Photo: © Catherine Jardine, Bird Studies Canada



Of the five gull species included in the analysis, the only local coastal breeder in B.C. is the Glaucous-winged Gull, which is present year round on the Pacific Coast. Approximately 29,000 pairs of Glaucous-winged Gull nest in B.C.; the largest colonies are on the Chain Islets, Mandarte Island, Mitlenatch Island, and Cleland Island. The other four large gull species (Herring, Western, Glaucous and Thayer's Gulls) breed elsewhere and are found in marine areas of British Columbia primarily during the non-breeding season. For this study, the breeding and non-breeding seasons of the Glaucous-winged Gull were used to define the [breeding and non-breeding seasons for large gulls](#).

During the [breeding season for large gulls](#), two main areas of

high-density were identified ([Map 3](#)): a broad area **west of the entrance to the Juan de Fuca Strait centred on La Perouse Bank**, and an area in the **southern Strait of Georgia between Victoria and Vancouver**. Other areas with somewhat elevated densities included shelf waters west and north of Cleland Island, the northern end of Vancouver Island, the entrance to Queen Charlotte Strait, west of Kunghit Island, and off Forrester Island. **The locations of most of these areas of heightened density closely reflect the distribution of many of the large Glaucous-winged Gull colonies.** This is due the fact that many seabirds are colonial breeders, and during the breeding season high numbers of individuals may be found foraging relatively close to their nesting colonies.

During the [non-breeding season](#) many of the high-density areas were located near Glaucous-winged Gull colonies ([Map 3](#)). The average density of large gulls was much higher during the non-breeding season than during the breeding season. The birds also appear to be more widely distributed (further offshore) during the non-breeding season. This is likely related to the influx of additional Glaucous-winged Gulls and other gull species from outside of British Columbia during the non-breeding season.

2.5.4.3 High-density areas identified for gillnet vulnerable seabirds

2.5.4.3.1 *Murres*

Photo: © Catherine Jardine, Bird Studies Canada

Approximately 4,300 breeding pairs of Common Murres and possibly a few Thick-billed Murres nest along the coast of British Columbia. More than 90% of the Common Murres nesting in British Columbia breed on Triangle Island. The remainder breed in Haida Gwaii or in low numbers on small islands off the west coast of Vancouver Island.



During the [breeding season for murres](#) five high-density areas were identified ([Map 4](#)); two were associated with Common Murre colonies (**Triangle Island and Forrester Island**). High-density areas for murres during the breeding season were situated in **a triangular area bounded by the entrance to Queen Charlotte Strait, Calvert Island and Cook Bank; and with shelf waters west of Clayoquot Sound.** Other high-density areas were identified at the **eastern part of the Juan de Fuca Strait (south of Victoria), and areas southwest of Lucy Island and east of Forrester Island.**

In the [non-breeding season](#), murres move into more coastal waters, especially in the southern half of the province ([Map 4](#)). High-density areas have been found **southwest of Estevan Point, in the La Perouse Bank area, at the eastern end of Juan de Fuca Strait, and at the northern extent of the Strait of Georgia.**

Throughout the year, murres prefer inner continental shelf/coastal waters. From July through late September, hundreds of thousands of murres (primarily Common Murres) are present along the west coast of the southern half of Vancouver Island and northern Washington. The number of birds greatly exceeds the breeding population (of Common Murres) in British Columbia and Washington, and it is assumed that most of the birds are from colonies along the Oregon coast.

2.5.4.3.2 *Rhinoceros Auklet*

Photo: © Catherine Jardine, Bird Studies Canada



An estimated 360,000 pairs of Rhinoceros Auklets nest in British Columbia; the largest colonies are on Pine and Storm Islands, Triangle Island, and the Moore Islands.

During the [breeding season](#) for Rhinoceros Auklets, five high-density areas were identified ([Map 5](#)). Four of the high-density areas were close to breeding colonies. The most significant high-density area encompassed **most of Cook Bank and the entrance to Queen Charlotte Strait**, reflecting the proximity of large breeding colonies (**Pine Island, the Storm Islands and Triangle Island**). Other areas of heightened density were the **waters off Anthony and Kunghit Islands and adjacent to Lucy Island**. The high-density area in the middle of **Dixon Entrance** may be birds associated with either Forrester Island, where more than 50,000 pairs nest, or with Lucy Island, where more than 25,000 pairs nest.

During the [non-breeding season](#), a similar pattern was found for Rhinoceros Auklets, although at lower densities ([Map 5](#)). Notable changes were the observed lower densities at the Cook Bank – Queen Charlotte Sound area, and the **heightened densities at the shelf waters off the southwest coast of Vancouver Island**. The waters **west of Lucy Island** remained an area of high concentration. The distribution of Rhinoceros Auklets during the non-breeding season was more restricted than during the breeding season (a similar pattern to that of murres); they occur off the B.C. coast, generally within 100 km of shore.

Overall, Rhinoceros Auklets are strongly associated with marine areas adjacent to their nesting colonies and appear to favour continental shelf waters.

Resources

Available Bycatch Mitigation Factsheets

[BirdLife International](#) has developed a series of [Seabird Bycatch Mitigation Factsheets](#).

General information on Seabirds

General information on seabirds can be found at: [Hinterland Who's Who](#)

Information on the Status of Birds in Canada

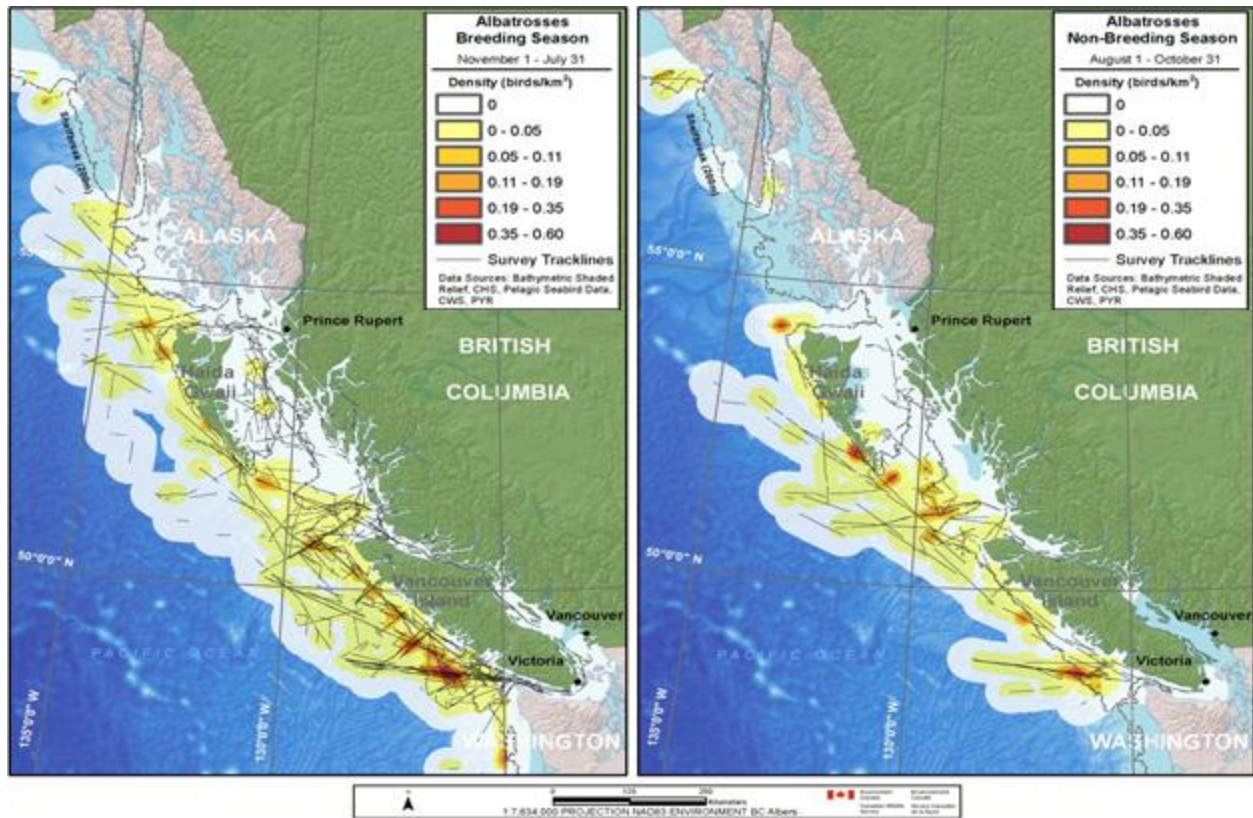
The [Status of Birds in Canada](#) web section contains information on the current population status and trends for almost 400 species of birds that regularly breed in Canada.

Map 1: Marine and terrestrial locations mentioned in the text. Marine locations are in blue text, terrestrial locations are in black text.



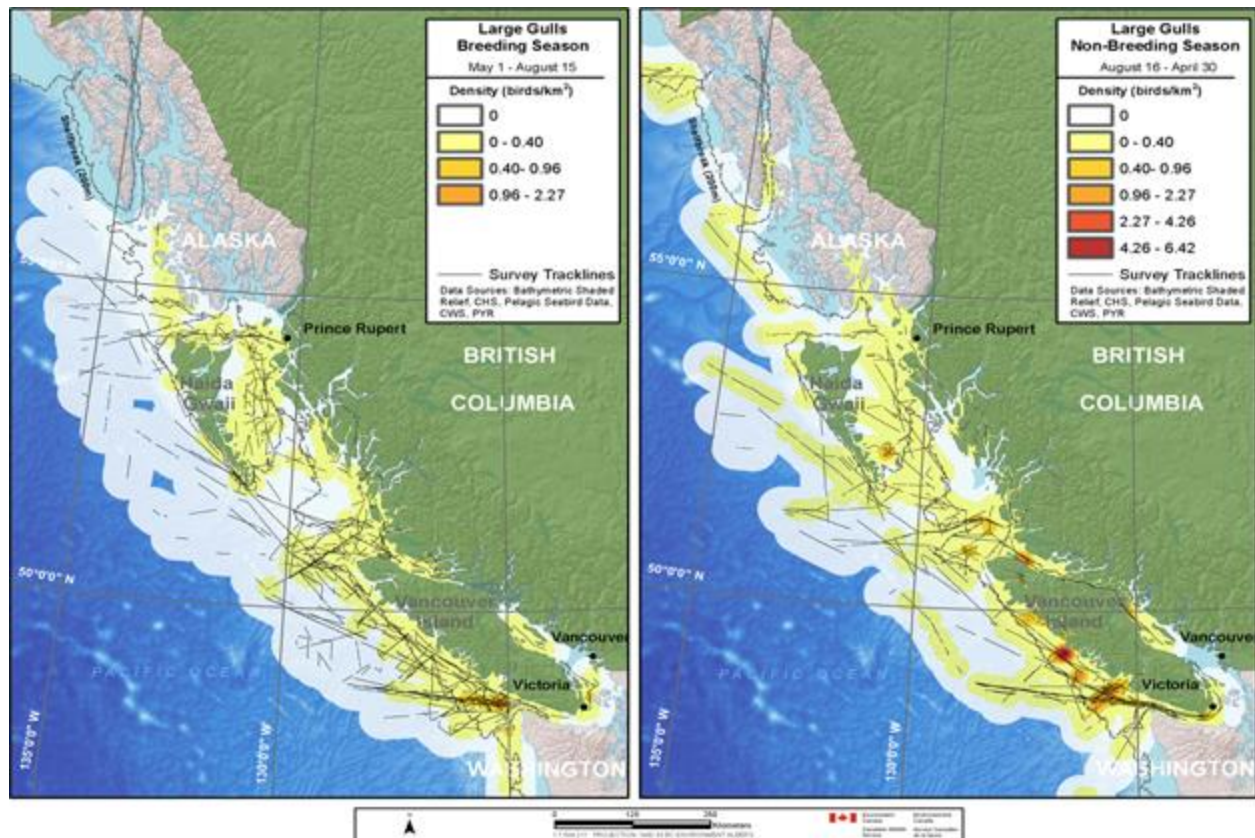
[Long Description for Map 1](#)

Map 2: Densities of albatrosses identified by survey transects during (1982-2010) during the breeding season (left panel) and during the non-breeding season (right panel). Survey tracklines lines are shown (see legend in map).



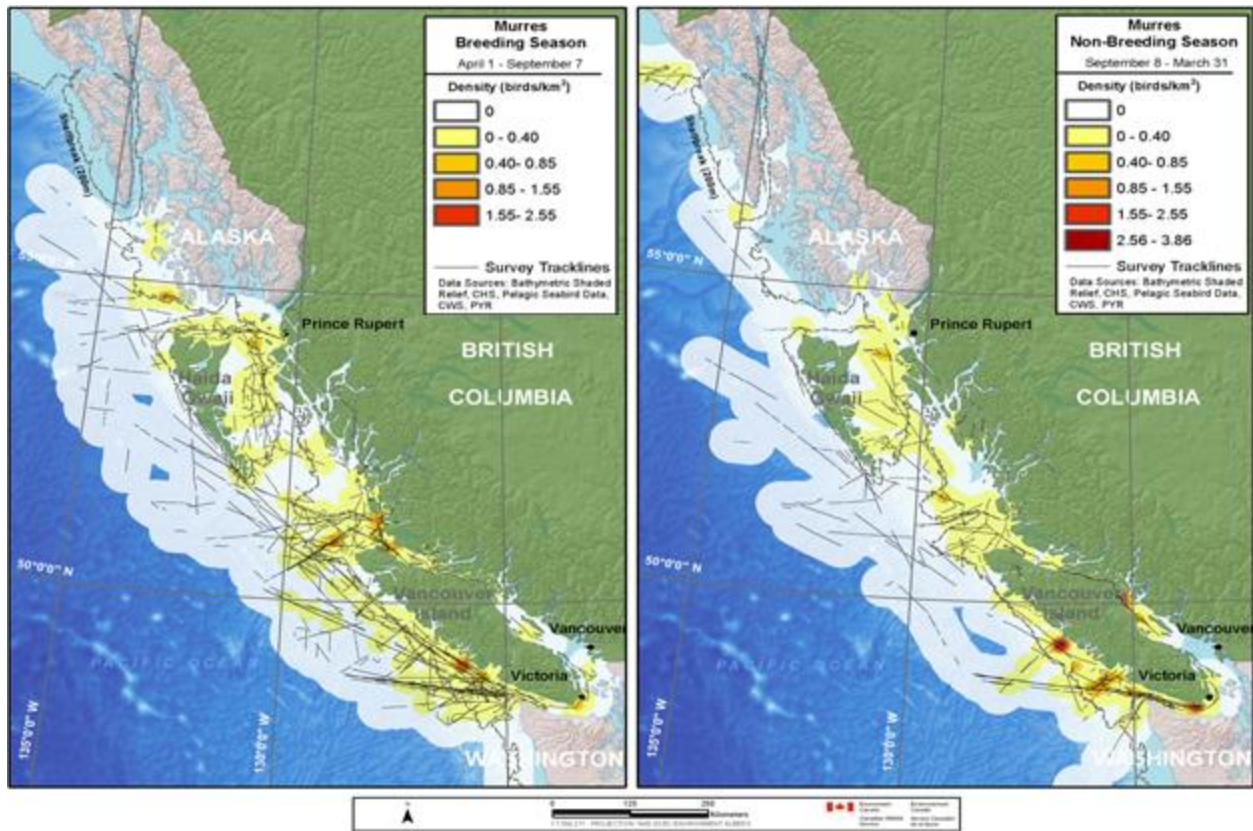
[Long Description for Map 2](#)

Map 3: Densities of large gulls identified by survey transects during (1982-2010) during the breeding season (left panel) and during the non-breeding season (right panel). Survey tracklines lines are shown (see legend in map).



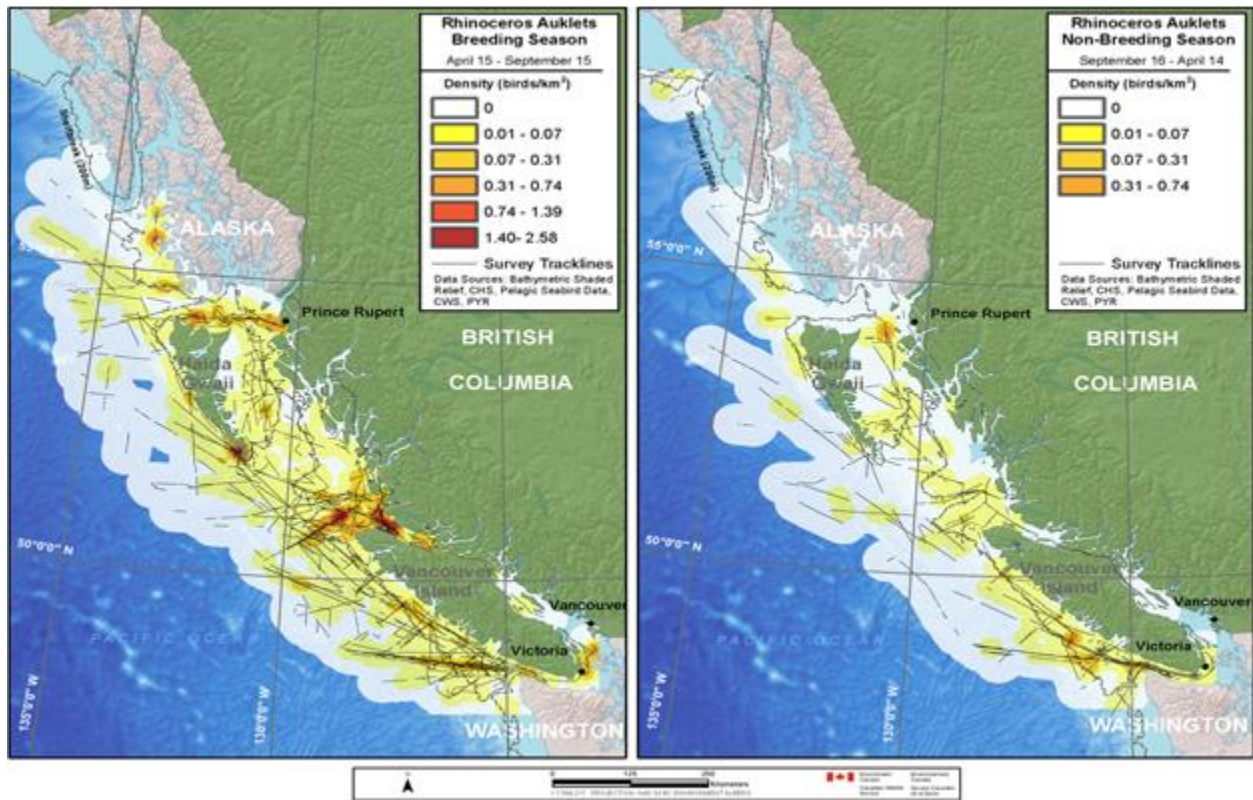
[Long Description for Map 3](#)

Map 4: Densities of murres identified by survey transects during (1982-2010) during the breeding season (left panel) and during the non-breeding season (right panel). Survey tracklines lines are shown (see legend in map).



[Long Description for Map 4](#)

Map 5: Densities of Rhinoceros Auklets identified by survey transects during (1982-2010) during the breeding season (left panel) and during the non-breeding season (right panel). Survey tracklines lines are shown (see legend in map).



[Long Description for Map 5](#)

3 Beneficial Management Practices

Individuals and companies who implement appropriate measures that avoid or minimize the risk of effects to migratory birds and their nests and eggs, contribute to the conservation of migratory birds in Canada. The development of such measures can be optimized by including relevant conservation recommendations into Beneficial Management Practices (BMPs). Such BMPs provide a sub-set of relevant and specific guidance and methods that can both minimize the risk of detrimental effects to migratory birds, nests and eggs, and address other effects on migratory bird conservation.



Environment Canada does not have the authority to prescribe or recognize specific BMPs for specific circumstances or activities. Interested parties must base development and adoption of BMPs on a voluntary decision regarding how to conduct business in order to meet their objectives, including responsibilities towards migratory birds and other biodiversity. All individuals and companies are legally bound to comply with the existing prohibitions under the federal migratory bird legislation.

Environment Canada's role in the BMP development process is to:

- provide scientific background on the ecology and management needs of migratory birds ([Avoidance Guidelines](#));
- help with the interpretation of recommended objectives and conservation actions (including [Bird Conservation Region Strategies](#); and [Recovery Strategies](#) for migratory birds that are listed under the *Species at Risk Act*);
- facilitate development of BMPs by providing guidance on elements that should be considered in the development of BMPs for migratory bird conservation;
- consider the contribution of BMPs to minimizing the risk of destruction of nests and eggs or harming of birds and achieving migratory bird conservation objectives.
 - **Note:** Technical feedback from Environment Canada does not constitute an authorization under federal migratory bird legislation.

For more information, please contact [Environment Canada's Canadian Wildlife Service office in your region](#).

3.1 Guide for Developing Beneficial Management Practices for Migratory Bird Conservation

The purpose of this guide is to support the [conservation of birds](#) by encouraging the development of Beneficial Management Practices (BMPs) by industries or stakeholders whose activities may affect migratory birds. The guide:

- outlines a process for preparing a coherent and complete BMP
- provides guidance on the key points a BMP should contain, and
- explains the roles and responsibilities of stakeholders, other interested parties, and Environment Canada

While this guide is aimed primarily at a technical audience, the principles and elements suggested for developing BMPs are relevant for any individuals who engage in activities that may affect migratory birds. Simpler BMPs may be appropriate for less complex activities or those with a lower risk of affecting migratory birds.

In all cases, it is recommended that people assess the risks, and where possible, develop and implement appropriate preventive and mitigation measures – which can include BMPs – to minimize the risk of incidental take and to help maintain sustainable populations of migratory birds.

3.1.1 Conservation context for birds in Canada

The federal government is directly responsible for protecting and conserving the vast majority of bird species encountered in Canada, specifically those protected by the [Migratory Birds Convention Act, 1994 \(MBCA\) and Regulations](#). Most species of birds not protected by the MBCA are covered under provincial and territorial wildlife acts. Some species are also protected by federal ([Species at Risk Act](#)), provincial or territorial species at risk legislation.

Federal, provincial, territorial and Aboriginal governments are key partners in the conservation of migratory birds. The Canadian Council of the [North American Bird Conservation Initiative](#) (NABCI) provides a discussion forum for bird conservation and management issues by government authorities and interested stakeholders.

Beyond the basic requirement to comply with existing legislation, there are many potential opportunities to influence the conservation of birds, especially through habitat management. For this reason, [Bird Conservation Region \(BCR\) Strategies](#) provide conservation objectives, describe threats, and recommend conservation actions for all priority birds in Canada. BCR strategies are a source of information for coordinating conservation measures for birds in Canada, which can help inform the development of Beneficial Management Practices (BMPs).

3.1.2 What is a Beneficial Management Practice?

While [avoidance guidelines](#) can help individuals and companies plan their activities in order to comply with existing prohibitions, another recommended approach for industries seeking to minimize the risk of impacts to migratory birds is to develop and implement BMPs that are specific to their operations. BMPs can also be very useful in the broader context of long-term conservation of bird populations and their habitat.

A BMP is any kind of existing or new practice that will avoid or reduce risks to migratory birds or their habitats. Companies, associations and individuals can develop and adopt BMPs on a voluntary basis. A BMP should be economically desirable, socially acceptable, and practical to apply in a given sector.

BMPs describe the best ways of doing things in particular situations and at specific time periods, and provide ideal models of environmental performance. The aim of BMPs is to eliminate or minimize negative consequences for one or more environmental factors related to the conservation of migratory birds or their habitats.

Environment Canada does not have the authority to prescribe, recognize or approve specific BMPs. Using BMPs does not necessarily mean compliance with legislation, but rather, serves to reduce risk. Interested parties develop and adopt BMPs by choice. They must weigh their decisions regarding how to conduct activities to meet their own objectives while balancing responsibilities towards migratory birds. All individuals and companies are required to comply with the prohibitions under the federal migratory bird legislation. Please refer to the [Beneficial Management Practices](#) website for more details on Environment Canada's role in the BMP development process.

3.1.3 What functions do BMPs have?

BMPs benefit birds and their habitats, and support migratory bird and habitat conservation on working landscapes.

BMPs benefit interested companies, associations or individuals through increased likelihood of regulatory compliance and through demonstrated good environmental stewardship by contributions to migratory bird conservation.

BMPs can link on-the-ground action to conservation priorities contained in [BCR Strategies](#) and other conservation plans. BMPs also help achieve values important to Canadians because they contribute to fulfilling the purpose of the [MBCA](#) : the protection and conservation of migratory birds—as populations and individuals—and their nests.

3.1.4 Guiding principles for the development and application of BMPs

1. A BMP should be designed to manage for healthy bird populations while minimizing consequences for individual birds. Bird conservation is the goal of BMPs.
2. A BMP should use the best available science.
3. A BMP should take a precautionary approach: that is, greater caution should be exercised when information is uncertain, unreliable or inadequate.
4. BMPs should use an adaptive management approach. Their performance should be regularly assessed with respect to desired outcomes for migratory bird conservation, and should be revised accordingly.

3.1.5 How to prepare a BMP document

- A BMP needs to clearly identify the bird conservation issues to be addressed, and should carefully identify and evaluate the specific practices that would deal with those issues.
- When developing a BMP, avoid making assumptions about issues and their solutions. Individuals and companies are advised to seek professional advice and investigate relevant local or species-specific information.
- Keep in mind that issues can and most probably will change over time, so BMPs will need to be kept up to date.

3.1.5.1 Background documentation

It will be useful to have on hand some key documents relevant to the preparation of BMPs.

- The guide for developing BMPs (this guide)
- All available [BCR strategies](#) relevant to your operations
- Any federal [Species at Risk](#) recovery and/or management plans and action plans relevant to your operations
- The relevant Environment Canada [Avoidance Guidelines](#) for avoiding impacts on migratory birds, nests and eggs

Other key documents include any existing BMPs that may be applicable in whole or in part in your sector or region. Additional relevant background information can include documentation on habitat conservation priorities and guidelines for influencing land protection and management decisions.

Examples include protected areas plans, strategies and plans from the Canadian [Habitat Joint Ventures](#), and the guide [How Much Habitat is Enough](#).

3.1.5.2 Elements of a BMP

A comprehensive BMP document should include the following key elements:

[Assessment](#)

This section should:

- summarize the bird conservation issue that the BMP will address
- summarize existing BMPs that are relevant for your region, industry, or operation
- provide references to the existing BMPs where possible, and
- provide a short analysis of why and how those BMPs are relevant for the development of your BMP

[Scope](#)

This section should describe the full context for the application of the BMP including, but not necessarily limited to, the following:

1. To what sector and to what operation within that sector does the BMP apply?
2. What is the nature of activity or sector to which the BMP applies, including the geographic scope? For example, is this an individual farming operation? Is it the entire right-of-way maintenance program for a large, national pipeline company? Describing specific aspects of the business is helpful here.

[Proposed BMP\(s\)](#)

This section should provide a detailed description of the entire context for the implementation of the BMP. This step involves documenting in detail a description of all standard procedures, methods and practices associated with the BMP. The description should include:

- 1) A general description of the BMP
 - a) Explain the type of issues addressed by the BMP and the approach(es) taken to address each of them.
- 2) A sequential description and duration of each step required to complete the work or project
 - a) Describe each component, step or process in detail in the BMP with clear, concise language and with diagrams as necessary. Be sure to note suppliers of specialized equipment. If specific training for persons implementing the BMP is required, this should be explained

fully or attached as an appendix (for example, specific instructions for staff operating on the ground).

- b) Provide sufficient detail so that a person who is unfamiliar with the industry or project and associated BMP would clearly understand the nature of the project or work, the various activities, and the steps associated with it.
- c) Document all actions, even those typically taken for granted and any constraints that dictate why any exceptions might be required for any part of the BMP.
- d) Describe the BMP in precise language, avoiding jargon that others outside your industry would have difficulty understanding. Avoid terms such as ‘where practical’, ‘where appropriate’, and ‘where possible’. Instead, describe conditions where certain actions are deemed impractical, inappropriate or not possible.
- e) Variations or adjustments that must be made depending on practical, site-specific conditions. Include a description of such conditions when variance is necessary or desirable.

Conservation linkage

- This section should describe the specific threats, issues, geographic area(s), and conservation objectives being addressed for each species or group of species.
- If the BMP addresses species covered in BCR strategies, species at risk recovery strategies or management plans, it should also identify which of those documents are relevant.
- Clearly articulate any uncertainty in both this section and in the BMP description itself (see point b., below).

Key points this section should contain:

- 1) References back to specific threats, objectives and recommended actions in the relevant BCR strategies or species at risk recovery/management plans where the BMP applies.
- 2) Clear descriptions of how the BMP relates to or addresses the recommended action. Articulate clearly the expected short-term and long-term outcomes of the BMP for migratory birds.

Note: BCR strategies and species at risk recovery and management plans are not as specific as an implementation plan or action plan. Environment Canada therefore expects anyone drafting a BMP to seek clarification when necessary. When certainty cannot be reached on a desired topic, the resulting uncertainty should be clearly articulated in both this section and in the BMP description itself.

- 3) The name of each species being addressed by each beneficial practice described in the BMP document, where relevant, or the list of habitats or situations addressed by each practice intended to benefit all birds.
- 4) A description of the BMP, organized into the following sub-sections: (1) the nature of the BMP; (2) its scale of applicability; (3) its temporal applicability (time frame); and (4) its focus. See below for examples in each of these sub-sections. A comprehensive BMP would incorporate the following cases within each sub-section.
 - a) Nature of BMP. Does your BMP encompass:
 - i) Avoidance (avoiding the killing of adults, eggs, or young and the destruction of nests)
 - ii) Mitigation (minimizing effects of the activity directly on birds, nests, eggs or young or their ecological requirements such as habitat or food)
 - iii) Other actions to address residual impacts (i.e. not managed by the avoidance and mitigation activities above), such as conservation allowances ([Operational Framework for Use of Conservation Allowances](#)), or
 - iv) A combination of the above categories (specify)

- b) Scale of applicability. Does your BMP apply at a:
 - i) Species-specific level (individual species of migratory birds, including their nests and/or eggs)
 - ii) Site-specific level (such as breeding or wintering sites, foraging areas and migratory stopover sites)
 - iii) Broad scale of the landscape or ecosystem, such as coniferous forest, BCR, marine biogeographic unit, agricultural habitat, or
 - iv) A combination of the above categories (specify)
- c) Temporal applicability. Does your BMP apply during:
 - i) Breeding season
 - ii) Fall migration
 - iii) Non-breeding season (wintering)
 - iv) Spring migration, or
 - v) A combination of the above categories (specify)
- d) Focus. Does your BMP:
 - i) Deal directly with protection of one or more specific migratory bird species (or guilds) and/or management of habitat of these species in particular
 - ii) Deal directly with protection and/or management of habitat of migratory birds in general but with no species in particular (for example, timing of operation with respect to breeding periods, site-related BMP that could include more than one habitat), or
 - iii) Does not target migratory birds or their habitats but deals with actions that benefit them

Science support and third-party review

In this section, describe how the BMP was developed, the scientific research (if any) or traditional and/or local ecological knowledge the BMP was based on, the track record of the BMP (new, never tried, or well-established practice), and the process used to write the BMP and have it reviewed.

Key points this section should contain:

- 1) A thorough description of the information base used to establish the BMP, including complete references for any scientific or other literature.
- 2) A description of how and when the BMP has been used before (or if it is new and untried) and its past success, broken down into the following categories:
 - a) Ease of implementation: is the description of the proposed practice clear enough and applicable to your situation? Is it implementable in the field? Are there technical aspects limiting its implementation?
 - b) Efficiency of the practice: did it provide the intended immediate protection or management results, i.e. avoiding or minimizing the negative impact envisioned? How could the positive impacts of the practice be improved?
 - c) Past implementation success: did the practice resolve the initial issue with satisfying environmental and business outcomes? Was it sufficient to avoid or minimize all negative impacts of operations on migratory birds? Did the practice contribute to a net benefit for migratory birds? Were there residual impacts on birds, their nests or eggs?
- 3) A list or description of all individuals and organizations involved in the development of the BMP and their respective roles. A timeline may be included.
- 4) A description of the review process for the BMP. For example, indicate whether the BMP was reviewed by a third party such as a certification organization, other government department (federal, provincial or territorial), Aboriginal organization, or environmental non-governmental organization.

Note: Review of its social acceptability alongside scientific, technical and economic factors will help to contribute to the success of a BMP and its durability.

Monitoring, evaluation and reporting plan

Describe the plan for determining the success of all aspects of the BMP, including all tools and approaches for monitoring and reporting on the effectiveness of the BMP. Effectiveness monitoring covers everything from whether the BMP was used and whether it worked as designed, to whether it had the desired ecological outcome and meets business and legal requirements.

Key points this section should contain:

- 1) A description of how the specific success of the **application** of the BMP will be tracked and who will be responsible for tracking it. Did the person implementing the BMP follow the instructions correctly? This is usually assessed by those implementing the BMP and might be part of reporting requirements if the BMP is part of a third-party approval or license process. For example, the correct size of holes was used in bird boxes erected as supplemental nest sites and the boxes were put at the right height above the ground.
- 2) A description of how the site-specific **outcome** of the BMP will be tracked and who is responsible for tracking it. Did the BMP achieve what it was supposed to? This aspect is often assessed by those implementing the BMP, but may be done under the auspices of research with partners where appropriate. For example, birds used x% of the nest boxes annually.
 - a) Consider setting quantitative indicators to clarify expected results.
 - b) Review and periodically update targets as knowledge and environmental conditions change.
 - c) Set interim objectives to report progress if BMP outcomes are long term.
- 3) A description of proposed timelines for each of the two effectiveness monitoring levels (application and outcome).
 - a) A BMP must be monitored if it is to be sustainable over time. Monitoring should ensure (at a minimum) the BMP's appropriate application and implementation (point 1, above) and also that it is having the intended positive outcomes (point 2, above).
 - b) Companies using BMPs should monitor their own implementation of the BMP to ensure their investment is resulting in the desired outcome, and should require that their subcontractors also implement and monitor them.
 - c) BMPs should be implemented within a context of adaptive management. In an adaptive management approach, the results of effectiveness monitoring would be used to refine and guide the application of future versions of BMPs.

For more information:

If you have any comments or questions related to the development of Beneficial Management Practices, please contact the [Environment Canada's Canadian Wildlife Service office in your region](#).

4 Environment Canada's Canadian Wildlife Service National and Regional Offices

For more information on incidental take of migratory birds, their nests and eggs, please contact Environment Canada's Canadian Wildlife Service in writing or by e-mail incidentaltake.priseaccessoire@ec.gc.ca

For information on any other subject, please send your e-mail to enviroinfo@ec.gc.ca or to speak to someone please call toll free 1-800-668-6767.

Environment Canada's Canadian Wildlife Service Regional Offices

Atlantic Region

Canadian Wildlife Service
Environment Canada
17 Waterfowl Lane, P.O. Box 6227
Sackville NB
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Quebec Region

Canadian Wildlife Service
Environment Canada
801-1550 d'Estimauville Avenue
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Ontario Region

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Prairie and Northern Region

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Environment Canada
Twin Atria Building, Room 200, 4999-98 Avenue
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Pacific and Yukon Region

Canadian Wildlife Service
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