Species at Risk Act
Management Plan Series
Adopted under Section 69 of SARA

Management Plan for the Peregrine Falcon *pealei* subspecies (*Falco peregrinus pealei*) in Canada

Peregrine Falcon *pealei* subspecies

2017

Government of Canada Gouvernement du Canada

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For copies of the management plan, or for additional information on species at risk, including the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status Reports, residence descriptions, action plans, and other related recovery documents, please visit the Species at Risk (SAR) Public Registry[1].

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[1] http://sararegistry.gc.ca/default.asp?lang=En&n=24F7211B-1

MANAGEMENT PLAN FOR THE PEREGRINE FALCON *PEALEI* SUBSPECIES (*FALCO PEREGRINUS PEALEI*) IN CANADA

2017

Under the Accord for the Protection of Species at Risk (1996), the federal, provincial, and territorial governments agreed to work together on legislation, programs, and policies to protect wildlife species at risk throughout Canada.

In the spirit of cooperation of the Accord, the Government of British Columbia has given permission to the Government of Canada to adopt the *Management Plan for the Peregrine Falcon,* pealei *subspecies (*Falco peregrinus pealei*) in British Columbia* (Part 2) under section 69 of the *Species at Risk Act* (SARA). Environment and Climate Change Canada has included a federal addition (Part 1) which completes the SARA requirements for this management plan.

The federal management plan for the Peregrine Falcon *pealei* subspecies in Canada consists of two parts:

Part 1 – Federal Addition to the *Management Plan for the Peregrine Falcon,* pealei *subspecies (*Falco peregrinus pealei*) in British Columbia*, prepared by Environment and Climate Change Canada.

Part 2 – *Management Plan for the Peregrine Falcon,* pealei *subspecies (*Falco peregrinus pealei*) in British Columbia*, prepared by British Columbia Ministry of Environment.

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Part 1 – Federal Addition to the *Management Plan for the Peregrine Falcon,* pealei *subspecies (*Falco peregrinus pealei*) in British Columbia*, prepared by Environment and Climate Change Canada

Preface

The federal, provincial, and territorial government signatories under the Accord for the Protection of Species at Risk (1996)[2] agreed to establish complementary legislation and programs that provide for effective protection of species at risk throughout Canada. Under the *Species at Risk Act* (S.C. 2002, c. 29) (SARA), the federal competent ministers are responsible for the preparation of management plans for listed species of special concern and are required to report on progress within five years after the publication of the final document on the SAR Public Registry.

The Minister of Environment and Climate Change and Minister responsible for the Parks Canada Agency is the competent minister under SARA for the Peregrine Falcon *pealei* subspecies and has prepared the federal component of this management plan (Part 1), as per section 65 of SARA. To the extent possible, it has been prepared in cooperation with the Province of British Columbia, as per section 66(1) of SARA. SARA section 69 allows the Minister to adopt all or part of an existing plan for the species if the Minister is of the opinion that an existing plan relating to wildlife species includes adequate measures for the conservation of the species. The Province of British Columbia provided the attached management plan for the Peregrine Falcon *pealei* subspecies (Part 2) as science advice to the jurisdictions responsible for managing the species in British Columbia. It was prepared in cooperation with Environment and Climate Change Canada and the Parks Canada Agency.

Success in the conservation of this species depends on the commitment and cooperation of many different constituencies that will be involved in implementing the directions set out in this plan and will not be achieved by Environment and Climate Change Canada and the Parks Canada Agency, or any other jurisdiction alone. All Canadians are invited to join in supporting and implementing this plan for the benefit of the Peregrine Falcon *pealei* subspecies and Canadian society as a whole.

Implementation of this management plan is subject to appropriations, priorities, and budgetary constraints of the participating jurisdictions and organizations.

[2] http://registrelep-sararegistry.gc.ca/default.asp?lang=en&n=6B319869-1#2

Additions and Modifications to the Adopted Document

The following sections have been included to address specific requirements of the federal *Species at Risk Act* (SARA) that are not addressed in the *Management Plan for the Peregrine Falcon,* pealei *subspecies (*Falco peregrinus pealei*) in British Columbia* (Part 2 of this document, referred to henceforth as "the provincial management plan") and/or to provide updated or additional information.

Under SARA, prohibitions regarding the protection of species and their habitat do not apply to species of special concern. Conservation measures in the provincial management plan dealing with the protection of individuals and their habitat are still adopted to guide conservation efforts but would not result in federal legal protection.

1. Effects on the Environment and Other Species

A strategic environmental assessment (SEA) is conducted on all SARA recovery planning documents, in accordance with the *Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals*[3]. The purpose of a SEA is to incorporate environmental considerations into the development of public policies, plans, and program proposals to support environmentally sound decision-making and to evaluate whether the outcomes of a recovery planning document could affect any component of the environment or achievement of any of the Federal Sustainable Development Strategy's[4] (FSDS) goals and targets.

Conservation planning is intended to benefit species at risk and biodiversity in general. However, it is recognized that implementation of management plans may also inadvertently lead to environmental effects beyond the intended benefits. The planning process based on national guidelines directly incorporates consideration of all environmental effects, with a particular focus on possible impacts upon non-target species or habitats. The results of the SEA are incorporated directly into the management plan itself, but are also summarized below in this statement.

The provincial management plan for the Peregrine Falcon *pealei* subspecies contains a short section describing the effects of management activities on other species (i.e., section 9). Environment and Climate Change Canada adopts this section of the provincial management plan as the statement on effects of management activities on the environment and other species. The distribution of Peregrine Falcon *pealei* subspecies may overlap with that of other federally-listed species at risk occurring in coastal areas (e.g., Ancient Murrelet (*Synthliboramphus antiquus*), Band-tailed Pigeon (*Patagioenas fasciata*), Cassin's Auklet (*Ptychoramphus aleuticus*), Great Blue Heron *fannini* subspecies (*Ardea herodias fannini*), Marbled Murrelet (*Brachyramphus marmoratus*), Northern Goshawk *laingi* subspecies (*Accipiter gentilis laingi*), Northern Saw-whet Owl *brooksi* subspecies (*Aegolius acadicus brooksi*), Peregrine

[3] www.ceaa.gc.ca/default.asp?lang=En&n=B3186435-1
[4] www.ec.gc.ca/dd-sd/default.asp?lang=En&n=F93CD795-1

Falcon *anatum/tundrius* subspecies (*Falco peregrinus anatum/tundrius*), and Red Knot (*Calidris canutus*)) that could be affected by management actions. Conservation planning activities for Peregrine Falcon *pealei* subspecies will be implemented with consideration for all co-occurring species, with focus on species at risk, to avoid or minimize negative impacts to these species or their habitats. Some management actions for Peregrine Falcon *pealei* subspecies (e.g., research and monitoring, habitat conservation, public education, and mitigation about general threats to the species) may promote the conservation of other species at risk that overlap in distribution and rely on similar habitat attributes.

Part 2 – *Management Plan for the Peregrine Falcon,* pealei *subspecies (*Falco peregrinus pealei*) in British Columbia*, prepared by British Columbia Ministry of Environment

Management Plan for the Peregrine Falcon, *pealei* subspecies (*Falco peregrinus pealei*) in British Columbia

Prepared by B.C. Ministry of Environment

December 2016

About the British Columbia Management Plan Series

This series presents the management plans that are prepared as advice to the Province of British Columbia. The Province prepares management plans for species that may be at risk of becoming endangered or threatened due to sensitivity to human activities or natural events.

What is a management plan?

A management plan identifies a set of coordinated conservation activities and land use measures needed to ensure, at a minimum, that the target species does not become threatened or endangered. A management plan summarizes the best available science-based information on biology and threats to inform the development of a management framework. Management plans set goals and objectives, and recommend approaches appropriate for species or ecosystem conservation.

What's next?

Direction set in the management plan provides valuable information on threats and direction on conservation measures that may be used by individuals, communities, land users, conservationists, academics, and governments interested in species and ecosystem conservation.

For more information

To learn more about species at risk recovery planning in British Columbia, please visit the B.C. Recovery Planning webpage at:
<http://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/species-ecosystems-at-risk/recovery-planning>

Management Plan for the Peregrine Falcon, *pealei* subspecies (*Falco peregrinus pealei*) in British Columbia

Prepared by the B.C. Ministry of Environment

December 2016

Recommended citation

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Cover illustration/photograph

Don Doyle

Additional copies

Additional copies can be downloaded from the B.C. Recovery Planning webpage at:

<http://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/species-ecosystems-at-risk/recovery-planning>

Disclaimer

The B.C. Ministry of Environment has prepared this management plan, as advice to the responsible jurisdictions and organizations that may be involved in managing the species.

This document identifies the management actions that are deemed necessary, based on the best available scientific and traditional information, to prevent Peregrine Falcon, *pealei* subspecies populations in British Columbia from becoming endangered or threatened. Management actions to achieve the goals and objectives identified herein are subject to the priorities and budgetary constraints of participatory agencies and organizations. These goals, objectives, and management approaches may be modified in the future to accommodate new objectives and findings.

The responsible jurisdictions have had an opportunity to review this document. However, this document does not necessarily represent the official positions of the agencies or the personal views of all individuals.

Success in the conservation of this species depends on the commitment and cooperation of many different constituencies that may be involved in implementing the directions set out in this management plan. The B.C. Ministry of Environment encourages all British Columbians to participate in the conservation of the Peregrine Falcon, *pealei* subspecies.

ACKNOWLEDGEMENTS

This document, which is an update to the management plan for Peregrine Falcon, *pealei* subspecies in British Columbia (Cooper 2007), has been prepared by the B.C. Ministry of Environment. Much of the material is taken directly from the original document. Leah Westereng (B.C. Ministry of Environment) moved information into the current template and Louise Blight completed the update. A new threats assessment was done by Don Doyle (retired) and Myke Chutter (B.C. Ministry of Forests, Lands and Natural Resource Operations); and Dave Fraser and Louise Blight (B.C. Ministry of Environment). Funding for this plan was provided by Environment and Climate Change Canada–Canadian Wildlife Service, Pacific Region. Myke Chutter, John Cooper, and Gerald Hayes provided review comments, and John Elliott and Sandi Lee provided references and text on environmental contaminants in Peregrine Falcons and their environment.

EXECUTIVE SUMMARY

The Peregrine Falcon, *pealei* subspecies (*Falco peregrinus pealei*), was designated as of Special Concern by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in 1978, 1999, 2001, and most recently in 2007. It is listed as of Special Concern in Canada on Schedule 1 of the *Species at Risk Act*. In British Columbia, the Peregrine Falcon, *pealei* subspecies, is ranked S3 (Special Concern, vulnerable to extirpation or extinction) by the B.C. Conservation Data Centre and is on the provincial Blue List. The B.C. Conservation Framework ranks Peregrine Falcon, *pealei* subspecies, as a Priority 1 under Goal 2 (2 = prevent species and ecosystems from becoming at risk). It is also protected under the British Columbia *Wildlife Act*.

Threats to populations include natural system modifications (i.e., declining seabird populations) and the direct effects of pollution (primarily environmental contaminants, and the threat of a catastrophic oil spill) on breeding populations. Direct threats to habitat are not significant because the birds nest on remote and rugged cliffs, although nests have occasionally been found in trees.

Over the short term, the management goal is to maintain the population of the *pealei* subspecies within ±5% of recent estimates, and retain its current distribution. The long-term goal is to gradually increase the population of the *pealei* subspecies to numbers that are closer to those estimated for the early 20th century.

The following are the management objectives:

1. To monitor the population in British Columbia with enough coverage and frequency to detect changes.
2. To maintain at current or higher population levels the colonially nesting seabirds that are the primary prey of Peregrine Falcon, *pealei* subspecies.
3. To address knowledge gaps regarding organochlorine contaminants and other bioaccumulating toxins and their impacts on populations of Peregrine Falcon, *pealei* subspecies.
4. To develop and update oil spill response plans for the areas around provincial seabird colonies.
5. To ensure falconry harvest is sustainable.
6. To conduct genetic research to refine knowledge of subspecies boundaries.

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1 COSEWIC* SPECIES ASSESSMENT INFORMATION[1]

Assessment Summary: April 2007
Common Name: Peregrine Falcon *pealei* subspecies
Scientific Name: *Falco peregrinus pealei*
Status: Special Concern
Occurrence: BC
Status Criteria: Met criteria for Endangered, D1, but designated Special Concern because of increasing population size, potential for rescue, and because a significant portion of the population breeds in protected areas.
Reason for Designation: This subspecies occurs in small numbers along most of the coastal area of British Columbia, where it breeds mostly in protected areas. Its population has shown ongoing increases in size over the last 35 years. Immigration from the United States, where numbers are stable, is likely.
Status History: The Peregrine Falcon in Canada was originally evaluated by COSEWIC as three separate subspecies: *anatum* subspecies (Endangered in April 1978, Threatened in April 1999 and in May 2000), *tundrius* subspecies (Threatened in April 1978 and Special Concern in April 1992) and *pealei* subspecies (Special Concern in April 1978, April 1999 and November 2001). In April 2007, the Peregrine Falcon in Canada was assessed as two separate units: *pealei* subspecies and *anatum/tundrius*. The Peregrine Falcon *pealei* subspecies was designated Special Concern in April 2007.

* Committee on the Status of Endangered Wildlife in Canada.

2 SPECIES STATUS INFORMATION

Peregrine Falcon, *pealei* subspecies[a]	
Legal Designation:	
FRPA:[b] No OGAA:[b] No	B.C. *Wildlife Act*:[c] Schedule A SARA:[d] Schedule 1 – Special Concern
Conservation Status[e]	
B.C. List: Blue B.C. Rank: S3B (2010) National Rank: N3 (2012) Global Rank: G4T3 (1997)	
Other Subnational Ranks:[f] Alaska: S2S3; Oregon: S3?; Washington: S2B,S3N	
B.C. Conservation Framework (CF)[g]	
Goal 1: Contribute to global efforts for species and ecosystem conservation.	Priority:[h] 2 (2009)
Goal 2: Prevent species and ecosystems from becoming at risk.	Priority: 1 (2009)
Goal 3: Maintain the diversity of native species and ecosystems.	Priority: 2 (2009)
CF Action Groups:[f]	Compile Status Report; Monitor Trends; Planning; Send to COSEWIC; Species and Population Management; Review Resource Use

[a] Data source: B.C. Conservation Data Centre (2016) unless otherwise noted.
[b] No = not listed in one of the categories of wildlife that requires special management attention to address the impacts of forestry and range activities on Crown land under the *Forest and Range Practices Act* (FRPA; Province of British Columbia 2002) and/or the impacts of oil and gas activities on Crown land under the *Oil and Gas Activities Act* (OGAA; Province of British Columbia 2008).
[c] Schedule A = designated as wildlife under the British Columbia *Wildlife Act*, which offers it protection from direct persecution and mortality (Province of British Columbia 1982).
[d] Schedule 1 = found on the List of Wildlife Species at Risk under the *Species at Risk Act* (SARA; Government of Canada 2002).
[e] S = subnational; N = national; G = global; T = refers to the subspecies level; B = breeding; 1 = critically imperiled; 2 = imperiled; 3 = special concern, vulnerable to extirpation or extinction; 4 = apparently secure; 5 = demonstrably widespread, abundant, and secure.
[f] Data source: NatureServe (2016).
[g] Data source: B.C. Ministry of Environment (2009).
[h] Six-level scale: Priority 1 (highest priority) through to Priority 6 (lowest priority).

[1] Although COSEWIC information states that the "population has shown ongoing increases in size over the last 35 years," the understanding in British Columbia is that it was downlisted to "Special Concern" owing to the long-term stability of the population, as shown by surveys over the past 50 years. Survey data do show gradual increases, but it is not known if these are real or an artifact of better surveys; at worst, according to expert opinion, the population has been stable, or at best, slightly increasing (Chutter, pers. comm., 2016)

3 SPECIES INFORMATION

3.1 Species Description

The Peregrine Falcon, *pealei* subspecies (also known as Peale's Peregrine Falcon), is the largest and darkest of North America's peregrine subspecies. Adults have slate-grey upper parts, pale underparts with dark greyish horizontal barring, and a dark cap and "moustache" (malar stripe); immature birds are more heavily marked, with vertical chocolate-brown ventral streaks on buff-coloured underparts and more brownish colouration overall. As with other raptors, females are larger than males, weighing an average 1400 g and 900 g, respectively.

3.2 Populations and Distribution

3.2.1 Distribution

Globally, the Peregrine Falcon occurs on every continent except Antarctica, with three long-recognized subspecies of Peregrine Falcon occurring in Canada (Godfrey 1986). The *anatum* subspecies breeds throughout most of North America south of tundra areas and occurs over much of southern Canada. The *tundrius* subspecies breeds in Arctic Canada, Alaska, and Greenland and occurs elsewhere in Canada only as a migrant; however, recent studies have shown no significant genetic differentiation between ostensible *anatum* and *tundrius* birds (Brown *et al.* 2007; Johnson *et al.* 2010) and, therefore, these two subspecies are now treated as a single designatable unit by COSEWIC (COSEWIC 2007).[2] These same studies have also confirmed the distinctiveness of Peregrine Falcon, *pealei* subspecies, which breeds in coastal southern Alaska, the west coast of British Columbia (Campbell *et al.* 1990) and Washington, Russia's Commander Islands, and (possibly) the Kamchatka Peninsula (Brooks 1926; White *et al.* 2002).

In Canada, this subspecies only breeds in coastal British Columbia, on Haida Gwaii (formerly the Queen Charlotte Islands), Triangle Island off northern Vancouver Island, the north-central coast of the mainland, north and west Vancouver Island, and likely on southeastern Vancouver Island and the Gulf Islands (American Ornithologists' Union 1957; Campbell *et al.* 1990; Kirk and Nelson 1999; Figure 1). Genetic analyses confirm that Peregrine Falcons from Langara Island and the north and west coast Vancouver Island are *pealei* subspecies. To date, the southernmost boundary of *pealei*'s breeding distribution on the west coast of Vancouver Island is near Port Renfrew, but breeding Peregrine Falcons found anywhere along the Island's west coast would likely be *pealei* (Chutter, pers. comm., 2016). For southeastern Vancouver Island and the Gulf Islands, genetic analysis of 10 peregrines found that seven exhibited markers of *pealei*, and three those of *anatum*, with adult birds of both subspecies residing on one Gulf Island near Nanaimo (Brown 2005; Brown, pers. comm., 2005). These findings suggest a zone of subspecific intergradation. Origins of these birds may confound the issue as an unconfirmed rumour exists of falconers releasing low numbers of *pealei* falcons to repopulate the Gulf Islands during the 1970s, whereas any *anatum* birds would likely have originated from wild Interior

[2] The B.C. Conservation Data Centre still considers *tundrius* to be a valid taxon, albeit one unrankable in British Columbia because of an absence of confirmed sightings for the province.

peregrines that came to the Coast via the Fraser River, or expansion of populations from Washington (Chutter, pers. comm., 2016). Nevertheless, *pealei* influence could also be from

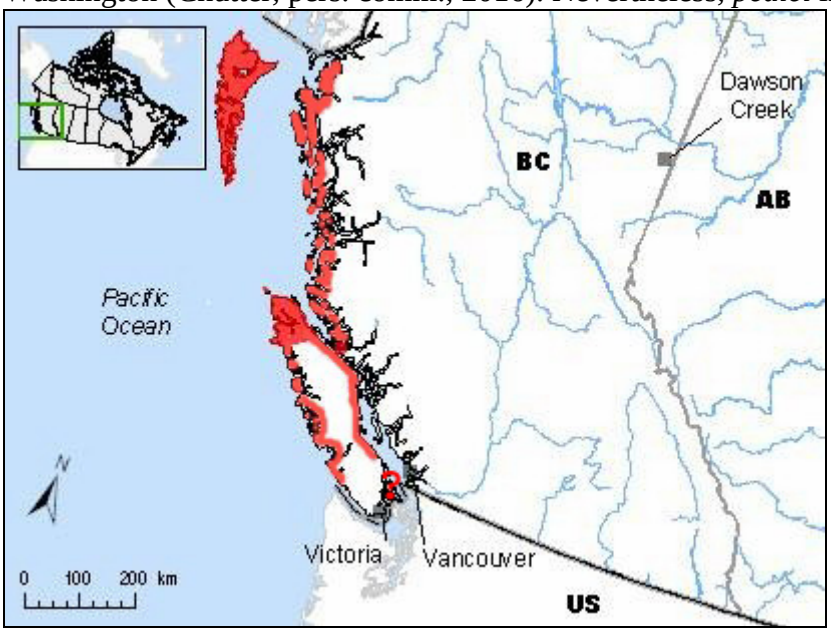

Figure 1. Breeding distribution of the Peregrine Falcon, *pealei* subspecies in Canada. Base map modified from Canadian Wildlife Service website.

natural range expansion of wild stocks, with *pealei*-like birds reported from the Fraser Valley in the early part of the 1900s (Brooks 1917). See Brown (2005), Brown *et al.* (2007), and Johnson *et al.* (2010) for more information on genetic differences in Peregrine Falcons in Canada.

For the purposes of this management plan, all Peregrine Falcons from the west and north coast of Vancouver Island and northward are considered to be *pealei* subspecies. As recent evidence suggests that the Peregrine Falcon population around southeastern Vancouver Island and the Gulf Islands consists of both *pealei* and *anatum* subspecies, birds in these regions are also covered by this management plan (Figure 1).

3.2.2 Populations

British Columbia is home to approximately 12% of the global population of Peale's Peregrine Falcon, which was estimated in the late 1990s to be 850–1000 breeding pairs (White *et al.* 2002).

In British Columbia in 2015, 119 occupied territories of *pealei* subspecies were found on Haida Gwaii, northern Vancouver Island, other offshore islands, and the adjacent mainland. This is an apparent increase from the 109 territories found occupied in 2010 (Table 1; Chutter 2016), with "occupied" defined (as per the National Peregrine Falcon Recovery team protocol) to include territorial single birds, pairs, and/or nests with eggs or young; observations of single, non-territorial birds are not included. For southeastern Vancouver Island and the Gulf Islands in 2015, surveys found 12 occupied nests (down from 19 in 2010); an unknown proportion of these birds are genotypically and phenotypically *pealei* subspecies (see Section 3.2.1). Although the provincial 5-year surveys are relatively intensive, not all potential areas are surveyed, and

surveys of occupied territories are known to miss some nesting pairs; therefore, uncounted pairs presumably exist (Chutter, pers. comm., 2016).

Table 1. Survey results for Peregrine Falcon, *pealei* subspecies, in British Columbia, 1965–2015 (source: Chutter 2016).

	Survey year										
Subspecies/area	**1965/66**	**1970**	**1975**	**1980**	**1985/86**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**
Zone of *pealei*, *anatum*, and hybrids											
Southeast Vancouver Island, including Gulf Islands	N	N	N	5(4)[a]	4(2)	6(3)[b]	9(7)	11(9)	12(9)	19(14)	12(11)
Subtotals				**5(4)**	**4(2)**	**6(3)**	**9(7)**	**11(9)**	**12(9)**	**19(14)**	**12(11)**
Falco peregrinus pealei											
Langara Island (part of Haida Gwaii)	9(6)[c]	6(5)[c]	6(6)[c]	6(6)[c]	6(5)[c]	7(7)[c]	7(5)[c]	9(7)[c]	10(8)[c]	8(7)[c]	7(5)
Haida Gwaii, excluding Langara Island	76(55)	56(46)	60(51)	73(58)	50(ND)[d]	64(53)	62(45)	60(44)	74(46)	75(37)[e]	78(43)[e]
Triangle Island	N	N	N	N	N	N	8(8)	7(6)	7(ND)	7(4)	10(3)
North Vancouver Island	N	N	N	N	6(5)	10(5)	10(6)	20(12)	17(13)	19(12)	24(8)
West Vancouver Island	N	N	N	N	N	N	N	N	0(0)	N	N
Subtotals	**85(61)**	**62(51)**	**66(57)**	**79(64)**	**62(10)**	**81(65)**	**87(64)**	**96(69)**	**108(67)**	**109(60)**	**119(59)**
Totals	**85(61)**	**62(51)**	**66(57)**	**84(68)**	**66(12)**	**87(68)**	**96(71)**	**107(78)**	**120(76)**	**128(74)**	**131(70)**

Totals are: occupied territories (number of territorial pairs present [singles with young or eggs present recorded as pairs]); N = not surveyed, ND = no data. "Occupied" defined in text.

[a] Gulf Island sites only.

[b] Data collected in 1991.

[c] Data source = R.W. Nelson, or combination of Nelson and provincial surveys if covered by both in the same year.

[d] Poor counts as surveys incomplete because of bad weather on Haida Gwaii.

[e] Incomplete count related to weather; extrapolation for missed area would add nine more occupied territories.

Provincial Peregrine Falcon surveys began on Haida Gwaii in the 1960s and have been conducted approximately every 5 years since 1970, in coordination with national surveys. The area covered increased over time, with northern Vancouver Island added in 1980, and southern Vancouver Island and the Gulf Islands added in 1986 (with *anatum* surveys in the Lower Mainland and Interior added in 1994 and 2005, respectively). Numbers of *pealei* subspecies are presently thought as stable or slightly increasing in British Columbia (Chutter, pers. comm., 2016). Nevertheless, apparent trends in survey numbers should be treated with caution as methods may differ somewhat from year to year; for example: the proportion of sites surveyed from boats with cracker shells, from helicopters, or through fieldwork is based on changing factors such as funding and weather; total area surveyed is not consistent (count data not standardized for effort); and new sites are usually added to each subsequent survey year. Statistical analyses of survey data have not been conducted.

Haida Gwaii (including Langara Island) represents the densest area of occupancy for the Canadian population of the *pealei* subspecies. In 2015, 85 occupied territories (71% of the Canadian population, excluding birds from the hybrid zone of southeast Vancouver Island and the Gulf Islands, where number of *pealei* birds is unknown) were found, and 83 occupied territories (76%) were counted in 2010 (Chutter 2016). Because of historically low nesting densities and high survey costs, the southwest coast of Vancouver Island and the province's north coast area have seldom been surveyed. For example, in 2005 only one occupied aerie (i.e., nest site, of four previously known to be occupied) was found in 500 km of northern mainland coastline (Schulze 2005) and only one aerie has been found on the southwest coast of Vancouver Island (Chutter, pers. comm., 2016). Extensive volunteer effort around the provincial Breeding Bird Atlas project reported two "possible"[3] breeding sites on the north mainland coast, and Peregrine Falcons are reported somewhat regularly around Tofino in summer (Davidson *et al*. 2015; eBird 2015).

3.3 Habitat and Biological Needs of the Peregrine Falcon, *pealei* subspecies

The habitat and other biological needs of the *pealei* subspecies are summarized in Table 2 and described in detail below.

3.3.1 Nesting

Nesting Peregrine Falcons generally require a suitable cliff face or human-made substitute (e.g., a ledge on a building or bridge) near to an adequate supply of food. The *pealei* subspecies typically nests on ledges of rocky island cliffs, usually near the seabird colonies, which are their primary sources of prey, with nest cliffs reaching up to 366 m above water/ground. Cliff nests are sometimes located under the overhanging roots of Sitka Spruce (*Picea sitchensis*). All *pealei* aeries are near marine shorelines, with none known from inland locations. Occasionally, nests occur on mainland headland cliffs and on grassy ledges on rock bluffs. More rarely, old nests of Pelagic Cormorant (*Phalacrocorax pelagicus*), Bald Eagle (*Haliaeetus leucocephalus*), and Common Raven (*Corvus corax*) have been used, as have natural tree cavities (Campbell *et al*.

[3] Defined as a sighting during the breeding season.

1977, 1990; COSEWIC 2007). All known aeries along the north mainland coast were in snags and trees; suitable cliff nesting sites are very limited along this 500-km stretch of coastline (Schultze 2000, 2005; Schultze, pers. comm., 2006).

3.3.2 Breeding and Foraging

During the breeding season, the Peregrine Falcon requires ample, accessible avian prey near the nest site. Because prey items are usually taken in flight, access to a supply of flying birds is important to their foraging success. Peregrines search for prey mainly from perches but also while flying. Perches are usually located on a high vantage point near aeries, which allows for a rapid swoop down to low-flying prey (White *et al*. 2002).

Table 2. Summary of essential functions, features, and attributes of Peregrine Falcon, *pealei* subspecies.

Life stage	Function[a]	Feature(s)[b]	Attributes[c]
Adult	Nesting (nest-building, egg-laying)	Suitable ledges on coastal or island cliffs; occasionally, river/creek banks, abandoned stick nests of large birds (e.g., Bald Eagle), or natural tree cavity	Rocky coastal cliffs with sheltered ledges, crevices, or holes able to house a nest 17–22 cm in diameter and 3–5 cm deep (COSEWIC 2007). Cliffs or nearby sites provide adequate supply of vantage points for prey searching. Cliffs may be as high as 366 m. Nests in trees as low as 12 m, with specific nest-site attributes as per above (Campbell *et al*. 1977).
Adult	Breeding (mating, raising, and fledging chicks)	An undisturbed nest site near an adequate supply of avian prey for feeding chicks and teaching fledglings to hunt	Nest sites are close to an adequate supply of food, generally colonial seabird colonies. Minimal human disturbance.
Adult	Foraging (in and around breeding season)	Access to an adequate supply of avian prey	Nest sites are close to an adequate supply of food, generally colonial seabird colonies. Cliffs or nearby sites provide adequate supply of vantage points for prey searching.
Adult	Wintering	Access to an adequate supply of avian prey	Presence of dense flocks of prey species (e.g., shorebirds, waterfowl). Adequate supply of vantage points for prey searching.

[a] Function: a life-cycle process of the species (e.g., breeding, rearing, feeding/foraging, migrating).
[b] Feature: the essential structural components of the habitat required by the species.
[c] Attribute: the building blocks or *measurable* characteristics of a feature.

3.3.3 Wintering

Resident coastal populations of the *pealei* subspecies tend to remain on or near breeding grounds throughout the year (White *et al*. 2002), although researchers have recently documented movement of birds between the coastal areas of Washington and British Columbia. This included movement of two birds over 1000 km between Langara Island and coastal Washington beaches. One female, banded in Washington at 1 year of age or less, later nested at Langara Island (Varland *et al*. 2012). Migrant *pealei* subspecies tend to concentrate near their prey base, including areas where seabirds concentrate for the winter, and wetlands and estuaries where

wintering shorebirds and waterfowl congregate. These areas tend to support both wintering *pealei* Peregrine Falcons and *anatum* birds that migrate to the coast.

3.4 Limiting Factors

Limiting factors are generally not human-induced and include characteristics that make the species less likely to respond to management/conservation efforts (e.g., small population size).

Peregrine Falcon populations are strongly limited by the distribution of suitable nest locations and by territorial spacing of pairs (Hunt 1998); however, cliff habitat for nesting does not seem to be limiting anywhere within the breeding range in British Columbia, except along the north mainland coast (Schultze 2000, 2005; Schultze, pers. comm., 2006). Many historical coastal aeries remain unoccupied, although some historical sites may be too close to territorial pairs for occupancy by new birds. Although not all aeries are occupied in any given year, additional nest sites seem to be available, should numbers of the *pealei* subspecies increase. The *pealei* subspecies is also limited by a naturally small breeding range and small population size, likely linked to their dependence on colonial seabirds as prey.

4 THREATS

Threats are defined as the proximate activities or processes that have caused, are causing, or may cause in the future the destruction, degradation, and/or impairment of the entity being assessed (population, species, community, or ecosystem) in the area of interest (global, national, or subnational; adapted from Salafsky *et al.* 2008). For purposes of threat assessment, only present and future threats are considered.[4] Threats presented here do not include limiting factors,[5] which are presented in Section 3.4.

For the most part, threats are related to human activities, but they can also be natural. The impact of human activity may be direct (e.g., destruction of habitat) or indirect (e.g., introduction of invasive species). Effects of natural phenomena (e.g., fire, flooding) may be especially important when the species is concentrated in one location or has few occurrences, which may be a result of human activity (Master *et al.* 2012). As such, natural phenomena are included in the definition of a threat, though they should be considered cautiously. These stochastic events should only be considered a threat if a species or habitat is damaged from other threats and has lost its ability to recover. In such cases, the effect on the population would be disproportionately large compared to the effect experienced historically (Salafsky *et al.* 2008).

[4] Past threats may be recorded but are not used in the calculation of threat impact. Effects of past threats (if not continuing) are taken into consideration when determining long-term and/or short-term trend factors (Master *et al.* 2012).

[5] It is important to distinguish between limiting factors and threats. Limiting factors are generally not human-induced and include characteristics that make the species or ecosystem less likely to respond to management/conservation efforts (e.g., inbreeding depression, small population size, and genetic isolation).

4.1 Threat Assessment

The threat classification below is based on the IUCN–CMP (World Conservation Union–Conservation Measures Partnership) unified threats classification system and is consistent with methods used by the B.C. Conservation Data Centre. For a detailed description of the threat classification system, see the Open Standards website (Open Standards 2014). Threats may be observed, inferred, or projected to occur in the near term. Threats are characterized here in terms of scope, severity, and timing. Threat "impact" is calculated from scope and severity. For information on how the values are assigned, see Master *et al.* (2012) and table footnotes for details. Threats for the Peregrine Falcon, *pealei* subspecies, were assessed for the entire province (Table 3).

Table 3. Threat classification table for Peregrine Falcon, *pealei* subspecies, in British Columbia (June 2016).
Note: A description of the threats included in this table are found in Section 4.2.

Threat #[a]	Threat description	Impact[b]	Scope[c]	Severity[d]	Timing[e]
1	Residential & commercial development	Negligible	Negligible	Unknown	High
1.1	Housing & urban areas	Negligible	Negligible	Unknown	High
3	Energy production & mining	Negligible	Small	Negligible	Low
3.2	Mining & quarrying	Negligible	Negligible	Negligible	Moderate
3.3	Renewable energy	Negligible	Small	Negligible	Low
4	Transportation & service corridors	Negligible	Negligible	Negligible	High
4.4	Flight paths	Negligible	Negligible	Negligible	High
5	Biological resource use	Negligible	Negligible	Negligible	High
5.1	Hunting & collecting terrestrial animals	Negligible	Negligible	Negligible	High
5.3	Logging & wood harvesting	Negligible	Negligible	Negligible	High
6	Human intrusions & disturbance	Unknown	Pervasive	Unknown	High
6.1	Recreational activities	Negligible	Negligible	Unknown	High
6.3	Work & other activities	Negligible	Pervasive	Negligible	High
7	Natural system modifications	Medium–Low	Large–Small	Moderate–Slight	High

Threat #[a]	Threat description	Impact[b]	Scope[c]	Severity[d]	Timing[e]
7.3	Other ecosystem modifications	Medium–Low	Large-Small	Moderate–Slight	High
8	Invasive & other problematic species & genes	Unknown	Restricted	Unknown	Unknown
8.3	Introduced genetic material	Unknown	Restricted	Unknown	Unknown
9	Pollution	High–Low	Large–Small	Serious–Slight	High
9.2	Industrial & military effluents	High–Low	Large–Small	Serious–Slight	High
9.5	Air-borne pollutants	Unknown	Pervasive	Unknown	High
10	Geological events	Negligible	Restricted–Small	Negligible	Moderate
10.2	Earthquakes/tsunamis	Negligible	Restricted–Small	Negligible	Moderate

[a] Threat numbers are provided for Level 1 threats (i.e., whole numbers) and Level 2 threats (i.e., numbers with decimals).
[b] **Impact** – The degree to which a species is observed, inferred, or suspected to be directly or indirectly threatened in the area of interest. The impact of each threat is based on severity and scope rating and considers only present and future threats. Threat impact reflects a reduction of a species population. The median rate of population reduction for each combination of scope and severity corresponds to the following classes of threat impact: Very High (75%), High (40%), Medium (15%), and Low (3%). Unknown: used when impact cannot be determined (e.g., if values for either scope or severity are unknown); Not Calculated: impact not calculated as threat is outside the assessment time (e.g., timing is insignificant/negligible [past threat] or low [possible threat in long term]); Negligible: when scope or severity is negligible; Not a Threat: when severity is scored as neutral or potential benefit.
[c] **Scope** – Proportion of the species that can reasonably be expected to be affected by the threat within 10 years. Usually measured as a proportion of the species' population in the area of interest. (Pervasive = 71–100%; Large = 31–70%; Restricted = 11–30%; Small = 1–10%; Negligible < 1%).
[d] **Severity** – Within the scope, the level of damage to the species from the threat that can reasonably be expected to be affected by the threat within a 10-year or three-generation time frame. For this species a generation time of 4–6 years was used, resulting in severity being scored over a 12–18-year time frame. Usually measured as the degree of reduction of the species' population. (Extreme = 71–100%; Serious = 31–70%; Moderate = 11–30%; Slight = 1–10%; Negligible < 1%; Neutral or Potential Benefit ≥ 0%).
[e] **Timing** – High = continuing; Moderate = only in the future (could happen in the short term [< 10 years or 3 generations]) or now suspended (could come back in the short term); Low = only in the future (could happen in the long term) or now suspended (could come back in the long term); Insignificant/Negligible = only in the past and unlikely to return, or no direct effect but limiting.

4.2 Description of Threats

The overall province-wide Threat Impact for the Peregrine Falcon, *pealei* subspecies, is calculated as High to Low.[6] This overall threat considers the cumulative impacts of multiple threats. The greatest threats are pollution and natural system modifications (via human impacts on seabird populations; Table 3; see Wolf *et al*. 2010). Details are discussed below under the Threat Level 1 headings. Note that for this species a generation time of 4–6 years was used, resulting in severity being scored over a 12–18-year time frame.

4.2.1 High–Low Threats

Threat 9. Pollution

Catastrophic oil spill events are the most serious threat facing the Peregrine Falcon, *pealei* subspecies. As this subspecies consumes seabirds almost exclusively, oil spills could have direct long- and short-term impacts related to their consumption of, or other contact with, oiled seabird prey. (See Threat 7 for indirect impacts of oiling via declines in seabird prey). For example, a study of Peregrine Falcons following the 20-million-gallon *Prestige* oil spill in the Bay of Biscay found reduced fertility, increased adult mortality, and a sharp increase in the rate of turnover of breeding birds at known territories in the year following the spill, all likely related to exposure to oil-borne contaminants (Zuberogoitia *et al.* 2006). Oil spill modelling shows that under certain scenarios a single oil spill incident could spread to a sizeable portion of the coast of Haida Gwaii (e.g., Triton Consultants 2007; Fine and Masson 2015), where most of British Columbia's *pealei* subspecies occur. Marine shipment of petroleum products and other bulk goods is likely to see a future increase in provincial waters as several marine terminal projects are proposed for the coast, with a concomitant increase predicted in shipping traffic (EnviroEmerg Consulting Services 2008).

The presence of environmental contaminants (e.g., DDT-related chemicals, PCBs, halogenated flame retardants, perfluorinated contaminants, mercury) may pose some degree of ongoing threat to the *pealei* subspecies. No assessment of the degree of threat to *pealei* has been conducted for many years (i.e., since Peakall *et al*. 1990). An assessment conducted of contaminants in prey of Okanagan (*anatum*) peregrines in the early 2000s showed that potential prey species were contaminated at levels that would affect peregrine reproduction (Elliott *et al*. 2005a). Some of the bleached-kraft pulp mills that were significant sources of chlorinated wastes have closed on the coast and all remaining mills changed their bleaching processes in the 1990s to minimize production of chlorinated dioxins and furans. Nevertheless, although primary sources of many of the contaminants of concern have been regulated for some years, large amounts have been released to the environment and continue to be emitted from soils, sediments, landfills, and other reservoirs (Elliott, pers. comm., 2016; Lee, pers. comm., 2016).

Two of the 15 Peregrine Falcons (both subspecies) sampled from southeast Vancouver Island and the Gulf Islands from 2001 to 2004 had very elevated levels of DDE (the breakdown product of DDT) and another had elevated levels of PBDEs (flame retardants). Other individuals sampled

[6] The overall threat impact was calculated following Master *et al.* (2012) using the number of Level 1 Threats assigned to this species where timing = High or Moderate, which included 1 High-Low, 1 Medium-Low threat and 1 Unknown (Table 3). The overall threat impact considers the cumulative impacts of multiple threats.

still showed measureable levels of DDEs (Elliott, pers. comm., 2016; Lee, pers. comm., 2016). Another study that sampled livers of Peregrine Falcons (possibly both subspecies) found dead from north-central Vancouver Island and Vancouver's Lower Mainland, reported continuing elevated concentrations of PBDEs, including at putative reproductive effect levels (Elliott *et al.* 2015).

Although the *pealei* subspecies avoided steep DDE-related population declines in the mid-1900s (presumably because of their remote range, relatively non-migratory habits, and reliance on seabird prey exposed to low DDT levels) (Cade *et al.* 1988, Peakall *et al.* 1990, Ratcliffe 1993, White *et al.* 2002), their seabird prey continues to be exposed to other environmental contaminants (Good *et al*. 2014). For example, levels of the bioaccumulating flame retardant HBCDD and perfluorinated contaminants, particularly Perfluoro-n-undecanoic acid, increased exponentially in seabird eggs collected in British Columbia from 1990 to 2011 (Miller *et al.* 2014, 2015a, 2015b). Other studies have shown the continued persistence of organochlorines in seabird tissue within the range of the *pealei* subspecies (Elliott *et al.* 1989; Becker *et al.* 2003; Vander Pol *et al.* 2004; Elliott *et al*. 2005b). Elevated levels of mercury have also recently been found in shorebirds, a source of winter prey for Peregrine Falcons (Perkins *et al.* 2016).

Long-term monitoring of various contaminants in sentinel species continues on the British Columbia coast and is outlined in Elliott and Elliott 2013, and Miller *et al*. 2014, 2015a, 2015b.

4.2.2 Medium–Low Threats

Threat 7. Natural system modifications

On Haida Gwaii and northern Vancouver Island, the *pealei* subspecies are highly dependent on seabird numbers for food. Declining, and the potential for declining, seabird populations at local or larger scales is the second most serious threat facing Peale's Peregrine Falcon. Colonial seabirds are highly susceptible to predation by introduced mammals, especially rats (*Rattus* spp.) and, in British Columbia, raccoons (*Procyon lotor*). For example, rat predation historically led to severe declines in Ancient Murrelet (*Synthliboramphus antiquus*) populations on Langara Island, which may have been a cause of a long-term decline in the numbers of Peregrine Falcon, *pealei* subspecies, nesting there (Nelson and Myres 1976; Nelson 1990; Bertram 1995). Rat eradication in 1995 (Kaiser *et al.* 1997; Taylor *et al.* 2000) allowed murrelet populations on Langara to approximately double by 2004, and for extirpated Cassin's Auklets (*Ptychoramphus aleuticus*) to recolonize the island (Regehr *et al.* 2007). Rats and other introduced predators still affect seabirds elsewhere on Haida Gwaii and some of the Scott Islands (Beebe 1960; Blood 1968; Parks Canada 2015). Recovering or increasing populations of native predators (River Otters [*Lontra canadensis]*, Bald Eagles) may have also recently affected seabird numbers in coastal British Columbia (Carter *et al.* 2012; Hipfner *et al.* 2012).

Colonial seabirds are vulnerable to chronic and acute oil spills, and they may also be subject to reproductive failure related to the effects of unfavourable oceanic conditions on marine prey, whereby the timing and amount of zooplankton and fish prey species are negatively affected by warming ocean temperatures (Bertram *et al.* 2001; Hipfner 2008).

4.2.3 Unknown threats

Threat 6. Human intrusions & disturbance
Peregrine Falcons show a range of tolerance to disturbance at aeries. Individual *anatum* birds in cities appear to tolerate humans and general disturbance, but in remote situations the species may be more susceptible to human disturbance; however, most *pealei* aeries are in extremely remote sites and it is unlikely that disturbance rates are significant (Fraser *et al.* 1999; Rowell 2002).

Peregrine Falcon population surveys have been conducted every 5 years or so in British Columbia since 1970. Surveys for *pealei* subspecies include aerial helicopter surveys, ground surveys, and boat surveys during which cracker shells are fired from shotguns at potential nesting cliffs. The boat/cracker shell method is most effective as it causes one or both adults to call loudly and fly off the nest or perch, thus identifying the territory as active. This method can only be used in the more remote areas (Haida Gwaii, parts of northern Vancouver Island) as it is not publicly acceptable to discharge crackers shells in populated areas. Surveys of aeries in the province are scheduled in the middle of the breeding season when eggs or young less than 2-weeks old are in the nest as adults are less likely to desert, and hatchlings are not likely to attempt to fledge early at this age. (Chutter, pers. comm., 2016). Desertion is most likely to occur earlier, during the courtship and territory establishment period, so disturbances at this time may negatively impact individual pairs. Post-survey checks in Haida Gwaii indicated that most nesting *pealei* subspecies were not affected by the survey; in a small number of instances, it appeared that breeding ended in failure, but it was not possible to determine whether this was related to disturbance from the survey or to other factors (Burles and Cowpar 1997; Burles 2005).

In more accessible areas of coastal British Columbia, paragliding and rock climbing have come into conflict with nesting Peregrine Falcons; however, nest cliffs known to be popular with climbers are those of *anatum* subspecies, and such situations have been successfully managed in collaboration with local users by closing off the portion of the cliff that the peregrines are using.

Threat 8. Invasive and other problematic species and genes
The impacts of historical recovery-related releases of Peregrine Falcons into the Canadian range of Peregrine Falcon, *pealei* subspecies, are currently unknown; however, if any birds were released, they were likely also *pealei* rather than the birds of diverse origins used in recovery efforts around North America (Chutter, pers. comm., 2016). Hybridization with *anatum* birds is known to occur in the southeast Vancouver Island/Gulf Islands zone, but as this is likely an area within the breeding range of both subspecies (or even a range expansion for *pealei*; see Section 3.2.1, above), this is not considered a threat. Effects of introduced species on seabird populations are covered under Threat 7, above.

4.2.4 Negligible Threats

Threat 1. Residential & commercial development; Threat 4. Transportation & service corridors
Housing developments that cause disturbance around nest cliffs are a possibility in the Gulf Islands zone only, and thus not a significant threat. No cases of the *pealei* subspecies using bridges or buildings are known; all birds that do are considered to be the *anatum* subspecies. Many aeries are in national or provincial protected areas and habitat protection measures are relatively high. Regular air traffic likely does not pose a significant threat to this species; research on Peregrine Falcons in Alaska found effects of low-altitude flights on nest attendance but not on provisioning rates (Palmer 1998), and flight paths have been successfully rerouted away from known nest sites in provincial parks (Chutter, pers. comm., 2016)

Threat 3. Energy production & mining
Gravel pit operations, if they occur at nest cliffs, could cause abandonment of the site. Windfarms may be developed in the marine environment; however, none has been developed to date, and it seems unlikely this will happen within the next 10 years. It is unknown whether land-based windfarms may pose a threat to the *pealei* subspecies, although the Cape Scott wind farm has been in operation for several years, with no reported interactions with Peregrine Falcons (Woo, pers. comm., 2016)

Threat 5. Biological resource use
Harvesting of Peregrine Falcons for falconry is limited and well regulated in British Columbia. All capture of peregrines in the province was closed from 1988 until 2008. Since permitting for a maximum annual harvest of six Peregrine Falcons was re-opened in 2008, between two and six permits have been issued to falconers annually (permitting details are described in Section 5, below). No birds have been taken from the wild to date. This is likely related to the remote and geographically restricted take area (northern Vancouver Island), requirement for Compulsory Inspection by a wildlife official to determine subspecies, easy access to captive-bred birds, and the greater popularity of Gyrfalcons (*F. rusticolus*) and Gyrfalcon hybrids as falconry birds in the province (Chutter, pers. comm., 2016). Given these factors, the overall take in next 10 years is anticipated to be negligible.

In Washington, a maximum allowable harvest of up to 5% of the annual fledgling production of eyas (i.e., nestling) or passage (fledged young-of-year) *anatum* or *pealei* birds may be taken, based on U.S. Fish and Wildlife Service regulations. From 2011 through 2015, an average of 4.6 eyas/fledgling Peregrine Falcons were taken in Washington per year. The capture period of eyas and fledgling birds is limited to May 1 through August 31 (Hayes, pers. comm., 2016). Thus, it is possible that a passage *pealei* bird hatched in British Columbia could be taken by Washington falconers (see also Section 3.3.3, above). There have been reports of illegal shooting of Peregrine Falcons in Washington State (Hayes and Buchanan 2002), a threat to which wintering British Columbia birds are also exposed; however, exposure is limited by the apparently low rate of movement between the province and Washington (Varland *et al.* 2008, 2012). Illegal shooting to protect domestic animals may also occur in the province, but if it has occurred in the past few decades, it has so far gone unreported (Chutter, pers. comm., 2016). Poaching of nestlings or eggs for falconry purposes has likely occurred in the past (Cooper and

Beauchesne 2004), but at an unknown rate, and is not currently considered a threat to the *pealei* subspecies.

Disturbance from logging (or loss of nest trees, in the rare instances when the *pealei* subspecies uses them for nesting) is a potential threat if it takes place during the breeding season near active nests. The scope and severity of this threat are thought to be negligible at this time.

Threat 10. Geological events
Earthquakes and associated tsunamis are assumed to only be a risk to low-elevation (< 30 m) sites bordering the marine environment.

5 CURRENT MANAGEMENT FRAMEWORK

In Canada, birds of prey are not protected under the federal *Migratory Birds Convention Act* (Government of Canada 1994) and only come under federal jurisdiction if they become listed under the federal *Species at Risk Act* (SARA; Government of Canada 2002); otherwise they are managed at the provincial or territorial level. Since the Peregrine Falcon, *pealei* subspecies, only occurs in Canada in British Columbia, and has never been ranked nationally above Special Concern, it has been managed by the provincial government under the *Wildlife Act* (Province of British Columbia 1982), and via SARA requirements for a management plan and related measures. Management of the *pealei* subspecies in British Columbia has been guided by provincial management plans (Munro 1988; Cooper 2007). Before about 1980, management of this subspecies was focused mainly on monitoring the harvest. Since then, management has shifted to conservation of breeding birds, nest sites, and seabird prey.

5.1 Wildlife Act

The strongest current protection for the Peregrine Falcon, *pealei* subspecies, in British Columbia is under the provincial *Wildlife Act* (Province of British Columbia 1982). Section 34 of this act protects birds, their eggs, nestlings, and nests when the nests are occupied. The Peregrine Falcon, however, is one of a select group of bird species identified under Section 34(b) for which the nest is protected year-round, regardless of whether it is occupied. This is generally a moot point as almost all *pealei* nests are on seaside cliffs, a habitat that is rarely directly threatened by destruction; however, Section 34 also makes it an offence to "molest … nests," which helps to protect against disturbance activities that might affect nest use during the breeding season (e.g., logging directly above a nest, dumping of yard waste over a nest cliff, and rock climbing).

Persecution (shooting, trapping, poisoning, or any other measure of killing) of Peregrine Falcons in British Columbia is also illegal under Section 34, although allowances can be made for harvest for falconry and defence of domestic animals (e.g., poultry). Current penalties (Section 84) related to conviction for offences under Section 34 include a fine of up to $100 000 and 1 year in jail for a first offence.

5.2 Harvest for Falconry

Harvesting of Peregrine Falcons for falconry under the *Wildlife Act* was re-opened in 2008, after a closure since 1988. To date, a maximum of six permits have been issued per year; only experienced Class 1 falconers may apply. Although permits have been acquired annually by falconers, no birds have been taken from the wild since the re-opening in 2008. In addition:

- Only young-of-year passage birds of *pealei* subspecies may be taken.
- Each permit is valid for only one 4.5-month season.
- Harvest is limited to Management Units 1-12 and 1-13 (north Vancouver Island) to restrict any take to *pealei* birds.
- Any birds harvested must be taken to the B.C. Ministry of Forests, Lands and Natural Resource Operations office in Nanaimo for inspection (plumage, morphology, and blood sample) to confirm subspecies.
- Any bird taken by falconers comes under their possession permit and must be banded with provincial government bands; ownership is maintained by the Crown.
- Harvest for falconry is not permitted in provincial parks and protected areas.

5.3 Protected Areas

Many *pealei* subspecies aeries are located within federal or provincial protected areas. Ecological reserves are established at Triangle Island (980 ha), Beresford Islands (425 ha), Sartine Island (1091 ha), Hippa Island, and Solander Island. Approximately half of all known aeries in Haida Gwaii are protected within the Gwaii Haanas National Park Reserve and Haida Heritage Site (147 000 ha; Burles, pers. comm., 2006). Naikoon Provincial Park (72 000 ha), and Lanz and Cox islands (5500 ha) also protect significant amounts of habitat. Foraging habitat is protected in ecological reserves at Lepas Bay, Rose Spit, Tow Hill, Bligh Island, Big Bunsby Island, and Satellite Channel. In addition, since the previous management plan was written for this taxon, Haida Gwaii has undergone land use planning. As a result, 25% of the island is now in a conservancy or provincial park. Many of these areas are located along the coast and should provide additional protection for the *pealei* subspecies (Wijdeven, pers. comm., 2016).

5.4 National Parks Act

Peregrine Falcons occurring in national parks are also protected by the *Canada National Parks Act* (Government of Canada 2000). This act essentially prohibits harassment, possession, trafficking or hunting of Peregrine Falcons, with fines of up to $2 million for individuals and up to $12 million for corporations, and 5 years in jail.

5.5 Convention on International Trade of Endangered Species

The Peregrine Falcon is protected internationally under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which restricts the import and export of birds and eggs in signatory countries (see Appendix 1).

6 MANAGEMENT GOAL AND OBJECTIVES

6.1 Management Goal

Over the short term, the management goal is to maintain the population of the Peregrine Falcon, *pealei* subspecies, within ±5% of recent estimates, and retain its current distribution. The long-term goal is to gradually increase the population of the *pealei* subspecies to numbers that are closer to those estimated for the early 20th century (as described below).

6.2 Rationale for the Management Goal

If numbers declined to levels approaching 1985 estimates, the status of the *pealei* subspecies might change to Threatened; however, if the population did recover to numbers likely predicted by habitat carrying capacity, total numbers of adult birds would presumably remain too low for de-listing (i.e., would meet COSEWIC listing criterion of very small total Canadian population). Thus, the goal of this management plan is to maintain (short term) and increase (longer term) population numbers and retain the known range, as maintaining a stable or increasing population near current levels will likely result in the status remaining as of Special Concern.

The precise population size in the early 20th century is unknown, but the entire Haida Gwaii population in the 1950s was estimated at a maximum of 108 pairs (Munro 1988). If breeding populations elsewhere in the province were proportionally the same in the 1950s as in 2015, then up to 43 additional pairs may have existed in the 1950s (151 in total for British Columbia, excluding southeast Vancouver Island). Conversely, if 2015 populations elsewhere in the province (35 pairs) have not changed since the 1950s, then the population in the 1950s totaled about 133 pairs outside southeast Vancouver Island. In 2007, the Langara Island subpopulation was a suspected 75% lower than during the 1920s (Nelson, pers. comm., 2007) and about 50% lower than during the 1950s (Beebe 1960; Kirk and Nelson 1999); however, this was likely driven by introduced rats (since removed) depredating seabirds, so trends may not represent other areas. Thus, it is likely reasonable to suggest that the historical Canadian population may have approached 150–200 breeding pairs.

Augmentation of Peale's Peregrine Falcon population is not required, because: (1) populations have been relatively stable or slightly increasing for a long period; and (2) habitat in the core of its range seems to be well occupied. Although fewer occupied territories may occur on certain islands (e.g., Langara Island) than historically, large-scale factors (particularly those leading to declining or contracting seabird nesting populations) are likely limiting populations and augmentation would not be effective.

6.3 Management Objectives

The following are the management objectives for Peregrine Falcon, *pealei* subspecies.

1. To monitor the population in British Columbia with enough consistency, coverage and frequency to detect changes.
2. To maintain at current or higher population levels the colonially nesting seabirds that are the primary prey of Peregrine Falcon, *pealei* subspecies.
3. To address knowledge gaps regarding organochlorine contaminants and other bioaccumulating toxins and their impacts on populations of Peregrine Falcon, *pealei* subspecies.
4. To develop and update oil spill response plans for the areas around provincial seabird colonies.
5. To ensure any falconry harvest is sustainable.
6. To conduct genetic research to refine knowledge of subspecies boundaries.

7 APPROACHES TO MEET OBJECTIVES

7.1 Actions Already Completed or Underway

The following actions have been categorized by the action groups of the B.C. Conservation Framework (B.C. Ministry of Environment 2009). Status of the action group for this species is given in parentheses.

Compile Status Report (complete)

- COSEWIC status report completed (COSEWIC 2007). Re-assessment due 2017; update status report currently in preparation (2016).

Send to COSEWIC (complete)

- Peregrine Falcon, *pealei* subspecies assessed as of Special Concern (COSEWIC 2007).

Planning (complete)

- British Columbia Management Plan completed (this document, 2016).

Monitor Trends (ongoing)

- Populations have been monitored on Haida Gwaii since 1955 (Kirk and Nelson 1999). Since 1970, special emphasis has been placed on the Langara Island population by Wayne Nelson, University of Alberta (e.g., Nelson 1977). Nelson monitored peregrine nest success and banded young peregrines on Langara annually from 1970 until 2014. Currently, efforts are ongoing to find others to continue the surveys, to analyze Nelson's data, and to publish further results from his research.
- As part of a Canada-wide monitoring program for Peregrine Falcons, provincial government biologists have conducted occupancy surveys every 5 years for the *pealei* subspecies. In recent years, some limited productivity data was also collected. These surveys began in 1970 on Haida Gwaii; in 1980, southeast Vancouver Island and the Gulf Islands were added, and in 1985/86, northern Vancouver Island was included (Chutter 2016). Some aeries on Vancouver Island and the Gulf Islands were monitored more intensively by Don Doyle

(Ministry of Environment) from 2000 to 2005, including blood sampling for genetic analysis.
- Trends in some populations of colonial seabirds (e.g., Triangle Island) are monitored by Environment Canada on an ongoing basis.
- Sampling of environmental contaminants in seabird eggs and tissue is ongoing at some sites.

Species and Population Management (in progress)

- Harvesting of the *pealei* subspecies for falconry is extremely limited and intensively regulated and monitored.
- For Haida Gwaii, a standing contract between the provincial government and the Habitat Conservation Trust Foundation enables eradication of introduced raccoons on seabird islands.
- In 2011, Parks Canada renewed efforts to eradicate rats on other islands in the Haida Gwaii archipelago. Rat eradication on Arichika, Murchison, and Faraday islands is complete. Rats were also successfully removed from St James Island in 1999. All but Faraday host peregrine aeries, as well as nesting seabird populations (Bergman, pers. comm., 2016).
- Parks Canada has included the *pealei* subspecies, in their Multi-species Action Plan for Gwaii Haanas (Parks Canada 2016).
- Being located within protected areas ensures protection for aeries and adjacent habitat of many *pealei* pairs and their young (see Section 5, above).
- Various measures are in place to protect most seabird colonies along the coast of British Columbia, some of which are vital sources of food for the *pealei* subspecies. In 2002, 89% of 98 alcid and storm-petrel colonies in coastal British Columbia had some form of protection (national park reserve, ecological reserve, wildlife habitat area, lighthouse reserve); the remainder are on Crown land (Hipfner *et al.* 2002).
- The development of oil spill response plans for the British Columbia coast (e.g., Blight 2004; Nuka Research and Planning 2013) is ongoing.

Review Resource Use (ongoing)

- Harvesting of the *pealei* subspecies for falconry is intensively regulated and monitored, and can be quickly adapted, if required.

7.2 Recommended Management Actions

Management actions that will benefit and aid in the recovery of the Peregrine Falcon, *pealei* subspecies, are described in Table 4.

Table 4. Recommended management actions for Peregrine Falcon, *pealei* subspecies.

Objective	Conservation Framework action group	Actions to meet objectives	Threat[a] or concern addressed	Priority[b]
1	Monitor Trends	Continue monitoring population trends by conducting Peregrine Falcon surveys along the British Columbia coast every 5 years. Review protocols to ensure data	All	Essential

Objective	Conservation Framework action group	Actions to meet objectives	Threat[a] or concern addressed	Priority[b]
		collected are suitable for trend analysis. If subsampling is trialed, sampling design should have adequate power to detect relevant declines.		
1	Monitor Trends	Consider expanding population monitoring to the north coast and southwest coast of Vancouver Island, possibly through use of volunteer-collected data.	All	Beneficial
2	Monitor Trends	Expand existing monitoring/continue monitoring population trends of the colonial seabirds consumed by the *pealei* subspecies.	7	Essential
3	Monitor Trends	Monitor trends in environmental contaminants (e.g., organochlorines, brominated flame retardants) in eggs or tissues of the *pealei* subspecies, and identify potential sources of contaminants.	9	Essential
2, 3	Monitor Trends	Expand existing monitoring/continue to monitor trends in environmental contaminants in seabird prey, and identify potential sources of contaminants.	7, 9	Essential
1, 5	Monitor Trends	Continue to include productivity monitoring in 5-year surveys of coastal Peregrine Falcons, where feasible	All	Beneficial
2	Species and Population Management	Expand protection for the seabird colonies used by the *pealei* subspecies, including their at-sea habitat.	7	Necessary
2	Species and Population Management	Manage forage fish populations to include their consumption by coastal seabirds, at a level that maintains healthy seabird populations.	7	Essential
3	Monitor Trends	Conduct additional analyses on the coastal Peregrine Falcon contaminant data already available.	9	Necessary
2	Species and Population Management	Prepare oil spill response plans for areas near seabird colonies and *pealei* wintering habitat.	7, 9	Essential
2	Species and Population Management	Continue efforts to eradicate non-native predators at the nesting colonies of seabird prey of the *pealei* subspecies.	7	Necessary
4	Species and Population Management *and* Review Resource Use	Continue to monitor and manage harvesting of the *pealei* subspecies.	5	Essential
4	Review Resource Use	Work with American colleagues to monitor falconry in Washington State for take of any provincial passage birds.	5	Necessary
5	Species and Population Management	Conduct genetic research to refine knowledge of subspecies boundaries as these relate to management approaches.	All	Beneficial

[a] Threat numbers according to the IUCN–CMP classification (see Table 3 for details).
[b] Essential (urgent and important, needs to start immediately); Necessary (important, but not urgent, action can start in 2–5 years); or Beneficial (action is beneficial and could start at any time that was feasible).

7.3 Narrative to Support Management Actions Table

Where supporting narrative is required, recommended actions have been categorized by the action groups of the B.C. Conservation Framework.

7.3.1 Monitor Trends

Regular range-wide surveys are necessary to effectively monitor the Canadian population of Peregrine Falcon, *pealei* subspecies. Surveying a subset of aeries for productivity would also provide data for monitoring population health (and, by inference, health of the ecosystems, especially prey sources, on which *pealei* birds depend). The recommended subset of aeries for any productivity monitoring includes:

- Haida Gwaii–including Langara Island and a subset of aeries within Gwaii Hanaas National Park Reserve.
- Scott Islands–Triangle Island is an ecological reserve with globally important seabird populations. Peregrine surveys could be integrated with other research ongoing at Triangle Island. High aerie density is thought to exist on other islands in the Scott Island group.
- Gulf Islands–a population showing a decline in numbers from 2010 to 2015 (albeit potentially one related to survey timing; Chutter, pers. comm., 2016), these birds breed in areas with much higher human activity than other subpopulations, although some aeries fall within the Gulf Islands National Park Reserve. Intergrade zone for *anatum/pealei.*

8 MEASURING PROGRESS

The following performance measures provide a way to define and measure progress toward achieving the management goal and objectives. Performance measures are listed below for each objective.

Success in achieving the management goal is effectively demonstrated if monitoring every 5 years shows that numbers of Peregrine Falcon, *pealei* subspecies, are maintained (short term) or increased (longer term), and that birds continue to occupy their current range (or to expand it, on west coast of Vancouver Island and/or the north mainland coast region).

Measurable(s) for Objective 1

- Monitoring is adequate to detect regionally significant population trends.
- Productivity at monitored nests is an average of 1.25 or more fledglings per year.

Measurable(s) for Objective 2

- Seabird populations at major colonies are stable or increasing over the last 5-year period.
- Efforts to eradicate introduced predators near seabird colonies are continued in areas where the *pealei* subspecies nest (e.g., the Scott Island group).

Measurable(s) for Objective 3

- Monitoring ongoing for organochlorine and brominated flame-retardant contaminant levels in *pealei* tissues and in its marine food web.

Measurable(s) for Objective 4

- Ensure harvest does not exceed six birds per year and is restricted to passage *pealei*; only consider increasing harvest if the harvested area can be increased, and/or future data collected on fledging success indicates that an expanded harvest can be supported.

Measurable(s) for Objective 5

- Knowledge of taxonomic status of southeastern Vancouver Island/Gulf Island/Lower Mainland birds is refined.

9 EFFECTS ON OTHER SPECIES

Management activities for Peregrine Falcon, *pealei* subspecies, will be implemented with consideration for all co-occurring species, with focus on species at risk, to avoid or minimize negative impacts to these species or their habitats. Monitoring seabird populations, which are the primary prey of Peale's Peregrine Falcons, and eradication of introduced predators will directly benefit at-risk seabird species, such as the Ancient Murrelet, Cassin's Auklet, and other burrow-nesting seabirds (see Harfenist and Kaiser 1997; Hartman and Eastman 1999)

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APPENDIX 1. CITES NON-DETRIMENT FINDING

September 2016

Non-Detriment Finding Under the Convention on International Trade in Endangered Species (CITES) of Wild Fauna and Flora, Regarding the Export of *Falco peregrinus pealei* from British Columbia, Canada

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Ecology of Species

The Peregrine Falcon (*Falco peregrinus*) is a crow-sized raptor with long, pointed wings that allow it to specialize in speedy, direct pursuit of prey in open habitats. British Columbia's two breeding subspecies have different diets; the coastal Peale's Peregrine Falcon (*F. p. pealei;* "*pealei* subspecies" hereafter) feeds on colonial seabirds such as Ancient Murrelets (*Synthliboramphus antiquus*), but also eats other waterbirds and shorebirds. This diet puts Peregrine Falcons at the top of the food chain, which contributes to their vulnerability to contaminants that bioaccumulate through prey species.

The *pealei* subspecies typically nest near the ocean and are most common where prey species are likely to be abundant (Rowell 2002). A ledge on a cliff is the most common nest site, but other high nesting sites with a ledge are also used, including steep embankments, trees (in cavities or abandoned stick nests), tall buildings, and bridges (Johnstone 1999; Rowell 2002). Most hunting by the *pealei* subspecies is done within several kilometres of the nest (Kirk and Nelson 1998). Habitat is not considered as a direct limiting factor for *pealei* subspecies populations (Rowell 2002).

The *pealei* subspecies are likely non-migratory or relatively short distance dispersers (compared to other subspecies of Peregrine Falcons), largely remaining on the west coast of Canada and the United States during winter (Kirk and Nelson 1998), although some southward movement of birds occurs. Peregrine Falcons breed annually and may live to 20 years, but 4–5 years is more common in the wild (B.C. Ministry of Environment, Lands and Parks 1998; Rowell 2002).

The biology of the Peregrine Falcon is described in further detail by Hickey (1969), Cade *et al.* (1988), Erickson *et al*. (1988), Brown and Amadon (1989), and White *et al.* (2002). For more detail on the population and management of the *pealei* subspecies in British Columbia, refer to the main body of this management plan.

Population Estimate

Coordinated national surveys of Peregrine Falcon nest sites have been ongoing in Canada every 5 years since 1970 (see Rowell *et al*. 2003). The focus of the survey is to monitor historical nest sites, but new sites are also included as they are found. Overall increases in number of occupied nest sites recorded have resulted from increases in survey effort as well as real population increases (Rowell 2002). The 5-year survey results are only estimates of the minimum number of breeding pairs; not all available habitat is surveyed (Johnstone 1999). The total population would also include peregrines in areas not surveyed, failed breeders that abandoned their sites before surveys, non-breeding subadults, and non-breeding adult floaters without nest territories (Rowell *et al.* 2003). The relationship between the known breeding population and the total population cannot be quantified (Rowell *et al.* 2003).

In British Columbia, the *pealei* subspecies has been surveyed by the B.C. Wildlife Branch on Haida Gwaii since the early 1960s and approximately every 5 years since 1970, in coordination with national surveys. The area covered increased over time, with northern Vancouver Island added in 1980, and southern Vancouver Island/Gulf Islands added in 1986 (with *anatum* surveys in the Lower Mainland and Interior added in 1994 and 2005, respectively). Based on these surveys, numbers of the *pealei* subspecies are presently thought as stable or slightly increasing in British Columbia. Nevertheless, apparent provincial trends should be treated with caution as survey methods may differ slightly from year to year, total area surveyed is not consistent (count data not standardized for effort), and new sites are often added to each subsequent survey year. Statistical analyses of survey data have not been conducted (Rowell *et al.* 2003; Chutter 2016).

British Columbia is home to approximately 12% of the global population of the *pealei* subspecies, estimated in the late 1990s to be 850–1000 breeding pairs (White *et al*. 2002).

Status Assessments

Table A1.1 shows the current conservation ranks of the *pealei* subspecies.

Table A1.1. Global, national, and provincial conservation ranks for the Peregrine Falcon, *pealei* subspecies.

	Global (IUCN)	**National (General Status)**	**National (COSEWIC)**	**Provincial (CDC)**	**CITES**
Falco peregrinus pealei	G4T3	N3	Special Concern	Blue (G4T3)	Appendix I

NatureServe has assigned the Peregrine Falcon the global conservation status rank G4 because the global population of the species has more than 100 occurrences and is “apparently secure.” Both subspecies of Peregrine Falcon breeding in British Columbia have been assigned a conservation status rank T3 (“vulnerable”), which means these subspecies have 21–100 occurrences but may be rare and local throughout their range.

The *pealei* subspecies was listed by COSEWIC as Rare in 1978. In 1999, it was retained as a species of Special Concern (the equivalent listing) because its population is stable but threats are

posed to its prey base by introduced predators, ocean changes, contaminants, and oil spills (Kirk and Nelson 1998).

Legal Context

The *pealei* subspecies is included under the federal *Species at Risk Act* as a species of Special Concern; however, birds of prey are managed at the provincial or territorial level. Birds of prey, including this subspecies, are not included under the federal *Migratory Birds Convention Act*.

Section 34 of British Columbia's *Wildlife Act* prohibits the destruction of a Peregrine Falcon nest. It also prohibits the taking of wild bird eggs or adults without a permit. The capture of the *pealei* subspecies is limited to no more than six passage birds/year. The captive breeding population of this subspecies is large enough to be sustainable without input from wild populations.

Registration of captive breeding facilities is maintained by the Canadian Wildlife Service (Ottawa). Although the Peregrine Falcon is listed on Appendix I of CITES, individuals bred at CITES-registered facilities are considered "Appendix II" for purposes of international export. It is against provincial policy to export a wild-caught Peregrine Falcon from British Columbia, and export and CITES permits are not issued except for captive-bred birds.

Peregrine Falcons bred at non-CITES-registered facilities remain on Appendix I and do require a CITES import permit from the country of destination before the issuance of a CITES export permit; this situation is not covered by this Non-Detriment Finding and would require a separate deliberation by the Scientific Authority.

Penalties under the provincial *Wildlife Act* for illegal capture or egg-taking include fines of up to $100 000 and 1 year in jail for a first offence.

Conservation Management

To protect the *pealei* subspecies' prey base, most of the important seabird colonies on the British Columbia coast have been afforded various measures of protection via ecological reserves, a large National Park Reserve, and wildlife protection areas (Kirk and Nelson 1998). On Haida Gwaii, introduced rats and raccoons have had devastating impacts on the Ancient Murrelet and other seabirds upon which the *pealei* subspecies depends (studies cited in Kirk and Nelson 1998; Taylor *et al*. 2000). To combat this threat, the Canadian Wildlife Service carried out a massive rat-poisoning campaign on Langara Island in from 1995 to 1997, successfully eradicating the Norway Rat (*Rattus norvegicus*) (Kirk and Nelson 1998; Taylor *et al.* 2000).

It is likely that poaching of Peregrine Falcons is very rare. Currently, only captive-bred Peregrine Falcons can be exported internationally from British Columbia. A small take (of 6 or fewer) is currently allowed in British Columbia; however, this has not been used by the falconry community to date, and despite the issuance of permits since the harvest was reopened in 2008, none have been taken from the wild (Chutter, pers. comm., 2016).

Harvesting of Peregrine Falcons for falconry under the provincial *Wildlife Act* was re-opened in 2008 after being closed since 1988. To date, a maximum of six permits have been issued per year; only experienced Class 1 falconers may apply. In addition:

- Only young-of-year passage birds of *pealei* subspecies may be taken.
- Each permit is valid for only one 4.5-month season.
- Harvest is limited to Management Units 1-12 and 1-13 (north Vancouver Island) to restrict any take to *pealei* birds.
- Any birds harvested must be taken to the B.C. Ministry of Forests, Lands and Natural Resource Operations office in Nanaimo for inspection (plumage, morphology, and blood sample) to confirm subspecies.
- Although permits have been acquired annually by falconers, no birds have been taken from the wild.
- Any bird taken by falconers come under their possession permit and must be banded with provincial government bands; ownership is maintained by the Crown.
- Harvest for falconry is not permitted in provincial parks and protected areas.

Threats Assessment

The threats assessment based on the IUCN–CMP (World Conservation Union–Conservation Measures Partnership) unified threats classification system was updated in 2016. It is consistent with methods used by the B.C. Conservation Data Centre, COSEWIC, and the Environment Canada and Climate Change Canada recovery program. For a detailed description of the threats, see Section 4.2 (this document)

Under this scheme, the overall Threat Impact to the *pealei* subspecies was calculated as High to Low. The major threats to this subspecies are highly uncertain and revolve around variations in the prey base related to climate change, contaminants, and oil spills, as well as the direct (potential) impacts of oil spills and the bioaccumulating contaminants on the falcons themselves. The take of birds for international trade is not a threat owing to the management regime in place for this subspecies in British Columbia and Washington (where it is possible that the occasional British Columbia passage bird may be taken; harvest there is limited to 5% of annual production of wild young, with an annual average of 4.6 eyas or passage Peregrine Falcons (*pealei* and *anatum* ssp. combined) taken from 2011 through 2015).

CITES Criteria for Non-Detriment Finding

Figure A1.1, a radar diagram based on CITES guidelines, summarizes the factors that affect management of the Peregrine Falcon, *pealei* subspecies. None of the scores would indicate a concern from the non-detriment finding point of view. Monitoring, assessment, and management regimes are currently sufficiently integrated to respond to management concerns caused by the take of wild *pealei* subspecies in British Columbia.

The 2006 CITES workshop in Cancun, Mexico, on the creation of non-detriment findings recommended that a “risk based approach” should be used. The threats assessment for the *pealei* subspecies was last updated in 2016. Take of the *pealei* subspecies is considered a negligible threat to the population. The export of the *pealei* subspecies is confined to captive-bred birds and does not represent a threat to the wild population or its role in the ecosystem.

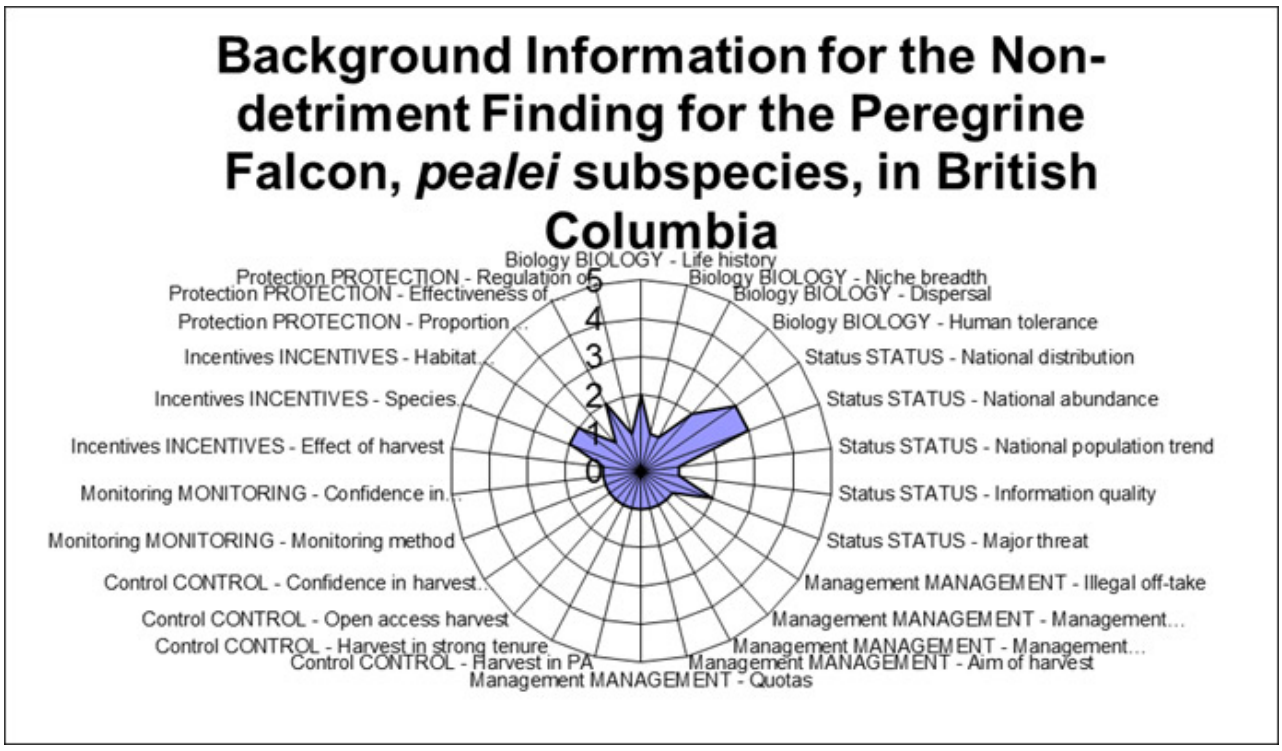

Figure A1.1. A radar diagram summarizing the factors that affect management of the Peregrine Falcon, *pealei* subspecies.

Conclusion

In British Columbia, the Peregrine Falcon, *pealei* subspecies, population is stable or slightly increasing. Nevertheless, the *pealei* subspecies is on the provincial Blue List because of its restricted distribution and small numbers, combined with potential threats to its food supply of colonial seabirds. Its harvest is extremely small and only allowed in a remote area of British Columbia. The demand for Peregrine Falcons in the falconry trade appears to have diminished with the advent of captive-bred falcons, particularly Gyrfalcons (*F. rusticolus*) and their hybrids (Chutter, pers. comm., 2016). All Peregrine Falcons legally exported out of British Columbia are captive-bred birds with seamless bands that allow for individual recognition. For this reason, exports of Peregrine Falcons from British Columbia will not have a deleterious effect on wild populations. Therefore, we recommend a Non-Detriment Finding for the Peregrine Falcons under the current management regime. This is a standing Non-Detriment Finding for birds that qualify for export under the current policy. Permitting staff may issue CITES permits for captive-bred birds from registered facilities without an individual Non-Detriment Finding from the Scientific Authority.

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