

# Species at Risk Status Report

Galiano Island



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The Galiano Conservancy Association

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Canada

# Table of Contents

<b>Acknowledgements</b> .....	i
<b>Status Reports</b>	
<u>Plants:</u>	
California Hedge Parsley <i>Yabea Microcarpa</i> .....	1
Gray's Desert Parsley <i>Gray's Lomatium grayi</i> .....	5
Farewell-to-Spring <i>Clarkia Amoena</i> .....	8
Phantom Orchid <i>Cephalanthera Austinae</i> .....	11
Slender Popcornflower <i>Plagiobothrys Tenellus</i> .....	14
White Meconella <i>Meconella Oregana</i> .....	17
Scalepod <i>Idaho Scapigera</i> .....	20
 <u>Mosses:</u>	
Twisted Oak Moss <i>Suntrichia laevipia</i> .....	23
Banded Cord-Moss <i>Entosthodon fascicularis</i> .....	27
Rigid Apple Moss <i>Bartramia stricta</i> .....	30
 <u>Insects:</u>	
Blue Dasher <i>Pachydiplax longipennis</i> .....	33
Propertius Duskywing <i>Erynnis propertius</i> .....	36
Western Pondhawk <i>Erythemis collocata</i> .....	39
Dun Skipper <i>Euphyes vestries</i> .....	42
Taylor's Checkerspot <i>Euphydryas editha taylori</i> .....	45
Island Blue (greenish blue) <i>Plebejus saepiolus insulanus</i> .....	48
Moss Elfin <i>Callophrys mossii mossii</i> .....	51
 <u>Gastropods</u>	
Blue-Grey Taildropper Slug <i>Prophysaon coeruleum</i> .....	54
Oregon Forestnail <i>Allogona townsendiana</i> .....	57
Pacific Sideband <i>Monadenia fidelis</i> .....	60

Birds:

Band Tailed Pigeon *Patagioenas fasciata*.....63  
Common Night Hawk *Chordeiles minor*.....66  
Great Blue Heron *Ardea herodias fannini*.....69  
Olive Sided Flycatcher *Contopus cooperi*.....72  
Peregrine Falcon *Falco peregrinus anatum*.....75  
Western Screech Owl *Megascops kennicottii*.....78  
Purple Martin *Progne subis*.....81

Amphibians and Reptiles:

Red Legged Frog *Rana aurora*.....84  
Western Painted Turtle *Chrysemys pict bellii*.....87  
Sharp Tailed Snake *Contia tenuis*.....90

**Appendix**.....93

## Acknowledgements

The information for the Description, Habitat, Range, and Threats of certain species was obtained from:

- (1) [http://www.sararegistry.gc.ca/default\\_e.cfm](http://www.sararegistry.gc.ca/default_e.cfm)

Additional information was obtained from:

- (2) <http://a100.gov.bc.ca/pub/eswp/>

Species:

### Plants:

- (2) California Hedge Parsley *Yabea Microcarpa* **Red. COSEWIC: Not listed**
- (1,2) Gray's Desert Parsley *Gray's Lomatium grayi* **Red. COSEWIC: Threatened**
- (2) Farewell-to-Spring *Clarkia Amoena* **Blue. COSEWIC: Not listed**
- (1,2) Phantom Orchid *Cephalanthera Austinae* **Red. COSEWIC:Threatened**
- (1,2) Slender Popcornflower *PlagiobothrysTenellus* **Red. COSEWIC: Threatened**
- (1,2) White Meconella *Meconella Oregana* **Red. COSEWIC: Endangered**
- (2) Scalegod *Idahoa Scapigera* **Red. COSEWIC: Not Listed**

### Mosses:

- (1,2) Twisted Oak moss *Suntrichia laevipia* **Blue. COSEWIC: Special concern**
- (1,2) Banded Cord-moss *Entosthodon fascicularis* **Blue. COSEWIC: Special concern**
- (1,2) Rigid Apple moss *Bartramia stricta* **Red. COSEWIC: Endangered**

### Insects:

- (2) Blue Dasher *Pachydiplax* **Blue. COSEWIC: Not listed**
- (2) Propertius Duskywing *Erynnis propertius* **Blue. COSEWIC: Not listed**
- (2) Western Pondhawk *Erythemis collocate* **Blue. COSEWIC: Not listed**
- (1,2) Dun Skipper *Euphyes vestries* **Blue. COSEWIC: Threatened**
- (1,2) Taylor's Checkerspot *Euphydryas editha taylori* **Red. COSEWIC: Endangered**
- (1,2) (greenish blue)Island Blue *Plebejus saepiolus insulanus* **Red. COSEWIC: Endangered**

(2) Moss's Elfin *Callophrys mossii mossii* **Blue. COSEWIC: Not Listed**

### **Gastropods**

(1,2) Blue-Grey Taildropper Slug *Prophysaon coeruleum* **Red. COSEWIC: Endangered**

(1,2) Oregon Forestnail *Allogona townsendiana* **Red. COSEWIC: Endangered**

(2) Pacific Sideband *Monadenia fidelis* **Blue. COSEWIC: Not listed**

### **Birds:**

(1,2) Band Tailed Pigeon *Patagioenas fasciata* **Blue. COSEWIC: Threatened**

(1,2) Common Night Hawk *Chordeiles minor* **Red COSEWIC: Special concern**

(1,2) Great Blue Heron *Ardea herodias fannini* **Blue:COSEWIC: Special concern**

(1,2) Olive Sided Flycatcher *Contopus cooperi* **Blue. COSEWIC: Threatened**

(1,2) Peregrine Falcon *Falco peregrinus anatum* **Red COSEWIC: Special concern**

(1,2) Western Screech Owl (*Megascops kennicottii*) **Blue COSEWIC: Special Concern**

(2) Purple Martin *Progne subis* **Blue COSEWIC: Not listed**

### **Amphibians and Reptiles:**

(1,2) Red Legged Frog *Rana aurora* **Blue. COSEWIC: Special concern**

(1,2) Western Painted Turtle *Chrysemys pict bellii* **Blue. COSEWIC: Endangered**

(1,2) Sharp Tailed Snake *Contia tenuis* **Red. COSEWIC: Endangered**

## California Hedge Parsley (*Yabea microcarpa*)



BC: Red-Listed  
 Provincial Listing: S1S2 (2008)  
 COSEWIC: Not-Listed  
 Global: G5? (1990)  
 Conservation Framework Priority: 1  
 Galiano Island Status: Confirmed

### **Description:**

California Hedge Parsley is a slender annual herb growing from a taproot. It has a single or branched stem and ranges from 10 to 40 cm tall. The white flowers are arranged in multi branched clusters and the fruits are oblong flattened side to side.

### **Habitat:**

California Hedge Parsley occurs within Garry Oak and associated ecosystems and is found from vernal moist grassy slopes and rock outcrops to closed canopy Garry oak, Douglas-fir woodlands, and Big-Leaf Maple stands. Most of the sites are on hilly terrain on south facing slopes in shallow-soiled open sites.

### **Range:**

California hedge-parsley is native to western North America, where it ranges from southwestern British Columbia southward along both sides of the Cascade Mountains in Washington to Arizona and Baja California. In British Columbia, California hedge parsley is known only from southeastern Vancouver Island and the adjacent Gulf Islands. There are currently 13 known occurrences (comprising about 7 distinct populations) distributed over a small geographic area spanning Malahat Drive north of Victoria, Duncan, Salt Spring Island, Galiano Island and Saturna Island.

### **Threats:**

The primary threat to existing populations is habitat destruction associated with urbanization. Competition from non-native species also threatens to degrade both existing and potential habitat. Heavy grazing by sheep and/or goats at some Gulf Island sites also represents a potential threat, although the impacts of grazing are not clear at this time.

*Scope:* Low  
*Severity:* Low  
*Immediacy:* Low

**Current Status:**Number of EOs:

9

EO Comments:

All EO's were found on Mount Sutil, a relatively undisturbed Garry Oak ecosystem. All the plants were found in a relatively close proximity (under 200m distribution).

Number of Protected EOs:

All 9 EO's were found in a protected area.

Population Size:

Undetermined

Range Extent:

Only Mt Sutil.

Landowner Contact:

92 possible

16 visited

Viability: **Medium**

Area of potential habitat	238.98 ha
Portion of Galiano Island with potential habitat	3.96 %
Area of potential habitat with protected status	110.31 ha
Portion of potential habitat with protected status	46.16 %
Portion of Galiano Island with protected status	19.30 %

As the California Hedge Parsley occurs in Garry Oak ecosystems, and roughly half of the habitat is in protected areas, the threat of habitat destruction due to urbanization is very limited. However, even in these protected areas, Scotch Broom is a dominant threat and very prevalent. As California Hedge Parsley is very sensitive to the shading and crowding out of Scotch Broom this can be seen as the dominant threat on Galiano. So far, only Mt Sutil has a full restoration plan in progress, and other protected areas have not been fully assessed. An invasive species survey has been carried out on other protected areas and the Scotch Broom coverage is abundant. No domestic grazing sites are known to exist where California Hedge Parsley occurs.

**Historical Data:**

In 2003, 2004 and again in 2008, populations have been observed at Mathews Point and Mount Sutil. 5000 and 10000 plants were observed in 2004 at Mount Sutil over 5 hectares. At Mathews Point in 2008 around 100-200 plants were observed in a 100sq meters. In 2008 600 plants were observed over 20sq m. Both locations have a good estimated viability.

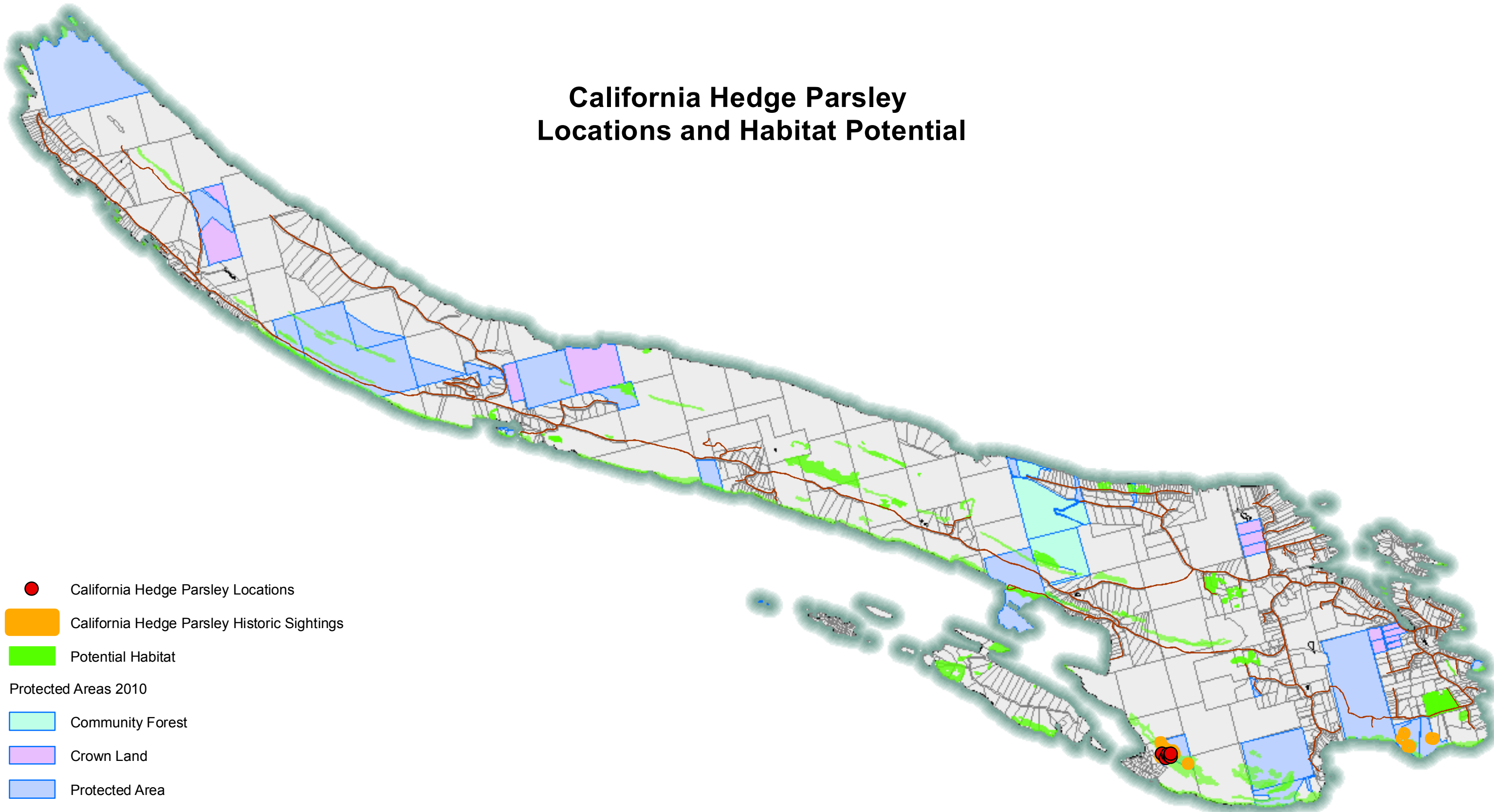
**Recommendations:**

- Private landowners should be made aware of new populations of this species if they are discovered, and appropriate management practices suggested.

- Existing populations should be monitored on an ongoing basis to determine the size, as well as for any negative impacts stemming from private land development, livestock grazing and encroachment of introduced species.
- On Mt Sutil and Mathews Point, removal of the dominant threat, Scotch Broom, should continue.

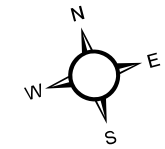


# California Hedge Parsley Locations and Habitat Potential



- California Hedge Parsley Locations
- California Hedge Parsley Historic Sightings
- Potential Habitat
- Protected Areas 2010
  - Community Forest
  - Crown Land
  - Protected Area

Produced By: Galiano Conservancy Association  
Map Date: March 2011  
Scale: 1:59,000  
Projection: UTM Zone 10 NAD83



### Gray's Desert Parsley (*Lomatium grayi*)



BC: Red-Listed

Provincial: S1 (2008)

COSEWIC: Threatened (2008)

Global: G5 (1987)

Conservation Framework Priority: 2

Galiano Island Status: Confirmed

#### **Description:**

The plant is an herbaceous perennial from a long thick taproot. Stems are smooth and hairless and reach up to 50 cm in height. The leaves are mostly basal and very finely cut, short, rough and hairy and the flowers are yellow. It is a strong smelling plant with an odour similar to celery.

#### **Habitat:**

Gray's desert parsley grows on dry, rocky cliffs and bluffs within the Coastal Douglas-fir zone and Garry oak ecosystems; the micro habitats are shallow soils on inaccessible ledges or vertical fissures in rock faces.

#### **Range:**

The species ranges from southern California and New Mexico north through Oregon and Washington to Salt Spring and Galiano, which is the northern limit of its range.

#### **Threats:**

Urban development which destroys or degrades the habitat is of special concern along with extensive browsing from wild foraging animals. Invasive species, specifically Scotch Broom, are the greatest threat as they can out-compete Gray's Desert Parsley even on the hard to reach cliffs where the plant tends to grow. An additional threat comes from landowners who throw garbage over the cliffs which can cover the areas where the plants grow.

*Scope:* High

*Severity:* High

*Immediacy:* High

**Current Status:**Number of EOs:

1

EO Comments:

On a southwestern facing cliff a number of plants are nestled in rocks at various altitudes and spread out over a kilometer.

Number of Protected EOs:

Most of the EO's occur within a protected area.

Population Size:

1650 plants (2002)

Range Extent:

Less than 1.5km along the southwestern cliff of Galiano Island

Landowner Contact:

39 possible

9 visited

Viability: **Medium**

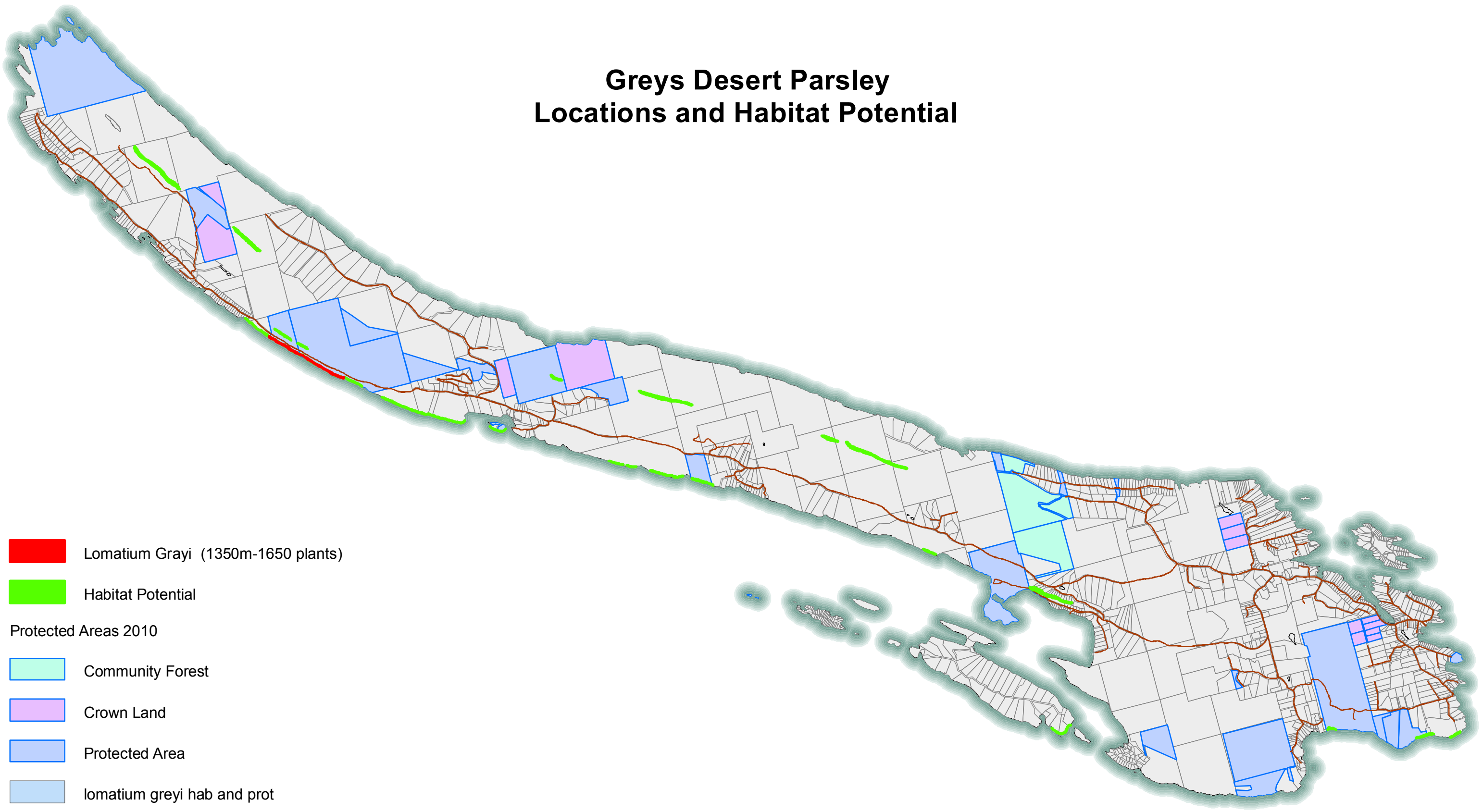
Area of potential habitat	19.08 ha
Portion of Galiano Island with potential habitat	0.32 %
Area of potential habitat with protected status	6.06 ha
Portion of potential habitat with protected status	31.75 %
Portion of Galiano Island with protected status	19.30 %

As this species is only found in one location on Galiano, it is highly sensitive to any disturbance. Along the ridge where it occurs Scotch Broom can be seen as well making broom the dominant threat to the Gray's Desert Parsley on Galiano. The location is on a private and protected property; however no known dumping of garbage has occurred. No grazing from animals can happen as the location is too perilous even for the most adventurous of deer.

**Recommendations:**

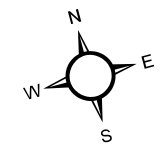
- Proper mapping of the known locations and distribution area of this plant needs to be done.
- Scotch Broom grows along the ledge of the cliff where the Grey's Desert Parsley grows and thus needs to be eradicated as it is one of the main threats.
- Landowner contact needs to be done with the people who own the lots near the known locations.
- A full survey of the extent of the Scotch Broom along the cliff ledge, and face needs to be done.

# Greys Desert Parsley Locations and Habitat Potential



- Lomatium Grayi (1350m-1650 plants)
- Habitat Potential
- Protected Areas 2010
  - Community Forest
  - Crown Land
  - Protected Area
  - lomatium greyi hab and prot

Produced By: Galiano Conservancy Association  
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Projection: UTM Zone 10 NAD83



**Farewell-to-Spring** (*Clarkia amoena* var. *caurina*)



BC: Red-Listed  
 Provincial: S1S2 (2008)  
 COSEWIC: Not-Listed  
 Global: G5? (1990)  
 Conservation Framework Priority: 1  
 Galiano Island Status: Confirmed

**Description:**

Farewell-to-spring is a summer-blooming plant with pink to rose-purple flowers, each with four petals, often with red spots.

**Habitat:**

It thrives on open warm grassy areas in the lowland zone, such as Garry oak bluffs and meadows on southwest facing slopes.

**Range:**

Farewell-to-spring is thought to range from California to southeastern Vancouver Island and the southern Gulf Islands.

**Threats:**

Destruction of habitat due to land development, and the introduction of invasive plant species which degrade the land are the major threats.

*Scope:* Low  
*Severity:* Low  
*Immediacy:* Low

**Current Status:**

Number of EOs:  
 10

EO Comments:

Spotted at 3 distinct protected areas; Bodega Ridge, Mt Sutil, Mathews Point.

Number of Protected EOs:

10 of the EO's were seen in protected areas.

Population Size:

Undetermined

Range Extent:

The southern and mid section on the Island with the possibility for a greater range exists.

Landowner Contact:

105 possible

15 visited

Viability: **Medium**

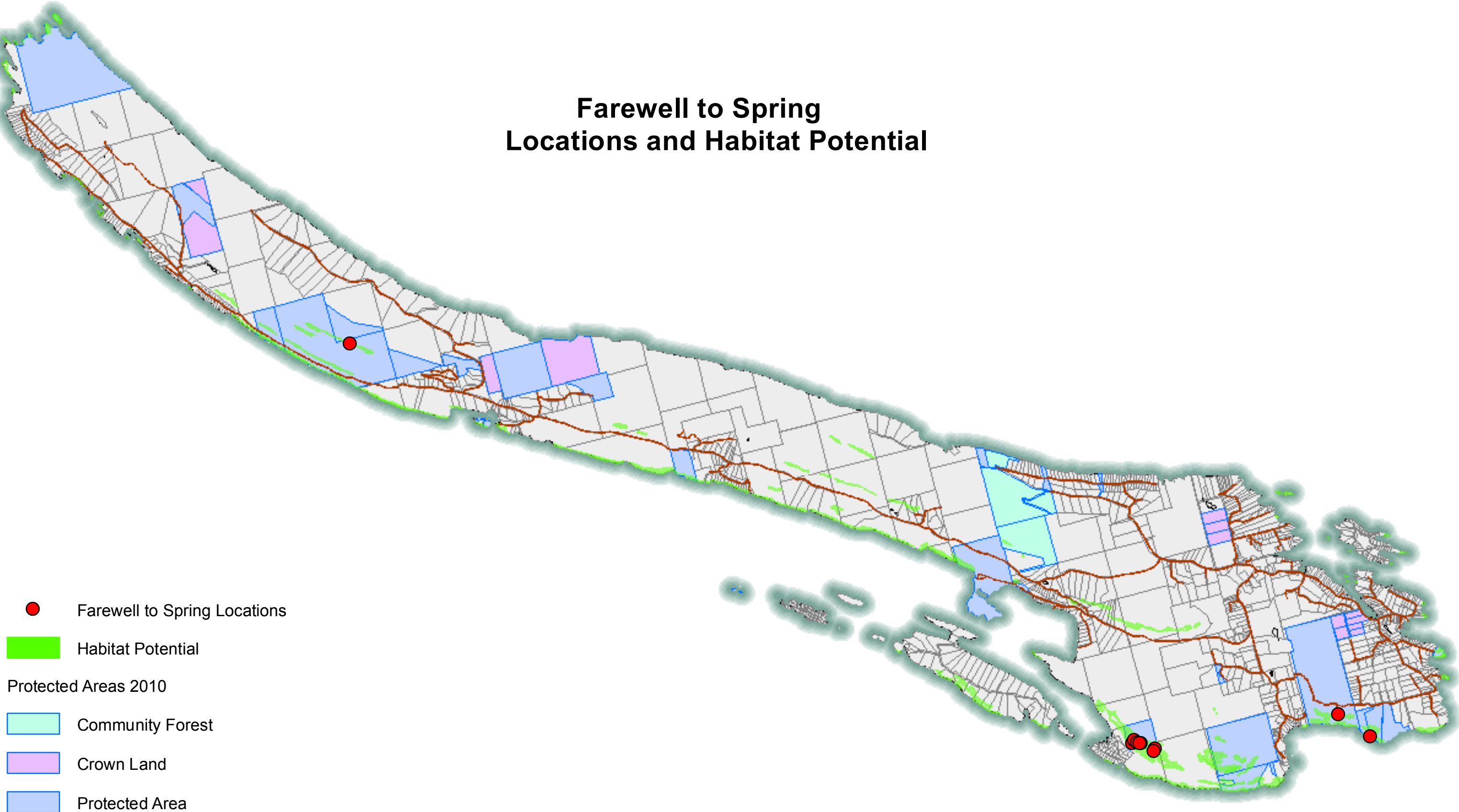
Area of potential habitat	147.89 ha
Portion of Galiano Island with potential habitat	2.45 %
Area of potential habitat with protected status	93.66 ha
Portion of potential habitat with protected status	63.33 %
Portion of Galiano Island with protected status	19.30 %

As the Farewell-to-spring occurs in Garry Oak ecosystems, and roughly half of the habitat is in protected areas, the threat of habitat destruction due to urbanization is very limited. However, even in these protected areas, Scotch Broom is a dominant threat and very prevalent. As Farewell-to-spring is very sensitive to the shading and crowding out of Scotch Broom this can be seen as the dominant threat on Galiano. So far, only Mt Sutil has a full restoration plan in progress, and other protected areas have not been fully assessed. An invasive species survey has been carried out on other protected areas and the Scotch Broom coverage is prevalent. No domestic grazing sites are known to exist where Farewell-to-spring occurs.

**Recommendations:**

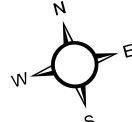
- Continue to remove invasive species around the known locations
- Increase the monitoring for this rare plant in order to get a better perspective of its range on Galiano.

# Farewell to Spring Locations and Habitat Potential



- Farewell to Spring Locations
- Habitat Potential
- Protected Areas 2010
  - Community Forest
  - Crown Land
  - Protected Area

Produced By: Galiano Conservancy Association  
Map Date: March 2011  
Scale: 1:59,000  
Projection: UTM Zone 10 NAD83



**Phantom Orchid** (*Cephalanthera austinae*)



BC: Red-Listed  
 Provincial: S2 (2000)  
 COSEWIC: Threatened (2000)  
 Global: G4 (1990)  
 Conservation Framework Priority: 2  
 Galiano Island Status: Unconfirmed

**Description:**

The Phantom Orchid is a strange and mysterious plant of the orchid family. It can be easily confused with the saprophyte Indian Pipe. It is a very unusual and easily spotted species because it lacks chlorophyll and therefore is white in stem, leaves and flower. Interestingly, the orchid requires a symbiotic relationship with a subterranean mycorrhizal fungus for nutrients instead of sunlight.

**Habitat:**

It grows in mature, dark, coniferous forests with rich soil and little undergrowth.

**Range:**

Like all plants of the endangered species list on Galiano Island, the Phantom Orchid occurs at the Northern limit range of its distribution. It is found south of the border into Idaho and California. There are currently only around 100 plants known in BC, most occurring in the Fraser Valley. There have been some sightings in the south east part of Vancouver Island.

**Threats:**

Like other at risk plants found on Galiano Island, habitat destruction due to urban development and degradation due to invasive species, mostly Scotch Broom, are the greatest concerns.

*Scope:* TBD  
*Severity:* TBD  
*Immediacy:* TBD



**Current Status:**Number of EOs:EO Comments:Number of Protected EOs:Population Size:Range Extent:Landowner Contact:

487 possible

41 visited

Viability: **Medium**

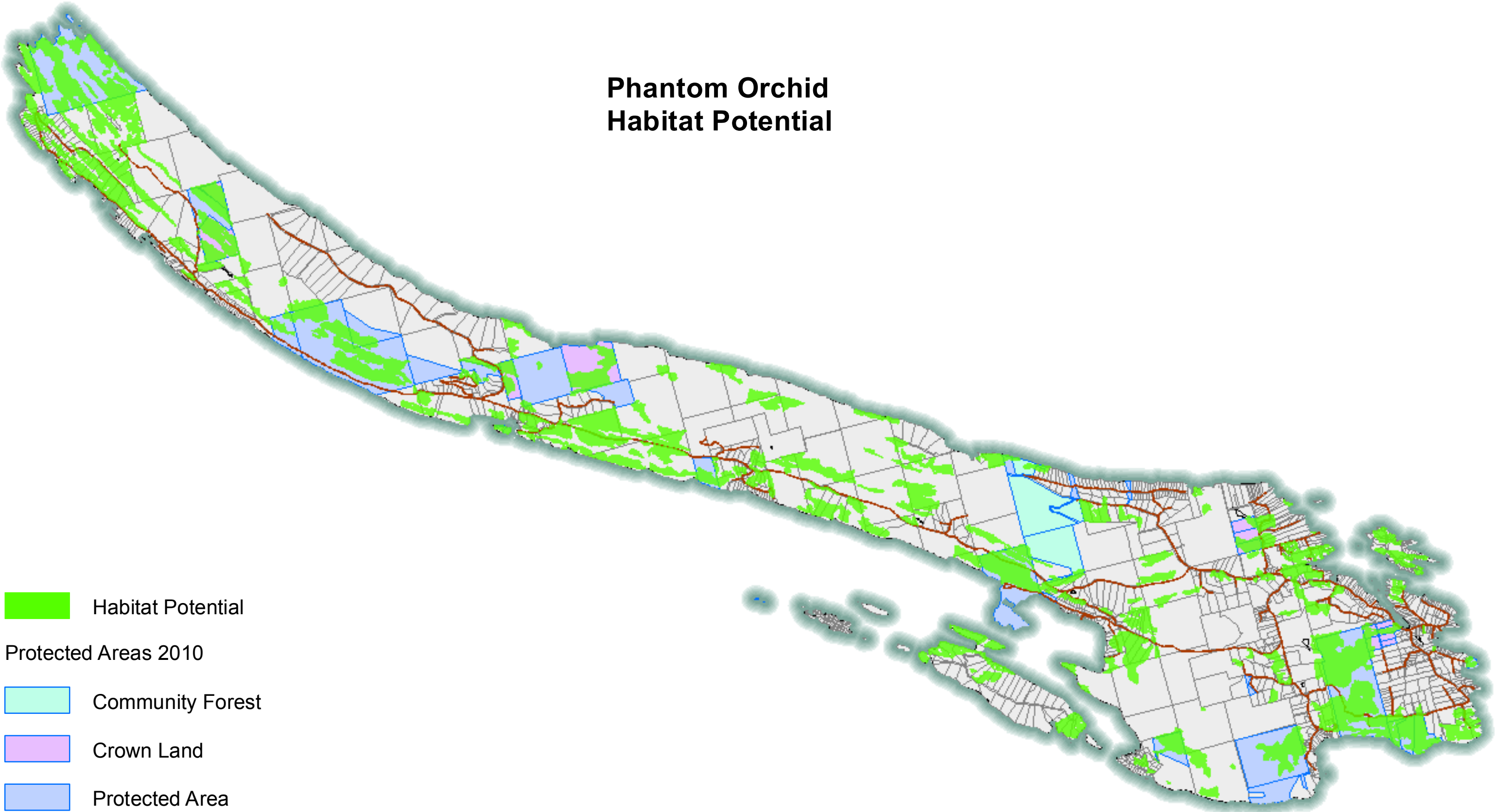
Area of potential habitat	1,123.67 ha
Portion of Galiano Island with potential habitat	18.61 %
Area of potential habitat with protected status	561.67 ha
Portion of potential habitat with protected status	50.00 %
Portion of Galiano Island with protected status	19.30 %

Due to the low urban development on Galiano, destruction of potential habitats is limited. As the habitat requires mature coniferous forest, Scotch Broom would have difficulty penetrating as it is non-degraded land. With 50% of the potential habitat in protected areas there is a good chance that when found, nearby Broom plants will be removed and maintained.

**Recommendations:**

- Continue to monitor for this plant
- Protect its potential habitats.

# Phantom Orchid Habitat Potential



 Habitat Potential

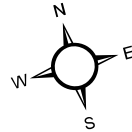
Protected Areas 2010

 Community Forest

 Crown Land

 Protected Area

Produced By: Galiano Conservancy Association  
Map Date: March 2011  
Scale: 1:59,000  
Projection: UTM Zone 10 NAD83



**Slender Popcornflower** (*Plagiobothrys Tenellus*)



BC: Red-Listed  
 Provincial: S1 (2008)  
 COSEWIC: Threatened (2008)  
 Global: G4G5 (1988)  
 Conservation Framework Priority: 1  
 Galiano Island Status: Unconfirmed

**Description:**

The Slender Popcornflower is a slim plant, with a basal rosette of leaves and a single or sometimes complicated arrangement of hairy branched stems up to 25 cm tall. The small white flowers are tubular with five lobes.

**Habitat:**

Associated with Garry oak ecosystems, this annual herb grows on grassy southwest facing slopes and coastal bluffs, often on exposed gravelly soils or rocks.

**Range:**

The British Columbia population occurs at the northern extent of its geographic range in BC, the species ranges south from the east side of the Cascade Mountains into southern California.

**Threats:**

This species is particularly vulnerable to invasive plant encroachment, and like all species within Garry oak ecosystems, habitat loss and degradation through housing development is a major concern.

*Scope:* TBD  
*Severity:* TBD  
*Immediacy:* TBD

**Current Status:**Number of EOs:EO Comments:Number of Protected EOs:Population Size:Range Extent:Landowner Contact:

105 possible

15 visited

Viability: **Medium**

Area of potential habitat	147.89 ha
Portion of Galiano Island with potential habitat	2.45 %
Area of potential habitat with protected status	93.66 ha
Portion of potential habitat with protected status	63.33 %
Portion of Galiano Island with protected status	19.30 %

As the Slender Popcornflower occurs in Garry Oak ecosystems, and more than half of the habitat is in protected areas, the threat of habitat destruction due to urbanization is very limited. However, even in these protected areas, Scotch Broom is a dominant threat and very prevalent. As Slender Popcornflower is very sensitive to the shading and crowding out of Scotch Broom this can be seen as the dominant threat on Galiano. So far, only Mt Sutil has a full restoration plan in progress, and other protected areas have not been fully assessed. An invasive species survey has been carried out on other protected areas and the Scotch Broom coverage is abundant (especially on bodega ridge where a historic sighting has occurred).

**Historical Data:**



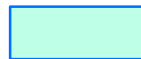


2 populations were sighted: On Mount Sutil in 1980, and Bodege Ridge in 1998. The Mount Sutil population has not been seen since 1998 as a 2004 survey and recent surveys failed to find one plant. The 1998 population on Bodega Ridge contained 400-500 plants in 3 separate patches. In 2004 and 2010, surveys were done which revealed no findings.

Of the total seven known locations in Canada, Galiano holds the largest number of plants.

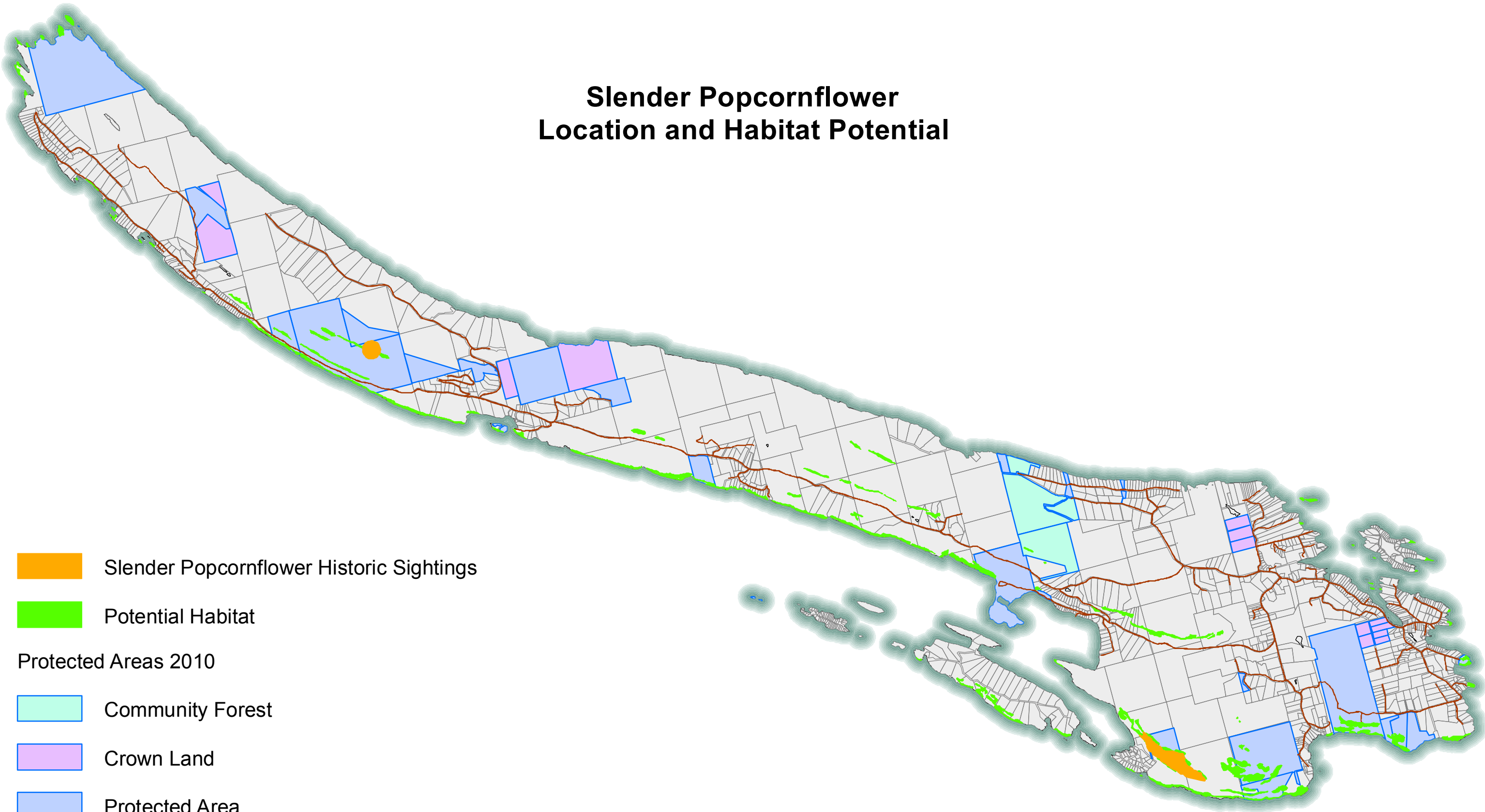
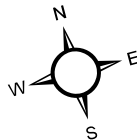
**Recommendations:**

- Continue to do surveys as population fluctuations are not uncommon for this species.
- Protect and restore the two locations with specific attention to removal of invasive species, predominantly Scotch Broom as it is the main threat to this species in the protected areas.

# Slender Popcornflower Location and Habitat Potential

-  Slender Popcornflower Historic Sightings
-  Potential Habitat
- Protected Areas 2010
  -  Community Forest
  -  Crown Land
  -  Protected Area

Produced By: Galiano Conservancy Association  
Map Date: March 2011  
Scale: 1:59,000  
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**White Meconella** (*Meconella oregana*)



BC: Red-Listed  
 Provincial: S1 (2005)  
 COSEWIC: Endangered (2005)  
 Global: G2G3 (2004)  
 Conservation Framework Priority: 1  
 Galiano Island Status: Unconfirmed

**Description:**

White Meconella is a small annual plant with pale bluish green/white flowers. Resembling the California poppy, it grows to 16 cm and blooms usually in March to early April.

**Habitat:**

White Meconella grows at low elevations on the specialized habitat of open south-facing rocky or grassy slopes on extremely shallow soils over bedrock with slight early-season seepage.

**Range:**

The Canadian range is small and contained within the limits of Garry oak ecosystems. In the United States this plant is found in scattered locations in Washington, Oregon and California.

**Threats:**

Scotch Broom and other invasive species play a dominant role in the degradation of this species habitat, while urban development destroys the habitat entirely.

*Scope:* TBD  
*Severity:* TBD  
*Immediacy:* TBD

**Current Status:**

Number of EOs:

EO Comments:

Number of Protected EOs:

Population Size:

Range Extent:

Landowner Contact:

105 possible

15 visited

Viability: **Medium**

Area of potential habitat	147.89 ha
Portion of Galiano Island with potential habitat	2.45 %
Area of potential habitat with protected status	93.66 ha
Portion of potential habitat with protected status	63.33 %
Portion of Galiano Island with protected status	19.30 %

As the White Meconella occurs in Garry Oak ecosystems, and more than half of the habitat is in protected areas, the threat of habitat destruction due to urbanization is very limited. However, even in these protected areas, Scotch Broom is a dominant threat and very prevalent. As White Meconella is very sensitive to the shading and crowding out of Scotch Broom this can be seen as the dominant threat on Galiano. So far, only Mt Sutil has a full restoration plan in progress, and other protected areas have not been fully assessed. An invasive species survey has been carried out on other protected areas and the Scotch Broom coverage is abundant. No domestic grazing sites are known to exist where California Hedge Parsley occurs.



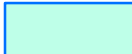
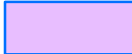
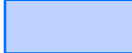
#### **Historical Data:**

In 1980 a population was found on Mount Sutil. However, in subsequent years (2004-present) the population has not been relocated.

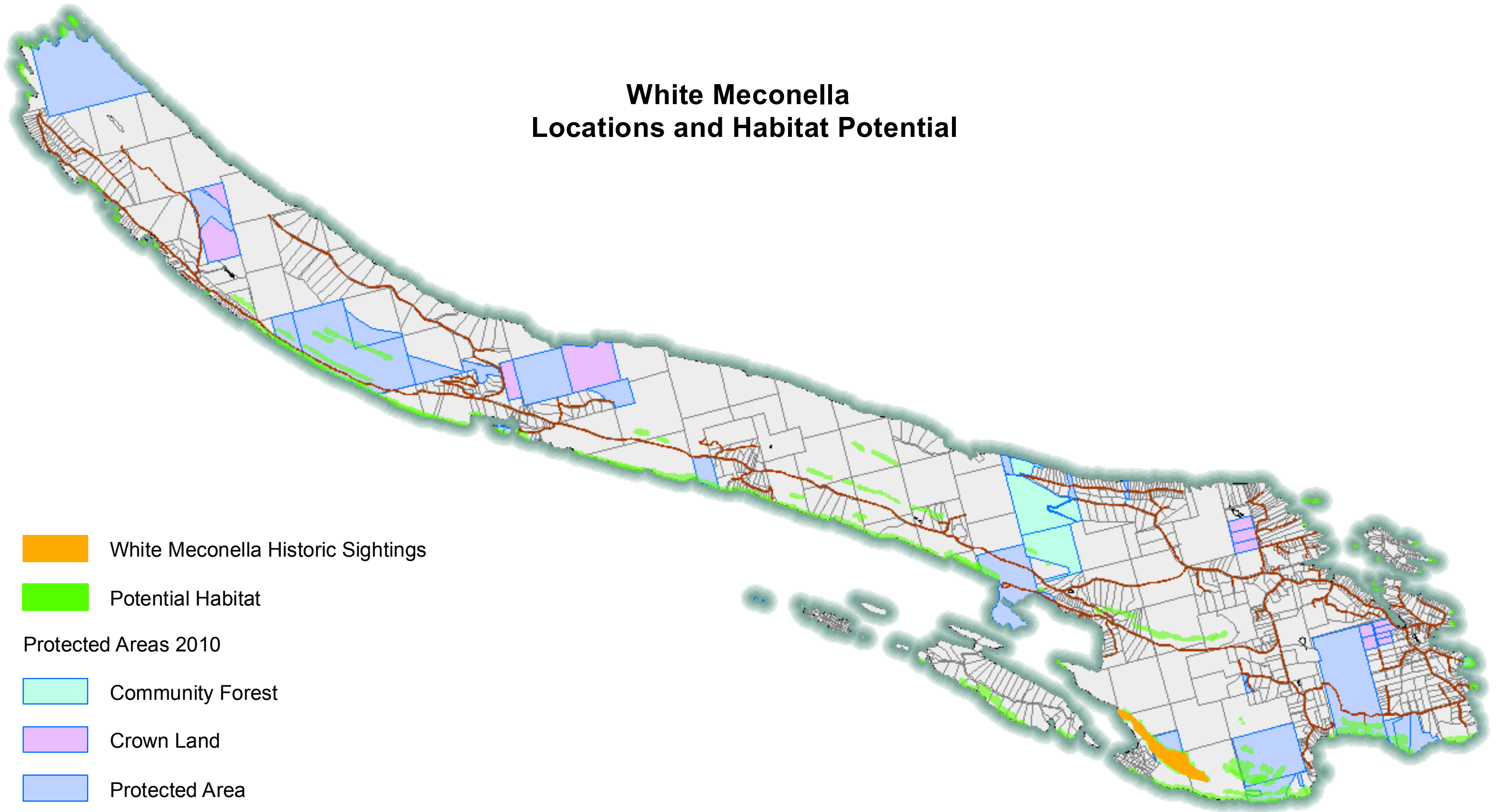
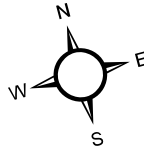
#### **Recommendations:**

- Continue to search for this vascular plant in the historically sighted area.
- Restore Mount Sutil by removal of invasive species, specifically Scotch Broom.

# White Meconella Locations and Habitat Potential

-  White Meconella Historic Sightings
-  Potential Habitat
- Protected Areas 2010
  -  Community Forest
  -  Crown Land
  -  Protected Area

Produced By: Galiano Conservancy Association  
Map Date: March 2011  
Scale: 1:59,000  
Projection: UTM Zone 10 NAD83





### Scalepod (Idaho Scapigera)



BC: Red-Listed  
 Provincial: S2 (2000)  
 COSEWIC: Not-Listed  
 Global: G5 (1987)  
 Conservation Framework Priority: 2  
 Galiano Island Status: Confirmed

#### **Description:**

Scalepod is a small, glabrous annual with many leafless stems that are up to 10 cm high. The numerous basal leaves have a long, slender petiole and narrowly elliptic blades that are 5-15mm long with entire margins or two shallow lobes near the base.

#### **Habitat:**

It grows generally in mountains and foothills including moist seepages to dry rocky slopes in the lowland, steppe and montane zones.

#### **Range:**

It is native to western North America from British Columbia to California to Montana

#### **Threats:**

Destruction of habitat due to urban development, and degradation due to increasing spread of invasive plants.

*Scope:* Moderate  
*Severity:* Moderate  
*Immediacy:* Moderate

**Current Status:**Number of EOs:

6

EO Comments:

All 6 EO's were seen under a 100m deviation, on Mt Sutil's southern face on a rocky bluff.

Number of Protected EOs:

All of the EO's were seen in a protected area.

Population Size:

Undetermined

Range Extent:

Mt Sutil

Landowner Contact:

131 possible

19 visited

Viability: **Low**

Area of potential habitat	189.89 ha
Portion of Galiano Island with potential habitat	3.15 %
Area of potential habitat with protected status	109.32 ha
Portion of potential habitat with protected status	57.57 %
Portion of Galiano Island with protected status	19.30 %

Though development is low on Galiano and thus not destroying potential habitat, Scotch Broom is of great concern for this annual. Even in the larger protected areas, Scotch Broom is the dominant shrub and grows on much of the Scalepod's habitat. As it is a small and non-competitive plant, its sensitivity to Scotch Broom is very high.

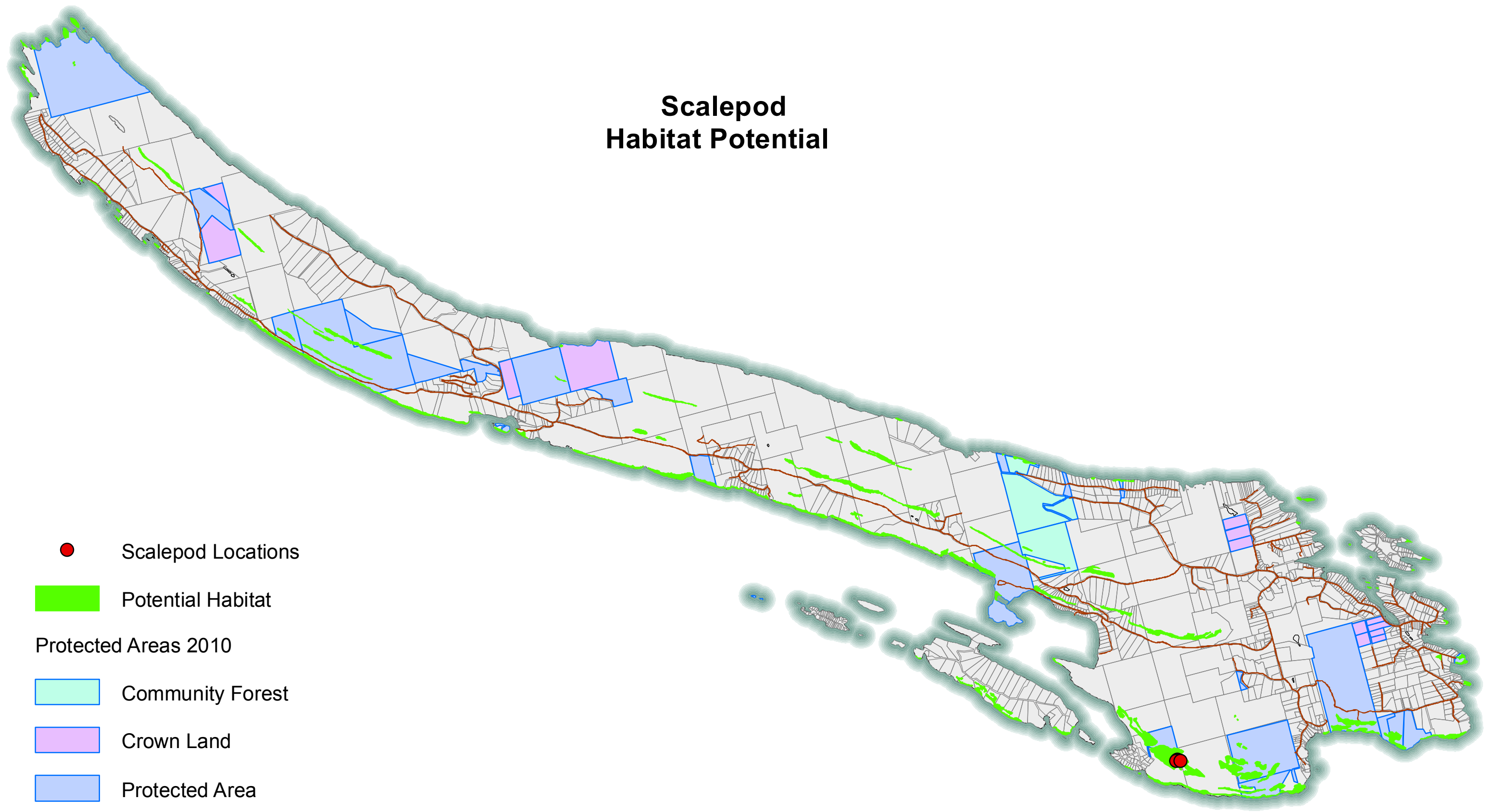
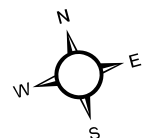
**Recommendations:**

- The removal of Scotch Broom at the site is of highest concern.
- Landowner contact is required for the other 5 EO's that occur just south of the protected area (Mt Sutil), on one private property.

# Scalepod Habitat Potential

- Scalepod Locations
- Potential Habitat
- Protected Areas 2010
  - Community Forest
  - Crown Land
  - Protected Area

Produced By: Galiano Conservancy Association  
Map Date: March 2011  
Scale: 1:59,000  
Projection: UTM Zone 10 NAD83



### Twisted Oak Moss (*Suntrichia laevipia*)



BC: Blue-Listed

Provincial: S2S3 (2007)

COSEWIC: Special Concern (2004)

Global: GNR

Conservation Framework Priority: 2

Galiano Island Status: Unconfirmed

#### **Description:**

Twisted Oak Moss is a small moss species that grows in clumps on tree bark, primarily oak bark. This species is easily recognized by its tiny size (the stems are no longer than 5 mm). However, the main stems occasionally protrude from the plant. The leaves, which are generally shaped like spatulas, rounded at both ends, and end in bristle-like appendages (awns). In Canada, they rarely measure more than 2 mm. When dry, they are twisted and, when wet, they spread somewhat and curl slightly.

#### **Habitat:**

Twisted Oak Moss only grows on tree bark, particularly on the bark of the Garry Oak. Although it is commonly found on tree trunks, it can also be found at the base and on the upper branches. The majority of the populations occur on trees in open habitats where the summers are dry and the temperature is mild to very hot, and the winters are humid and the temperature is cool to cold. Twisted Oak Moss rarely grows in combination with other mosses or lichens.

#### **Range:**

Twisted Oak Moss occurs, albeit sporadically, all around the world. This species can be found in Southern South America, Europe, Asia, North Africa and Western North America. In North America, it occurs along the coast of British Columbia, and further inland in the state of Washington, Oregon and California. In Canada, Twisted Oak Moss occurs only along the coast of British Columbia, more specifically in the Garry Oak habitats on Vancouver Island, from the southern tip of the island to the Nanaimo area.

**Threats:**

The main threat to the Twisted Oak Moss is the disappearance of old Garry Oaks, which would lead to the eradication of most Twisted Oak Moss populations in Canada. However, the absence of young Garry Oaks to replace older trees poses a greater threat to this species; on many private properties, oak shoots are often removed or they are grazed by feral sheep and goats, as well as mule deer.

*Scope:* TBD

*Severity:* TBD

*Immediacy:* TBD

**Current Status:**

Number of EOs:

EO Comments:

Number of Protected EOs:

Population Size:

Range Extent:

Landowner Contact:

105 possible

15 visited

Viability: **Medium**

Area of potential habitat	147.89 ha
Portion of Galiano Island with potential habitat	2.45 %
Area of potential habitat with protected status	93.66 ha
Portion of protected areas with potential habitat	63.33 %
Portion of Galiano Island with protected status	19.30 %

As the Twisted Oak Moss is dependant on Garry Oak ecosystems, and more than half of the habitat is in protected areas, the threat of habitat destruction due to urbanization is very limited. However, even in these protected areas, Scotch Broom is a dominant threat and very prevalent. Although Twisted Oak Moss is not very sensitive to the shading and crowding out Scotch Broom directly, oak saplings will be out competed and thus negatively impact Twisted Oak Moss. So far, only Mt Sutil has a full restoration plan in progress, and other protected areas have not been fully assessed. An invasive species survey has been carried out on other protected areas and the Scotch Broom coverage is abundant.



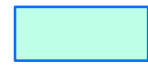
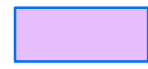

**Historical Data:**

In 2002, at Mathews Point 8 small tufts found over .06m on an exposed Garry Oak root were observed.

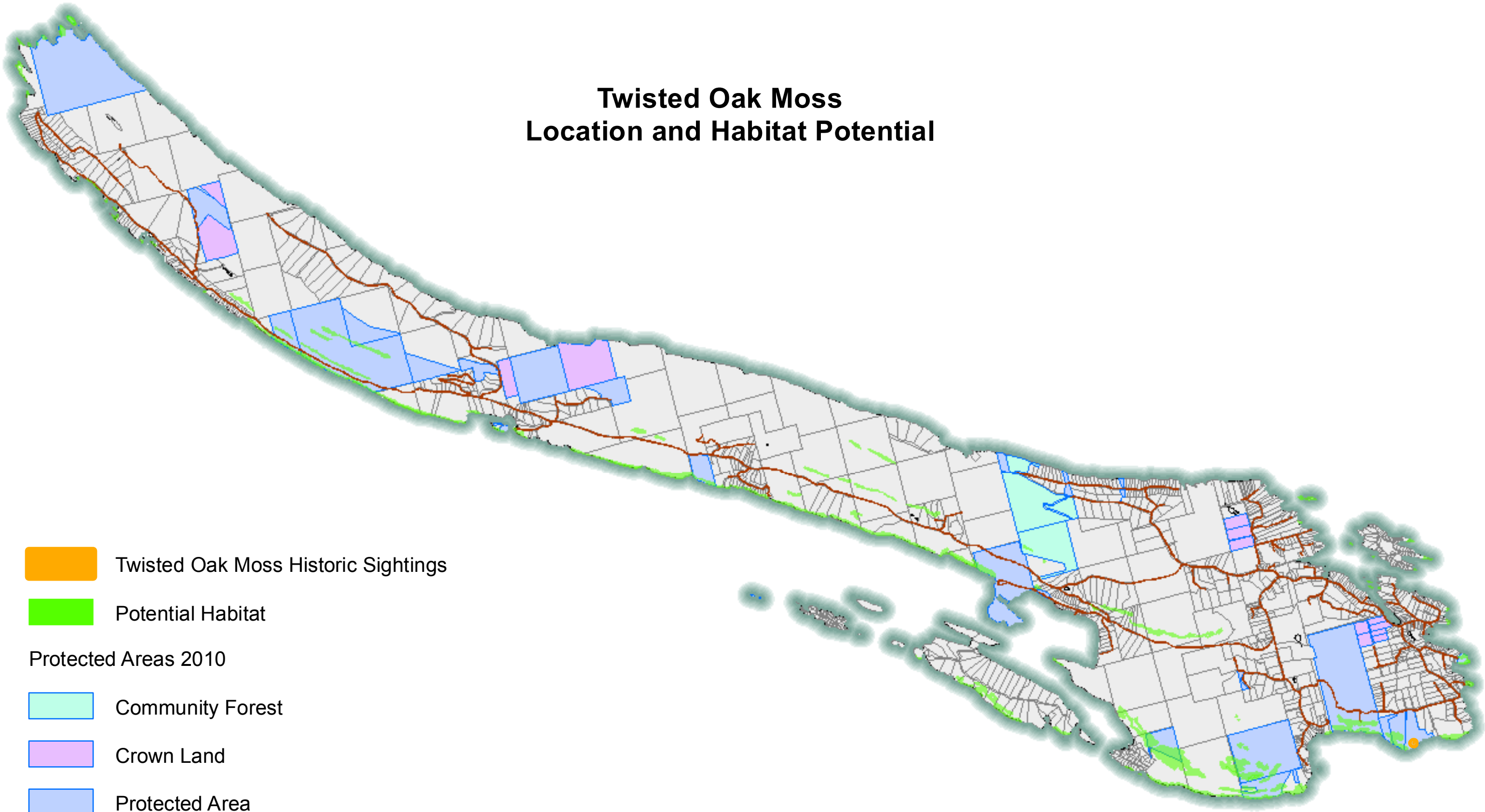
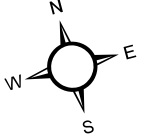
**Recommendations:**

- Monitor for the moss at known potential sites.
- Provide materials for landowners which show ways in which to preserve the Garry Oak habitats which the moss depends on.
- As Mathews Point has the only known historical sighting, restoration and protection from Scotch Broom and other habitat degraders is recommended.

# Twisted Oak Moss Location and Habitat Potential

-  Twisted Oak Moss Historic Sightings
-  Potential Habitat
- Protected Areas 2010
  -  Community Forest
  -  Crown Land
  -  Protected Area

Produced By: Galiano Conservancy Association  
Map Date: March 2011  
Scale: 1:59,000  
Projection: UTM Zone 10 NAD83



**Banded Cord-moss** (*Entosthodon fascicularis*)



BC: Blue-listed  
 Provincial: S2S3 (2007)  
 COSEWIC: Special Concern (2005)  
 Global: G4G5 (2001)  
 Conservation Framework Priority: 2  
 Galiano Island Status: Unconfirmed

**Description:**

Banded Cord-moss is a small pale green to yellow-green moss that grows 2 to 4mm high. It occurs in small patches on seasonally wet soil. The leaves are crowded at the summit of the stem and up to 5 mm in length. An inconspicuous moss, Banded Cord-moss is often hidden among litter and other mosses.

**Habitat:**

Banded Cord-moss usually grows on soil, sometimes in leaf litter with other mosses or around the base of plants. The species is found in open to semi-shaded habitat with rock outcrops and seasonally wet areas, such as vernal pools.

**Range:**

It is relatively rare in North America, found only in British Columbia, Washington, Idaho, and Oregon. Fifteen of the sixteen Canadian populations of *Entosthodon fascicularis* are found within the range of the nationally threatened Garry oak ecosystem

**Threats:**

The primary threats to Banded Cord-moss include urban or highway development, hiking, grazing by wildfowl, and usage of some areas by dogs. However, most of the reported populations are in relatively protected areas or isolated sites that are probably not affected by the majority of these factors. A further threat may be climate change and long periods of drought.

*Scope:* TBD  
*Severity:* TBD  
*Immediacy:* TBD

**Current Status:**

Number of EOs:

EO Comments:



Number of Protected EOs:

Population Size:

Range Extent:

Landowner Contact:

105 possible

15 visited

Viability: **Medium**

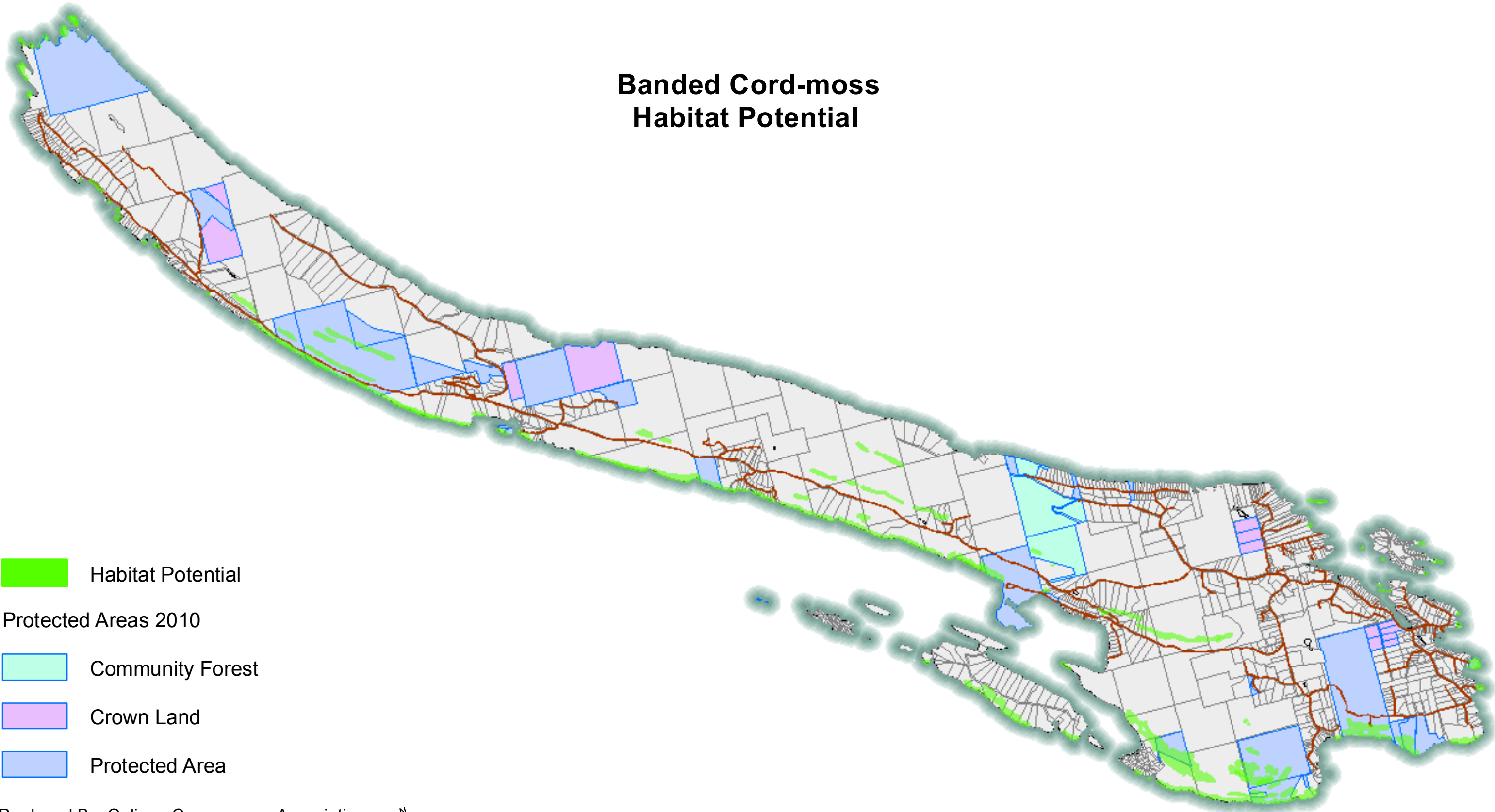
Area of potential habitat	147.89 ha
Portion of Galiano Island with potential habitat	2.45 %
Area of potential habitat with protected status	93.66 ha
Portion of potential habitat with protected status	63.33 %
Portion of Galiano Island with protected status	19.30 %

As the Banded Cord-moss occurs in Garry Oak ecosystems, and more than half of the habitat is in protected areas, the main threat of habitat destruction due to urbanization is very limited. However, even in these protected areas, hiking and usage by dogs may be the dominant threat. Although the moss would be sensitive to such disturbances, the likelihood of actual contact is minimal. A further threat is Scotch Broom which crowds and shades out the plants that Banded Cord-moss may grow on. An invasive species survey has been carried out on other protected areas and the Scotch Broom coverage is abundant.

**Recommendations:**

- Hire a specialist to search for this rare moss and establish if the species is found on Galiano Island.

# Banded Cord-moss Habitat Potential



 Habitat Potential

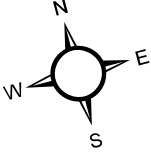
Protected Areas 2010

 Community Forest

 Crown Land

 Protected Area

Produced By: Galiano Conservancy Association  
Map Date: March 2011  
Scale: 1:59,000  
Projection: UTM Zone 10 NAD83



**Rigid Apple Moss** (*Bartramia stricta*)

BC: Red-Listed

Provincial: S2 (2008)

COSEWIC: Endangered (2009)

Global: GU (2006)

Conservation Framework Priority: 2

Galiano Island Status: Unconfirmed

**Description:**

Rigid Apple Moss is a small, pale yellow-green moss, 1 to 3 cm high. It is characterized by ribbed globular capsules known as sporangium or spore-holding sacks. The leaves are straight and erect when wet or dry. It resembles the cone shape of a pencil tip.

**Habitat:**

In BC, this moss is found in shallow soil, rock crevices, ledges, or vertical rock faces in dry, south-facing grassy slopes with rocky outcrops.

**Range:**

It has been found in North America, Europe, Asia, Africa, and Australia. It is rare in North America, reported from California, New Mexico, Texas, and British Columbia.

In British Columbia, it has been found on Nanoose Hill near Nanaimo, on Lasqueti Island, and on two sites southwest of Victoria.

**Threats:**

The major threat to the Rigid Apple Moss is urban development, which has altered or destroyed suitable habitat.

*Scope:* TBD

*Severity:* TBD

*Immediacy:* TBD

**Current Status:**

Number of EOs:

EO Comments:

Number of Protected EOs:

Population Size:

Range Extent:

Landowner Contact:

105 possible

15 visited

Viability: **High**

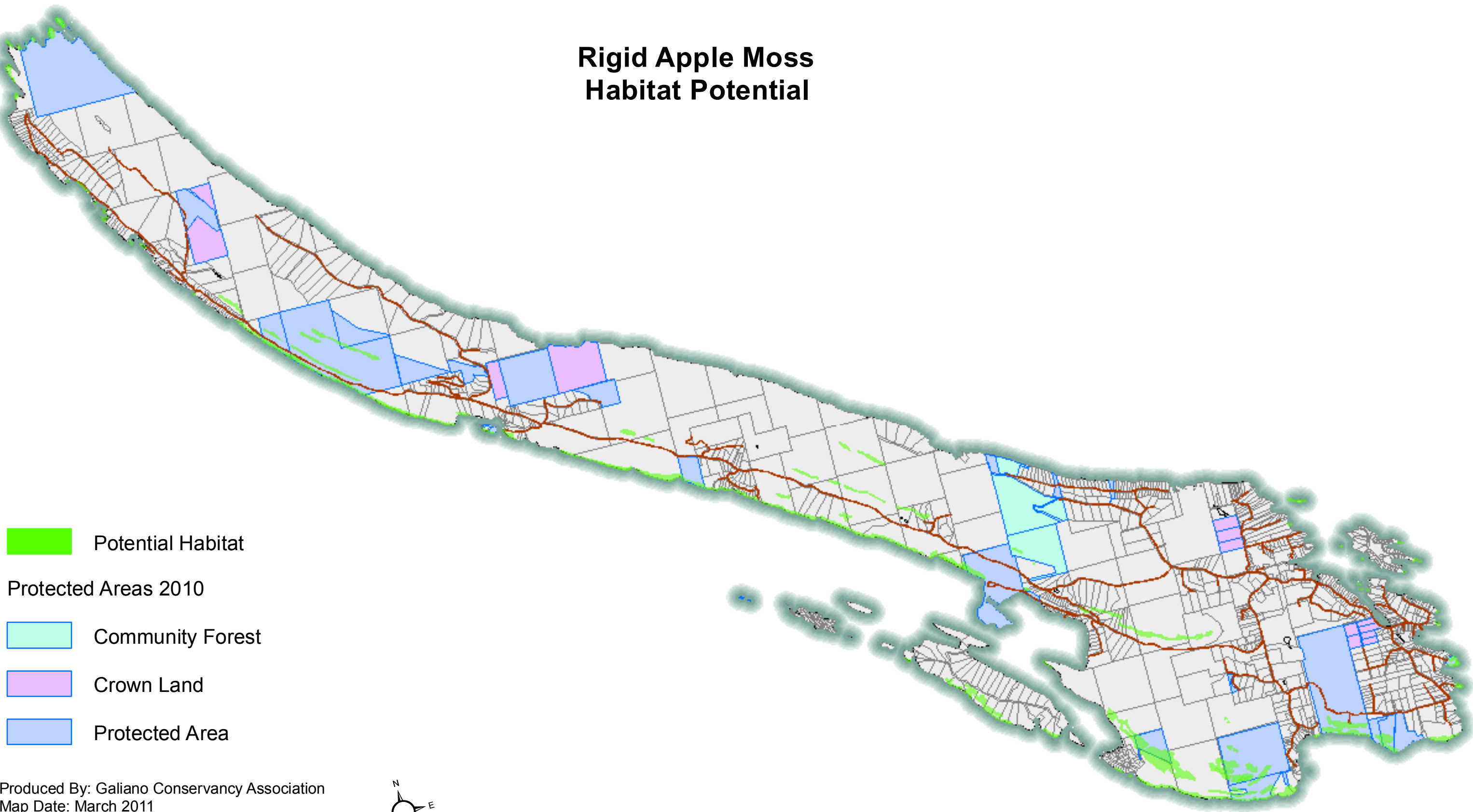
Area of potential habitat	147.89 ha
Portion of Galiano Island with potential habitat	2.45 %
Area of potential habitat with protected status	93.66 ha
Portion of potential habitat with protected status	63.33 %
Portion of Galiano Island with protected status	19.30 %

As the Rigid Apple Moss mainly occurs in Garry Oak ecosystems, and more than half of the habitat is in protected areas, the main threat of habitat destruction due to urbanization is very limited..

**Recommendations:**

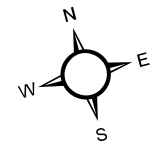
- Hire a specialist to search for this rare moss and establish if the species is found on Galiano Island.

# Rigid Apple Moss Habitat Potential



-  Potential Habitat
- Protected Areas 2010
  -  Community Forest
  -  Crown Land
  -  Protected Area

Produced By: Galiano Conservancy Association  
Map Date: March 2011  
Scale: 1:59,000  
Projection: UTM Zone 10 NAD83



**Blue Dasher** (*Pachydiplax longipennis*)

BC: Blue-Listed  
 Provincial Listing: S3S4 (2004)  
 COSEWIC: Not listed  
 Global: G5 (2008)  
 Conservation Framework Priority: 4  
 Galiano Island Status: Confirmed

**Description:**

The Blue Dasher is a small dark-blue dragonfly with a white face, metallic green eyes, and a black and yellow striped thorax. The outer halves of the wings are often tinted brown. Blue Dashers are enigmatic and rarely still; male Blue Dasher's are constantly patrolling their territories and dash from perch to perch to challenge other dragonflies as they look for females with which to mate.

**Habitat:**

Blue Dashers are found in a variety of wetlands with abundant aquatic and riparian vegetation, favouring floating plants.

**Range:**

It is found from southern British Columbia east to Ontario, extending south through the U.S. from southern California east to Florida. It also occurs in the Bahamas.

**Threats:**

The loss of wetlands through drainage or filling is the largest threat. Invasive species degrading the riparian zone is also of concern, as well as introduced fish through private landowners.

*Scope:* Low  
*Severity:* Low  
*Immediacy:* Low

**Current Status:**Number of EOs:

19 unique wetlands harbour the Blue Dasher.

EO Comments:

There are diverse habitats with proximity to roads and private lots. Wetlands are centered inland and are deep with present floating vegetation as compared to wetlands where the Blue Dasher is not present.

Number of Protected EOs:

There are 4 wetlands that are in protected areas.

Population Size:

Undetermined

Range Extent:

Entire Island

Landowner Contact:

115 possible

25 visited

Viability: **Medium**

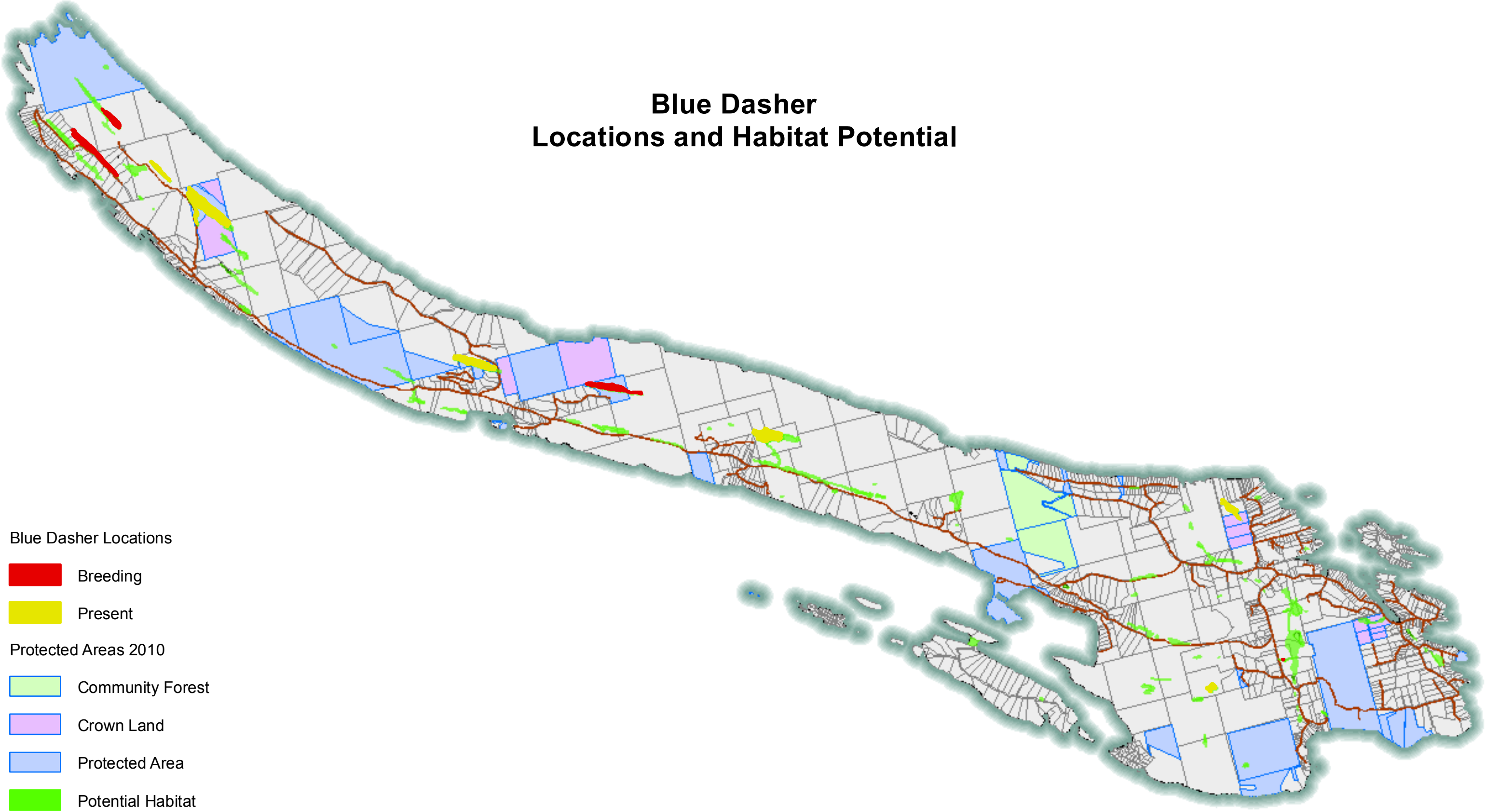
Area of potential habitat	128.79 ha
Portion of Galiano Island with potential habitat	2.13 %
Area of potential habitat with protected status	36.45 ha
Portion potential habitat with protected status	28.30 %
Portion of Galiano Island with protected status	19.30 %

The Blue Dasher is very sensitive to the possible threats. Fortunately, the wetlands where the species are found do not have draining or filling being done. Invasive species are present at a number of wetlands harbouring the Blue Dasher (Scotch Broom, Reed Canary Grass, English Holly) but are not present in significant abundance in any location. Of more important concern is the land privately owned, as there is a potential for the introduction of fish, as well as other invasive species due to landowners simply being uninformed. Also, those wetlands harbouring significant numbers of the Blue Dasher are contained in protected areas.

**Recommendations:**

- A number of the wetlands are on private properties, thus continued contact and an agreement to not degrade the wetland would prove effective.
- As a number of the less viable wetlands have a number of invasive plant species growing around them, removal of these species would halt the degradation.

# Blue Dasher Locations and Habitat Potential



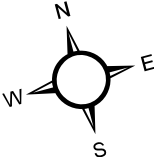
Blue Dasher Locations

-  Breeding
-  Present

Protected Areas 2010

-  Community Forest
-  Crown Land
-  Protected Area
-  Potential Habitat

Produced By: Galiano Conservancy Association  
Map Date: March 2011  
Scale: 1:59,000  
Projection: UTM Zone 10 NAD83





### **Propertius Duskywing** (*Erynnis propertius*)



BC: Blue-Listed  
 Provincial: S2S3 (2006)  
 COSEWIC: Not-Listed  
 Global: G5 (2009)  
 Conservation Framework Priority: 2  
 Galiano Island Status: Confirmed

#### **Description:**

This rare butterfly is black and grey speckled with white spots on the forewing and hooked antennae. Oak leaves are the exclusive food plant for the caterpillars, and the pupae are found in the leaf litter below. Food plant sources for the butterfly include the nectar from several Garry oak meadow flowers, including camas, vetch and Hooker's onion, and therefore the survival of this species depends on the preservation of large Garry oak woodlands.

#### **Habitat:**

Hill tops and forest edges in Garry oak or mixed woodland ecosystems from sea-level to middle elevations.

#### **Range:**

Galiano Island is near the northern limit of the Propertius Duskywing butterflies, which stretch as far south as Baja California.

#### **Threats:**

Any threat to Garry Oak woodlands, such as urban development encroachment and degradation of natural environments through invasive species are threats to this species.

*Scope:* High  
*Severity:* Moderate  
*Immediacy:* Moderate

#### **Current Status:**

##### Number of EOs:

32

##### EO Comments:

All sightings were divided into 4 areas; Bodega Ridge, Mt Galiano, Mt Sutil, Mathews Point. Each place has either partial or restored Garry oak meadows where the butterfly was spotted.

Number of Protected EOs:

All of the EO's were seen in a protected area.

Population Size:

Undetermined

Range Extent:

South island holds 3 of the locations and mid island has one location. Potential exists for other locations across the island.

Landowner Contact:

105 possible

15 visited

Viability: **Medium**

Area of potential habitat	147.89 ha
Portion of Galiano Island with potential habitat	2.45 %
Area of potential habitat with protected status	93.66 ha
Portion of potential habitat with protected status	63.33 %
Portion of Galiano Island with protected status	19.30 %

As the Propertius Duskywing occurs in Garry Oak ecosystems, and roughly half of the habitat is in protected areas, the threat of habitat destruction due to urbanization is very limited.

However, even in these protected areas, Scotch Broom is a dominant threat and very prevalent. As the Propertius Duskywing is very sensitive to the shading and crowding out of Scotch Broom (due to it killing the plants that it feeds on) this can be seen as the dominant threat on Galiano. No domestic grazing sites are known to exist where Propertius Duskywing occurs, nor are there any development projects.

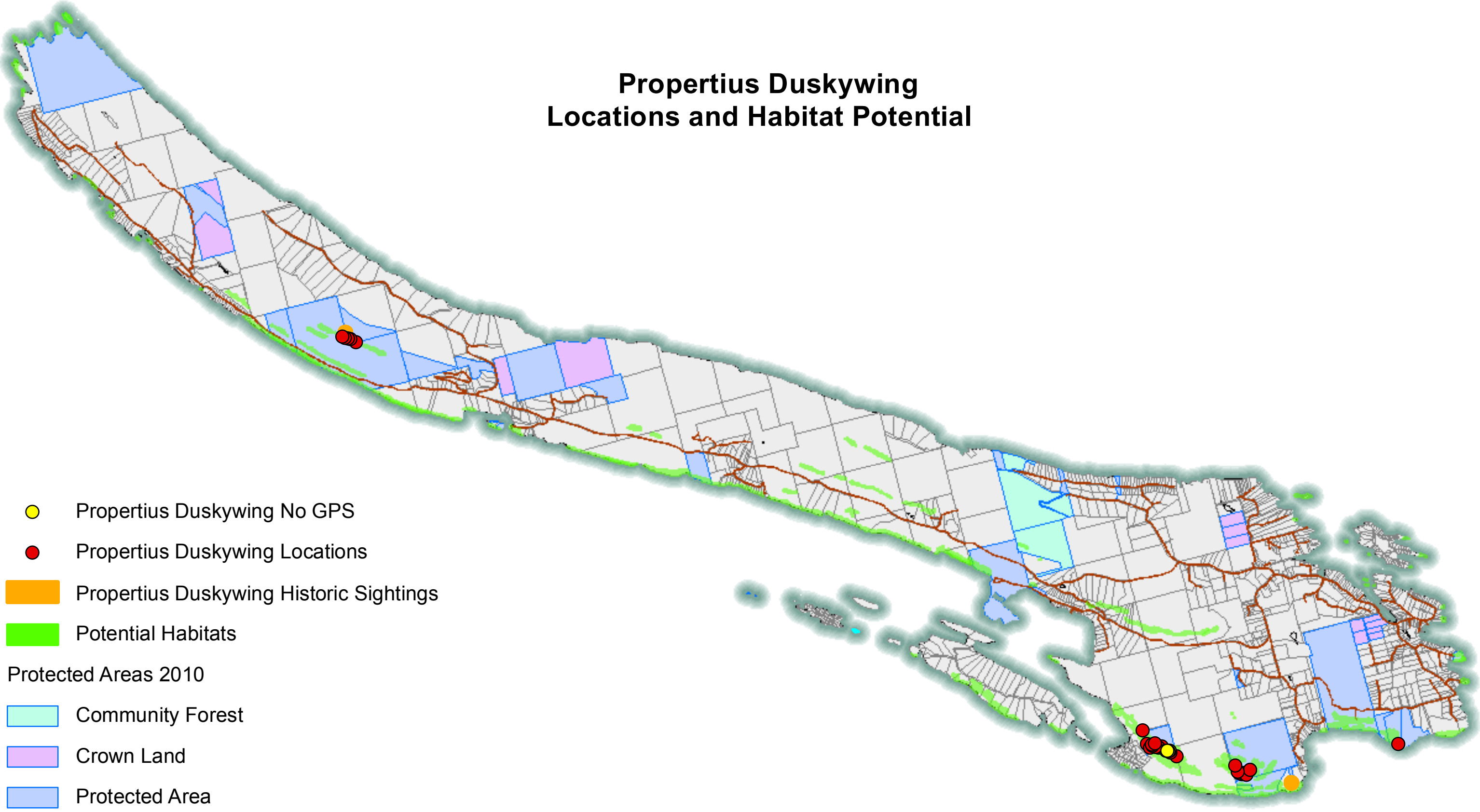
**Historical Data:**

In 1995 both males and females were spotted. 2 females were seen on the southwest hill of Bodega Ridge. 6 males and 2 females were spotted along the last 200m of Active Pass Road.

**Recommendations:**

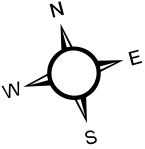
- Removal of Scotch Broom at all of the sites where Propertius Duskywing was spotted is of the highest priority. Although each area is a protected area, the pervasiveness of Broom differs from site to site, but all of them do have a large percentage of covering.

# Propertius Duskywing Locations and Habitat Potential



- Propertius Duskywing No GPS
- Propertius Duskywing Locations
- Propertius Duskywing Historic Sightings
- Potential Habitats
- Protected Areas 2010
  - Community Forest
  - Crown Land
  - Protected Area

Produced By: Galiano Conservancy Association  
Map Date: March 2011  
Scale: 1:59,000  
Projection: UTM Zone 10 NAD83



**Western Pondhawk** (*Erythemis collocata*)



BC: Blue-Listed  
 Provincial: S3 (2004)  
 COSEWIC: Not-Listed  
 Global: G5 (2000)  
 Conservation Framework Priority: 2  
 Galiano Island Status: Confirmed

**Description:**

The Western Pondhawk is a dragonfly similar in appearance to the Blue Dasher but larger, with a green face and dark-blue eyes. Another difference is the flight pattern; the Pondhawk will perch on the ground or on floating vegetation while the Blue Dasher flies higher up in the air. It is a medium-sized species that typically hunts, or defends territories, around the edges of ponds and lakes.

**Habitat:**

They are found in a variety of wetlands with abundant aquatic and riparian vegetation, favouring floating plants.

**Range:**

This species is found from southern British Columbia east to Alberta, extending south to southern California.

**Threats:**

Loss of wetland and riparian areas due to development are the greatest threat. Invasive species such as Reed Canary Grass degrade the habitat.

*Scope:* Low  
*Severity:* Low  
*Immediacy:* Low

**Current Status:**

Number of EOs:

6

EO Comments:

Found at the same northern wetlands as the Blue Dasher. No species were seen at the southern end of the island.

Number of Protected EOs:

2 EO's were found in protected areas

Population Size:

Undetermined

Range Extent:

Mid island to the northern tip.

Landowner Contact:

115 possible

25 visited

Viability: **Medium**

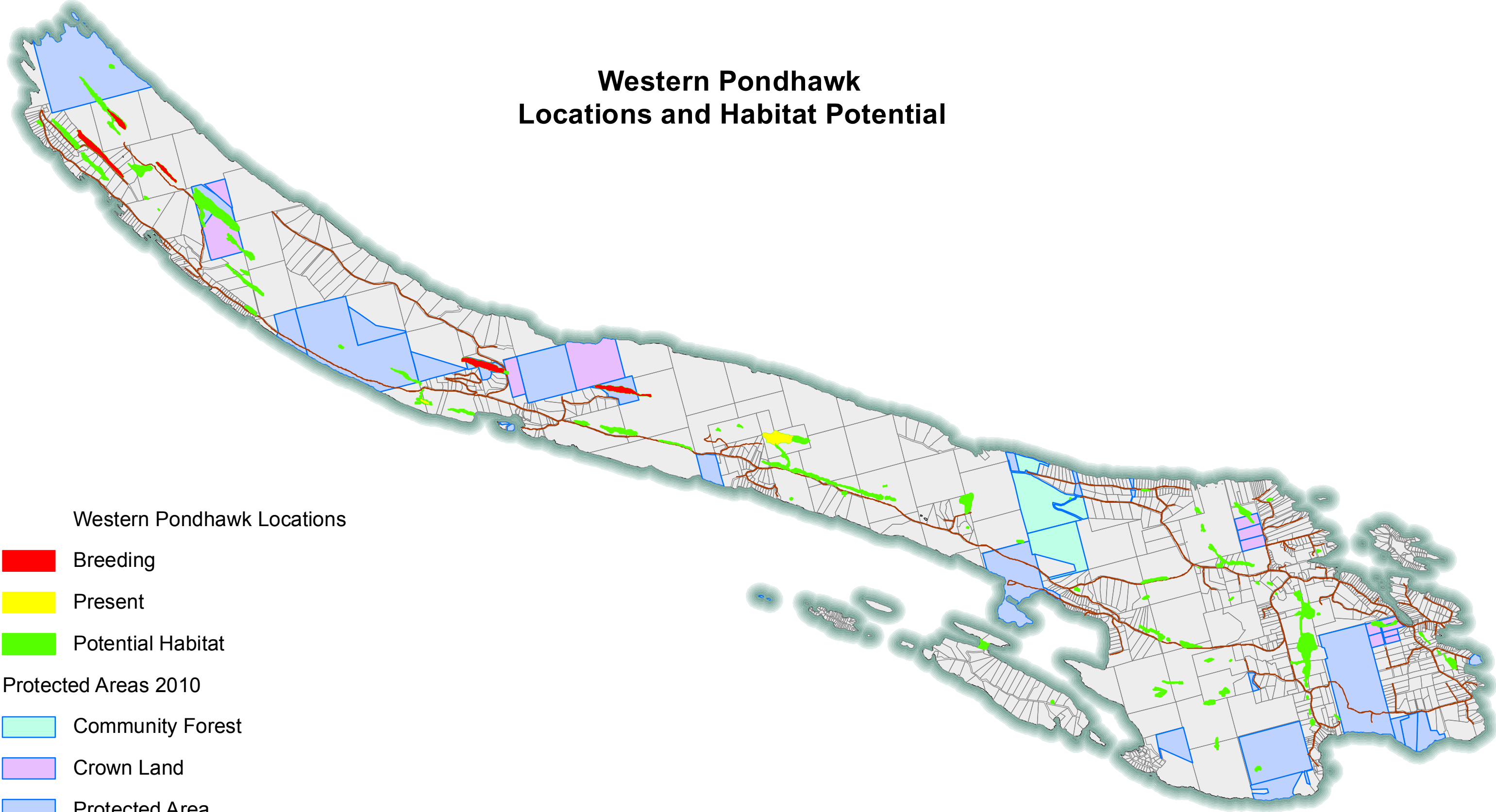
Area of potential habitat	128.79 ha
Portion of Galiano Island with potential habitat	2.13 %
Area of potential habitat with protected status	36.45 ha
Portion of protected areas with potential habitat	28.30 %
Portion of Galiano Island with protected status	19.30 %

The Western Pondhawk is very sensitive to the possible threats. Fortunately, the wetlands where the species are found do not have draining or filling being done. Invasive species are present at a number of wetlands and riparian areas harbouring the Western Pondhawk (Scotch Broom, Reed Canary Grass, English Holly) but are not present in significant abundance in any location. Of more important concern is the land privately owned, as there is a potential for introducing fish, as well as other invasive species being introduced due to landowners simply being uninformed. Also, those wetlands harbouring significant numbers of the Western Pondhawk are contained in protected areas.

**Recommendations:**

- Continue to survey for absence or presence at other wetlands.
- Remove invasive species that pose a threat to the degradation of the habitats.

# Western Pondhawk Locations and Habitat Potential



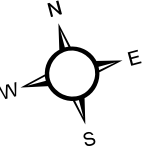
### Western Pondhawk Locations

- Breeding
- Present
- Potential Habitat

### Protected Areas 2010

- Community Forest
- Crown Land
- Protected Area

Produced By: Galiano Conservancy Association  
Map Date: March 2011  
Scale: 1:59,000  
Projection: UTM Zone 10 NAD83



**Dun Skipper** (*Eupheyes vestries*)

BC: Blue-Listed  
 Provincial: S3 (2006)  
 COSEWIC: Threatened (2000)  
 Global: G5 (2006)  
 Conservation Framework Priority: 2  
 Galiano Island Status: Unconfirmed

**Descriptions:**

The Dun Skipper has a 23-27 mm wing span and brownish purple wings. Females are marked with white spots and a pale purple crescent on underside of their hind wing, whereas males are unmarked.

**Habitat:**

Predominantly open moist areas, such as; forest edges, bogs, meadows, swamp edges. However they can live near disturbed areas such as railroad tracks. Larvae are pale green with wavy lines and eat purple top grass and sedges.

**Range:**

The Dun Skipper ranges from Southern BC to California.

**Threats:**

One of the main threats to this species is the limited food availability. The sedges that they feed on are not widespread and continuing habitat destruction due to development exacerbates their situation. Invasive species such as scotch broom are also a problem.

*Scope:* TBD

*Severity:* TBD

*Immediacy:* TBD

**Current Status:**

Number of EOs:

EO Comments:

Number of Protected EOs:

Population Size:

Range Extent:

Landowner Contact:

273 possible

33 visited

Viability: **Medium**

Area of potential habitat	255.81 ha
Portion of Galiano Island with potential habitat	4.24 %
Area of potential habitat with protected status	76.00 ha
Portion of potential habitat with protected status	29.71 %
Portion of Galiano Island with protected status	19.30 %

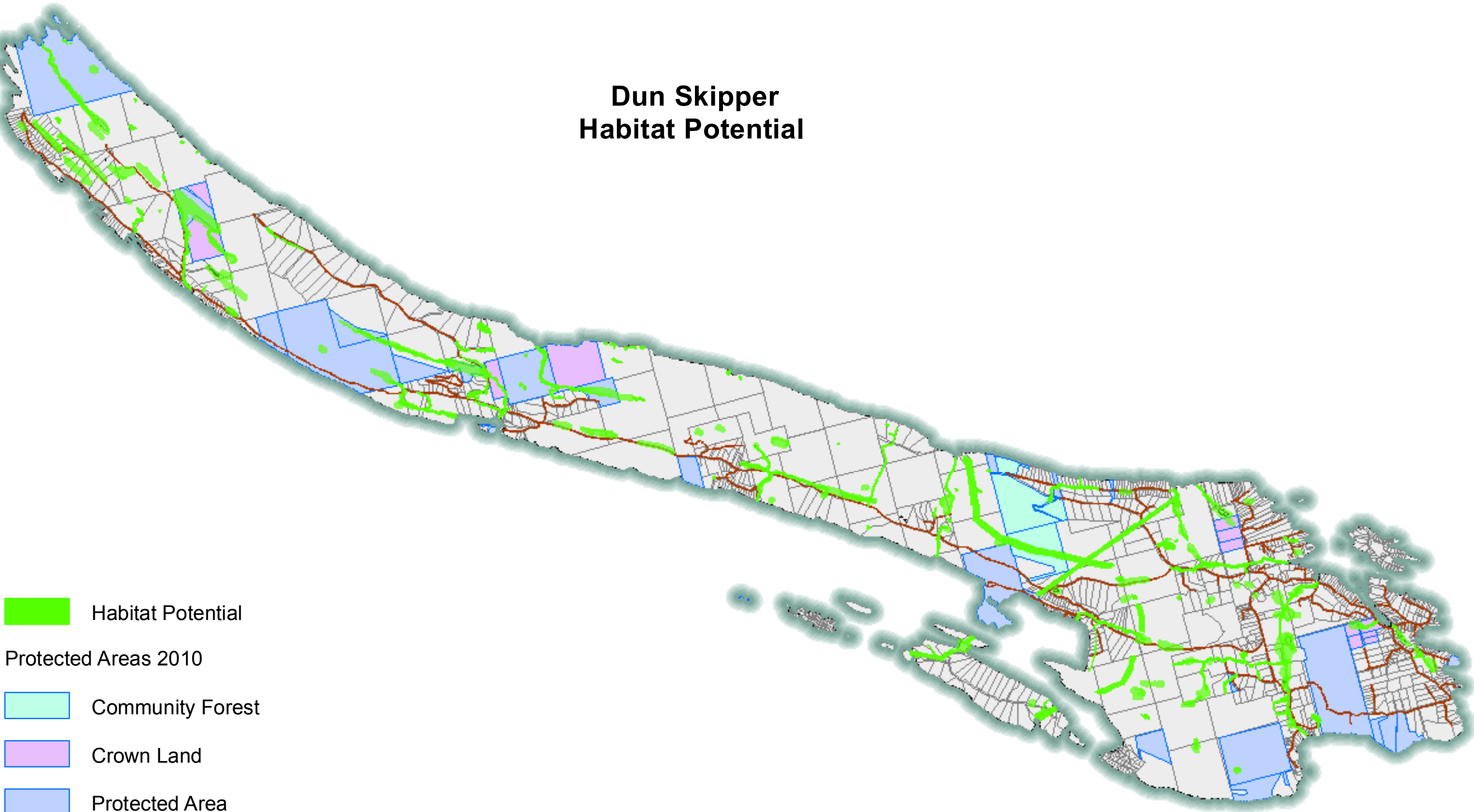
Due to the habitat potential of this species residing mostly around roads and utility corridors its' sensitivity to Scotch Broom is drastically increased. Scotch Broom prevails in disturbed areas and has no problem crowding out and killing the Dun skipper's food supply of Purple Top Grass. Although there is limited development in the habitat many of the bog and swamp edges where they can potentially occur are free or partially free of Scotch Broom. No known invasive predators are found on Galiano.


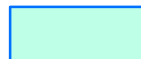
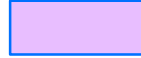
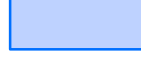
**Recommendations:**

- Continue to monitor for the Dun Skipper
- Conserve its potential habitat

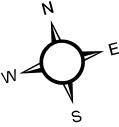


# Dun Skipper Habitat Potential



-  Habitat Potential
- Protected Areas 2010
  -  Community Forest
  -  Crown Land
  -  Protected Area

Produced By: Galiano Conservancy Association  
Map Date: March 2011  
Scale: 1:59,000  
Projection: UTM Zone 10 NAD83



**Taylor's Checkerspot** (*Euphydryas Editha taylori*)



BC: Red-Listed  
 Provincial: S1 (2006)  
 COSEWIC: Endangered (2000)  
 Global: G5T1 (2008)  
 Conservation Framework Priority: 1  
 Galiano Island Status: Unconfirmed

**Description:**

The Taylor's Checkerspot is a subspecies of a butterfly commonly called Edith's checkerspot. Little detailed information is available on the appearance of the subspecies that occurs in Canada. It has a wingspan of 24 to 42 millimeters, and females can be substantially larger than males. It has very rounded wings with brick-red, black and yellow patterning.

**Habitat:**

The Taylor's Checkerspot needs open grassland with sparse vegetation and conditions that are suitable for the plant species that provide food for larvae and nectar for the adults. Often these sites are very dry, rocky and close to areas with Garry oaks. The Garry oak meadow ecosystems and adjacent open grasslands provide larval food and nectar requirements.

**Range:**

The Taylor's Checkerspot was historically found in southeastern Vancouver Island, the Puget Trough in Washington from Tenino north through the San Juan Islands, and the Willamette Valley in Oregon. Now it occurs as one main population and two small secondary populations, all three of which occur in the same area.

**Threats:**

The main threats to this species survival are invasive plants such as Scotch Broom, along with fire suppression and habitat destruction from urbanization.

*Scope:* TBD  
*Severity:* TBD  
*Immediacy:* TBD

**Current Status:**

Number of EOs:

EO Comments:

Number of Protected EOs:

Population Size:

Range Extent:

Landowner Contact:

168 possible

24 visited

Viability: **Medium**

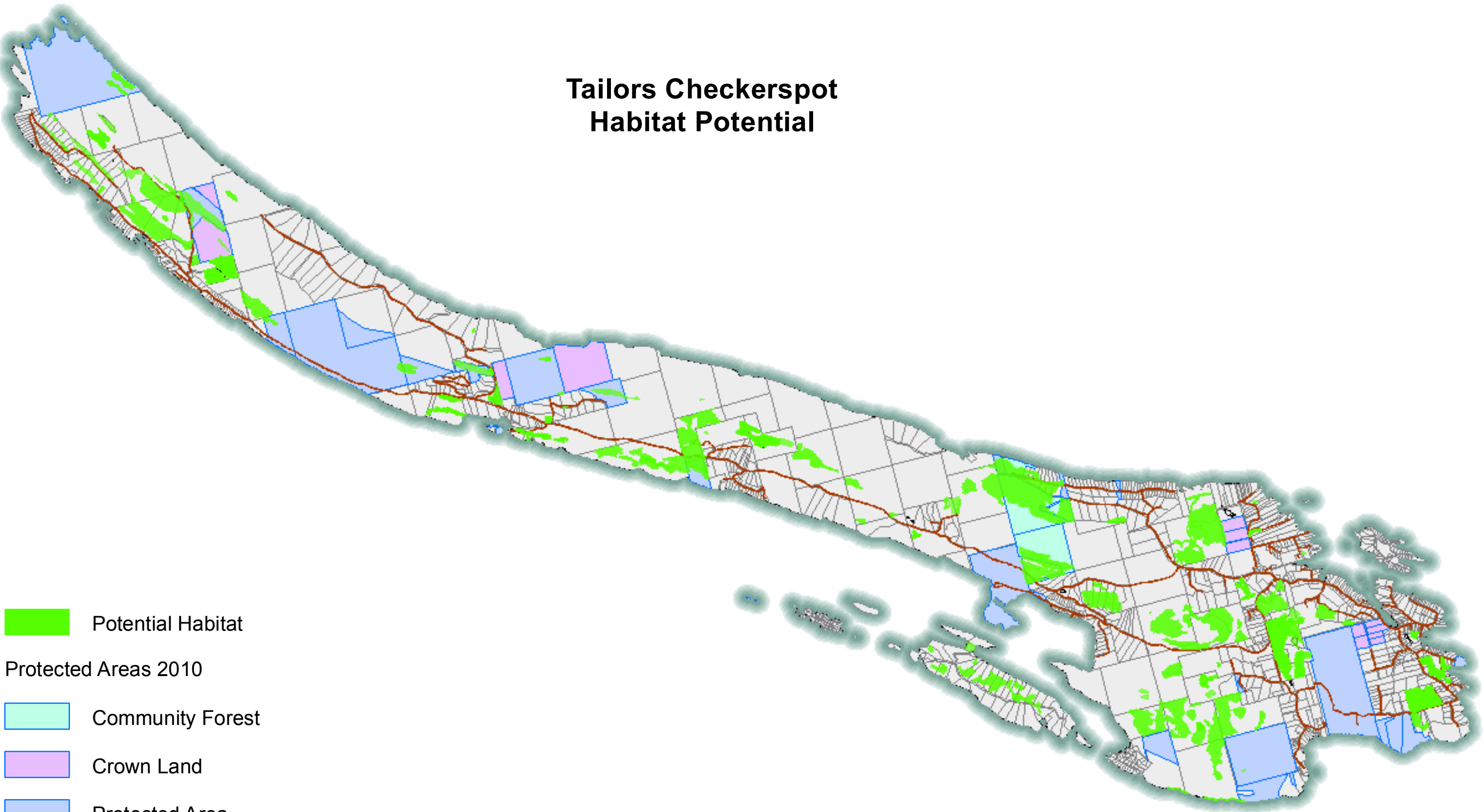
Area of potential habitat	588.05 ha
Portion of Galiano Island with potential habitat	9.74 %
Area of potential habitat with protected status	200.67 ha
Portion of potential habitat with protected status	34.12 %
Portion of Galiano Island with protected status	19.30 %

As the Taylor's Checkerspot occurs in Garry Oak ecosystems, and more than half of the habitat is in protected areas, the threat of habitat destruction due to urbanization is very limited. However, even in these protected areas, Scotch Broom is a dominant threat and very prevalent. As Taylor's Checkerspot is very sensitive to the shading and crowding out of its larval feeding plant, due to Scotch Broom, this can be seen as the dominant threat on Galiano. So far, only Mt Sutil has a full restoration plan in progress, and other protected areas have not been fully assessed. An invasive species survey has been carried out on other protected areas and the Scotch Broom coverage is abundant.

**Recommendations:**

- Continue to monitor for the butterfly
- Preserve potential habitat
- Remove broom in the potential habitats.

# Tailors Checkerspot Habitat Potential



 Potential Habitat

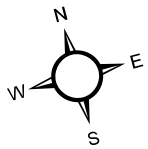
Protected Areas 2010

 Community Forest

 Crown Land

 Protected Area

Produced By: Galiano Conservancy Association  
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Projection: UTM Zone 10 NAD83



**Island blue** (*Plebejus saepiolus insulanus*)



BC: Red-Listed  
 Provincial: SH (2006)  
 COSEWIC: Endangered (2000)  
 Global: G5TH (2003)  
 Conservation Framework Priority: 1  
 Galiano Island Status: Unconfirmed

**Description:**

The Island Blue is a butterfly with a wingspan of 21 to 28 millimeters. The upper side of the male is pale metallic blue and has narrow black borders. A row of dark spots is located close to the margin of the male's hind wing.

**Habitat:**

The species relies on open areas that have enough moisture to support clover (required for larval food) and that are probably disturbed (e.g. old roads or campgrounds).

**Range:**

This subspecies of Island Blue was found only on British Columbia's Vancouver Island and nowhere else in the world.

**Threats:**

Threats to this species include urbanization, invasive introduced plants and/or control of forest fires. The Island Blue has not been recorded since 1979.

*Scope:* TBD

*Severity:* TBD

*Immediacy:* TBD

**Current Status:**

Number of EOs:

EO Comments:

Number of Protected EOs:

Population Size:

Range Extent:Landowner Contact:

80 possible

15 visited

Viability: **Low**




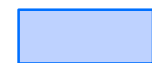
Area of potential habitat	403.05 ha
Portion of Galiano Island with potential habitat	6.68 %
Area of potential habitat with protected status	49.01 ha
Portion of potential habitat with protected status	12.16 %
Portion of Galiano Island with protected status	19.30 %

As the species requires disturbed areas with clover, the sensitivity to the invasive plant Scotch Broom is quite high. As Scotch Broom has invaded nearly all disturbed sites on Galiano, there is very little chance for the clover to persist.

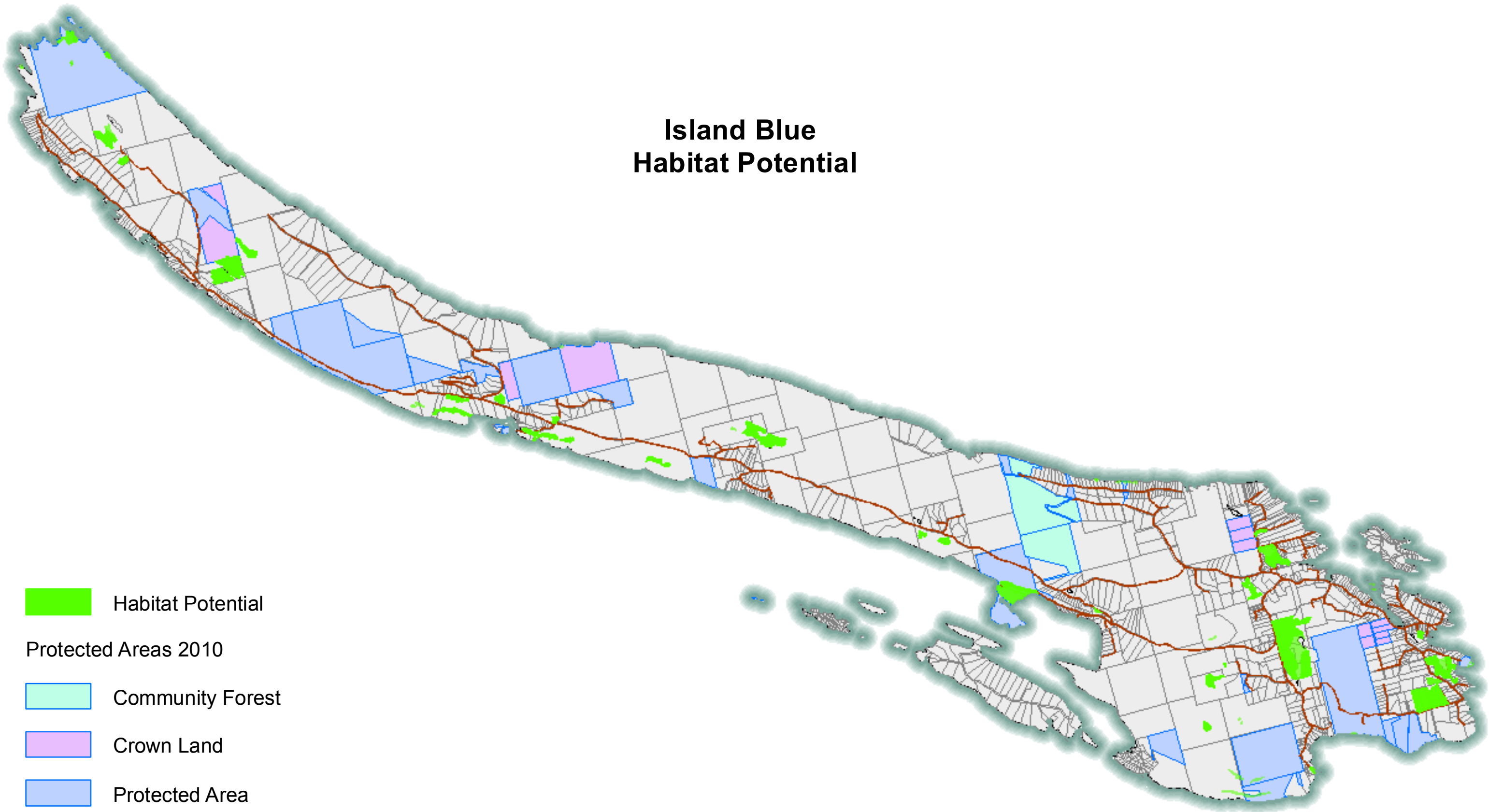
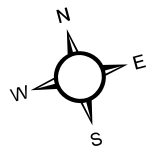
**Recommendations:**

- Continue monitoring for this species.

# Island Blue Habitat Potential

-  Habitat Potential
- Protected Areas 2010
  -  Community Forest
  -  Crown Land
  -  Protected Area

Produced By: Galiano Conservancy Association  
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**Moss Elfin** (*Callophrys mossii mossii*)

BC: Blue-Listed  
 Provincial: S2S3 (2006)  
 COSEWIC: Not-Listed  
 Global: G4T4 (2001)  
 Conservation Framework Priority: 2  
 Galiano Island Status: Confirmed

**Description:**

These tiny, brown butterflies rapidly skim the ground as they search for a succulent plant called stonecrop which grows on dry bluffs and rocky outcrops. When they find it they sip nectar from its flowers and lay their eggs on its leaves.

**Habitat:**

Moss Elfin is a Garry oak ecosystem species; an ecosystem with approximately 5% of its historic range left in Canada.

**Range:**

Although stonecrop is relatively common the species is not found in many locations and its distribution is limited to southern Vancouver Island and a few occurrences on the mainland. This species extends south in the U.S. to central California.

**Threats:**

Stonecrop beds are destroyed by heavy grazing by deer, house construction, road construction, residential landscaping and crowding out by Scotch Broom.

*Scope:* Moderate  
*Severity:* Moderate  
*Immediacy:* Moderate

**Current Status:**Number of EOs:

6

EO Comments:

5 sightings occurred on Mt Galiano in open areas.  
 1 sighting was on Bodega Ridge in the open meadow.

Number of Protected EOs:

All of the EO's were seen in a protected area.



Population Size:

Undetermined

Range Extent:

Mountains in the southern and mid points of Galiano Island.

Landowner Contact:

105 possible

15 visited

Viability: **Medium**

Area of potential habitat	147.89 ha
Portion of Galiano Island with potential habitat	2.45 %
Area of potential habitat with protected status	93.66 ha
Portion of potential habitat with protected status	63.33 %
Portion of Galiano Island with protected status	19.30 %

As the Moss Elfin occurs in Garry Oak ecosystems, and over half of the habitat is in protected areas, the threat of habitat destruction due to urbanization is very limited. However, even in these protected areas, Scotch Broom is a dominant threat and very prevalent. As the Moss Elfin is very sensitive to the shading and crowding out of Scotch Broom (due to it killing the plants that it feeds on) this can be seen as the dominant threat on Galiano. No domestic grazing sites are known to exist where Moss Elfin occurs, nor are there any road construction projects. However, the wild deer browse of Stonecrop may occur in various protected and privately owned areas.

**Recommendations:**

- Continue to monitor for species populations
- Restore and preserving the potential habitats and known locations of occurrence.
- Special attention is to be paid to Scotch Broom as it is quite prevalent in the known locations for this species.

# Moss Elfin Locations and Habitat Potential



● Moss Elfin Locations

■ Habitat Potential

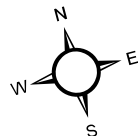
Protected Areas 2010

■ Community Forest

■ Crown Land

■ Protected Area

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### Blue-grey Taildropper Slug (*Prophysaon coeruleum*)



BC: Red-Listed  
 Provincial: S1 (2008)  
 COSEWIC: Endangered  
 Global: G3G4 (2006)  
 Conservation Framework Priority: 1  
 Galiano Island Status: Unconfirmed

#### **Description:**

The Blue-grey Taildropper Slug is a small to medium sized slug (up to 45 mm long) with a slender and brilliant blue-grey coloured body with parallel grooves and ridges on the back and sides of the tail.

#### **Habitat:**

This species' habitat includes moist coniferous and mixed mature forests. Like the Oregon Forestsnail, this slug is almost always found in big-leaf maple groves with a rich and productive understory of sword fern, salal, and nettle; the habitat features coarse woody debris and a deep leaf litter with moist soil conditions. Feeding specifically on fungi, the slugs are solitary or occur in very small groups. Much about their secretive habits are still unknown.

#### **Range:**

In Western Canada, this species exists at the northern limit of its range; there are currently only five sites known, all on southern Vancouver Island.

#### **Threats:**

Threats to the Blue-grey Taildropper Slug include heavy recreational use within their habitat range, and the introduction of exotic plants and animals, such as invasive slugs and snails.

*Scope:* TBD  
*Severity:* TBD  
*Immediacy:* TBD

#### **Current Status:**

Number of EOs:

EO Comments:

Number of Protected EOs:

Population Size:

Range Extent:

Landowner Contact:

484 possible

41 visited

Viability: **Medium**

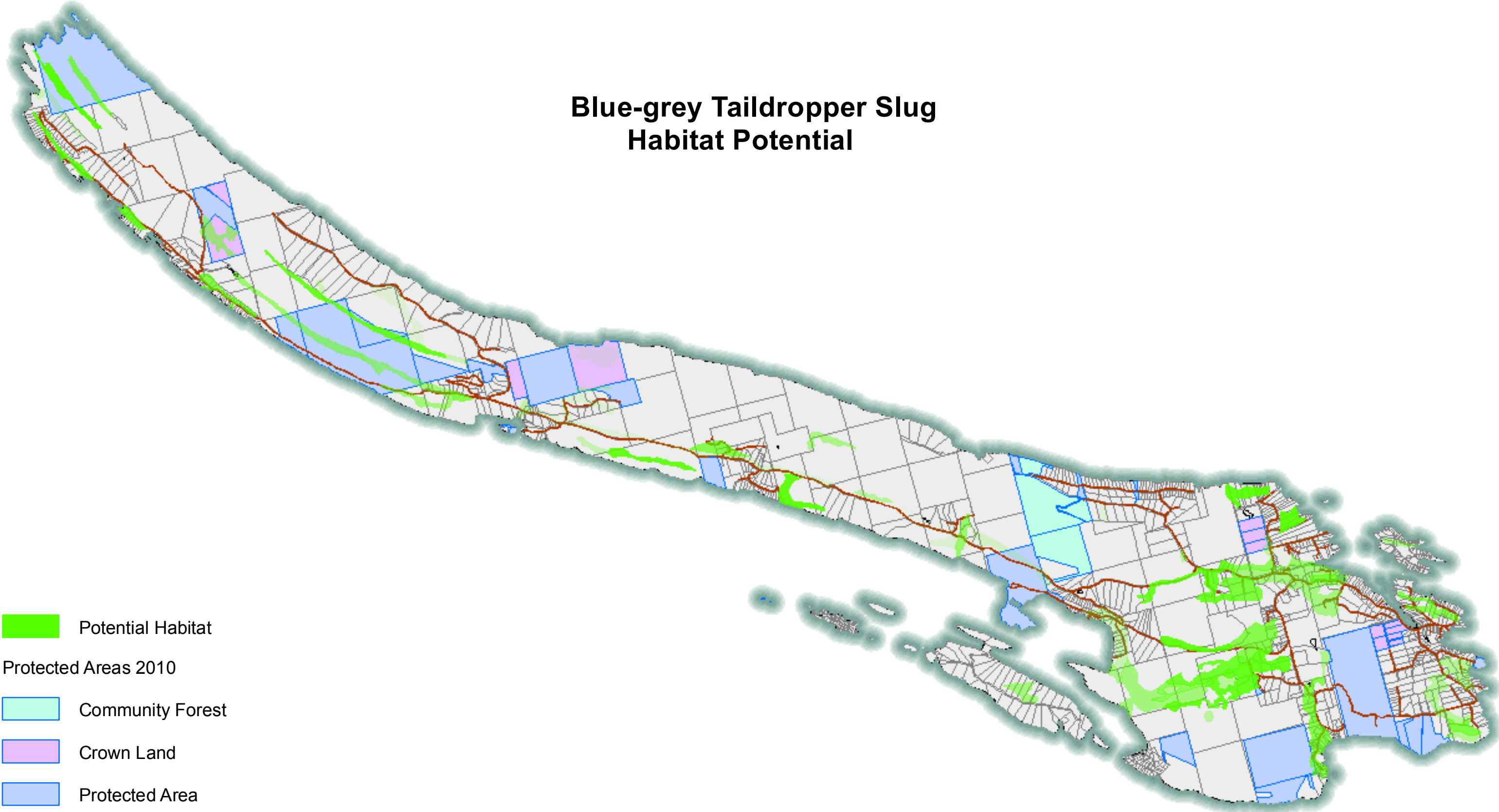
Area of potential habitat	777.56 ha
Portion of Galiano Island with potential habitat	12.88 %
Area of potential habitat with protected status	299.03 ha
Portion of potential habitat with protected status	38.46 %
Portion of Galiano Island with protected status	19.30 %

A large proportion of the habitat occurs directly on privately owned lots, and thus a possibility for fragmentation of habitat exists. However, with nearly 40% of the potential habitat in protected areas, as well as Galiano Island having limited new and existing development, the potential habitat of this gastropod is unlikely to see much destruction. The one sensitive threat to the Blue-grey Taildropper Slug which Galiano contains in prolific amounts is the invasive Black Arion (*Arion ater*). It is a proficient competitor as it eats fungi (among other things) which the Blue-grey Taildropper predominantly feeds on.

**Recommendations:**

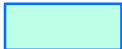
- Continue to search for this species
- Maintain and protect the potential habitats

# Blue-grey Taildropper Slug Habitat Potential



 Potential Habitat

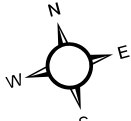
Protected Areas 2010

 Community Forest

 Crown Land

 Protected Area

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## Oregon Forestsnail (*Allogona townsendiana*)



BC: Red-Listed  
 Provincial: S1S2 (2008)  
 COSEWIC: Endangered (2002)  
 Global: G3G4 (2005)  
 Conservation Framework Priority: 1  
 Galiano Island Status: Unconfirmed

### Description:

The Oregon Forestsnail, part of a large and diverse group of land snails endemic to North America, has a pale-brown or straw-coloured shell with 5 or 6 whorl lines. The lip of the shell is white, thickened, and flares. The actual snail body is a light-brown to brown-red colour. The Oregon Forestsnail is long lived and most active in the spring mating season. Hermaphroditic, this snail reaches sexual maturity at around five years.

### Habitat:

Habitat includes mixed and deciduous forests typically dominated by big-leaf maple with a great amount leaf litter and a vigorous understory of salal, sword fern and stinging nettle.

### Range:

It can be found in coastal lowlands between British Columbia and western Oregon.

### Threats:

Because it cannot move easily into new areas, the Oregon Forestsnail is susceptible to habitat damage. Suitable habitat is fragmented by agricultural lands, urban development, and natural topography (such as rivers and mountains). With their habitat becoming degraded and fragmented, predation by mammals, birds, and amphibians has increased, along with competition from introduced exotic gastropods.

*Scope:* TBD

*Severity:* TBD

*Immediacy:* TBD

### Current Status:

#### Number of EOs:

2 dry shells were found.

#### EO Comments:

No live species found.

Number of Protected EOs:Population Size:

Unknown

Range Extent:

Only one area of the Island near a protected beach

Landowner Contact:

472 possible

39 visited

Viability: **Medium**

Area of potential habitat	746.08 ha
Portion of Galiano Island with potential habitat	12.36 %
Area of potential habitat with protected status	300.96 ha
Portion of potential habitat with protected status	40.34 %
Portion of Galiano Island with protected status	19.30 %

With 40% of its habitat contained in protected areas, fragmentation is not a dominant threat when coupled with the limited development on Galiano Island. Dried and empty shells were found in habitat that is both in and near to protected areas leading one to assume that if the gastropod is still on Galiano it may have a chance for survival. Though Galiano has an abundance of a natural predator, the Red Legged Frog, invasive predators are yet to be introduced.

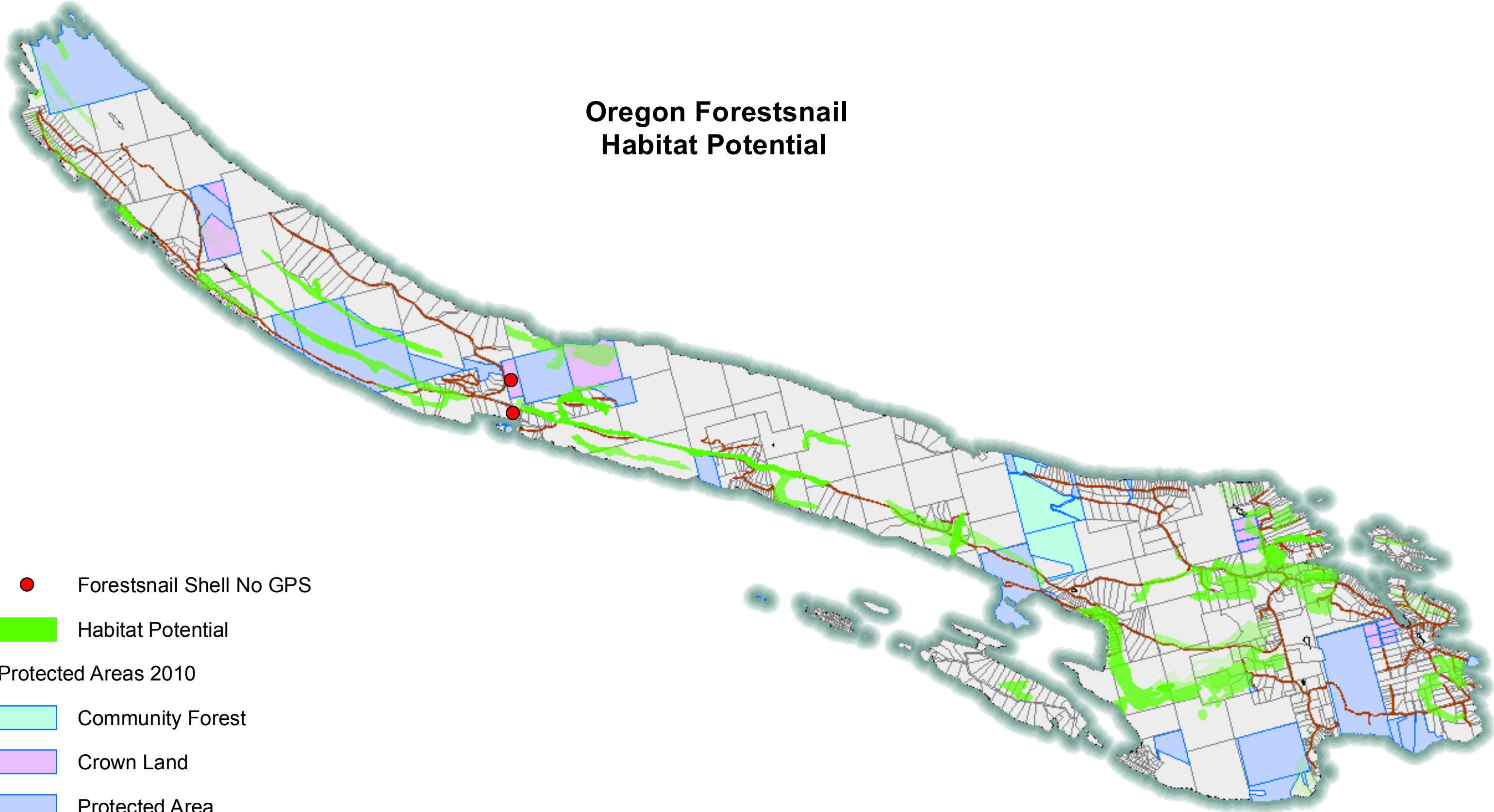
**Historic Sightings:**

2 empty shells were found along the Greig Creek watershed, near Laughlin Lake and near the Retreat Cove estuary.

**Recommendations:**

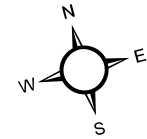
- Continue monitoring for The Oregon Forestsnail near Greig Creek where the shells were found
- Maintain their habitat in protected areas.

# Oregon Forestsnail Habitat Potential



- Forestsnail Shell No GPS
- Habitat Potential
- Protected Areas 2010
  - Community Forest
  - Crown Land
  - Protected Area

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**Pacific Sideband** (*Monadenia fidelis*)



BC: Blue-Listed  
 Provincial: S3S4 (2008)  
 COSEWIC: Not-Listed  
 Global: G4G5 (2002)  
 Conservation Framework Priority: 2  
 Galiano Island Status: Confirmed

**Description:**

The reddish-brown shell, up to 35 mm in diameter, usually has a dark band around the perimeter, though sometimes with a yellow band. The body of the snail is reddish-pink.

**Habitat:**

The Pacific Sideband snail can be found in deciduous, coniferous or mixed forests but also in open woods and grassy areas; it has also been found in trees up to 7 m.

**Range:**

This species occurs along the Pacific coast from southeastern Alaska to northern California, generally west of the crest of the Cascade Range.

**Threats:**

Habitat loss and fragmentation from development and forestry and agricultural practices are the main threats to this species.

*Scope:* Low  
*Severity:* Low  
*Immediacy:* Low

**Current Status:**

Number of EOs:  
 Many

EO Comments:  
 The snail is prolific across the island and seen in every type of habitat that it is associated with.

Number of Protected EOs:

Population Size:  
 Undetermined

Range Extent:

Entire Island

Landowner Contact:

472 possible

39 visited

Viability: **High**

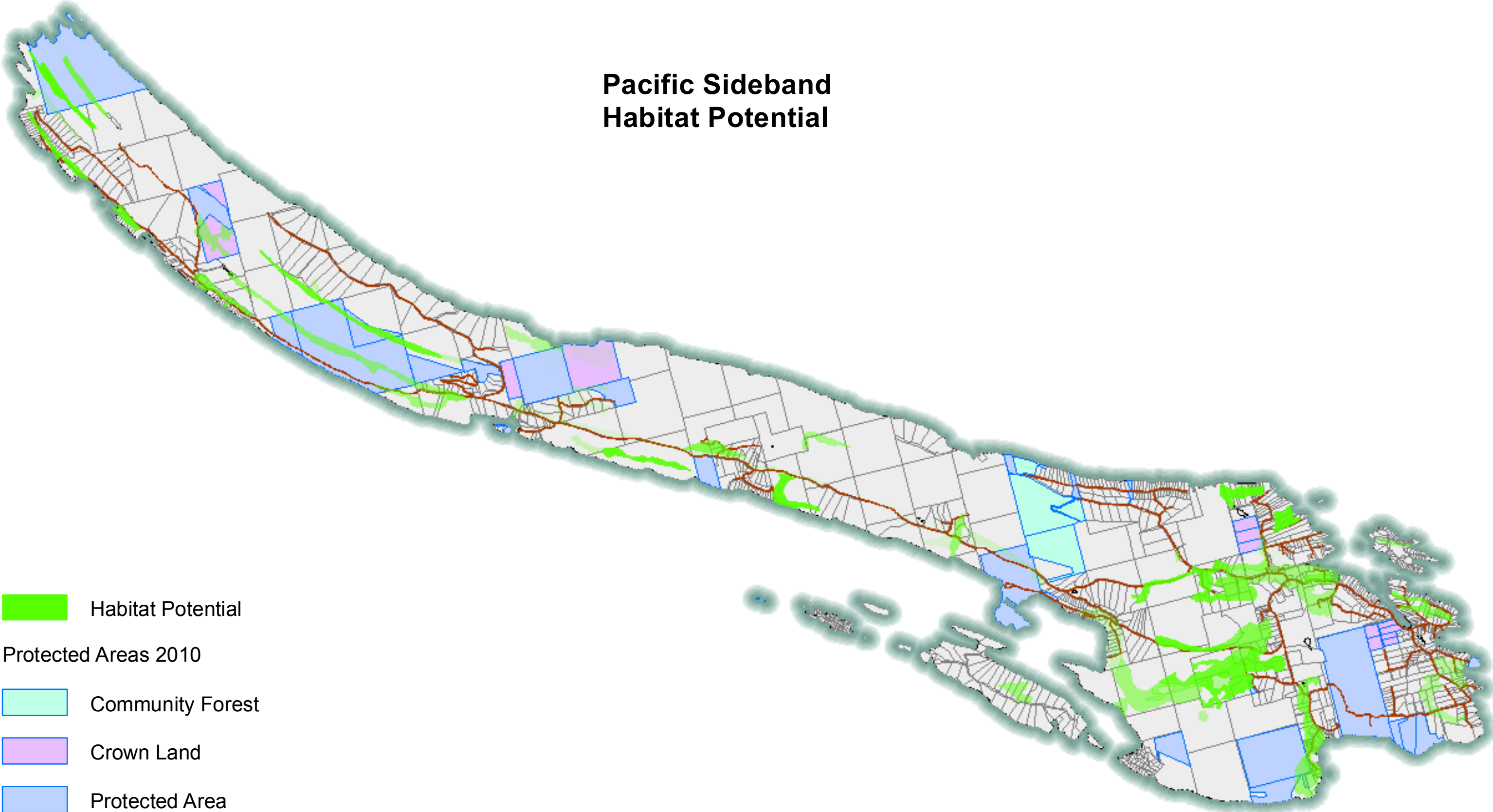
Area of potential habitat	746.08 ha
Portion of Galiano Island with potential habitat	12.36 %
Area of potential habitat with protected status	300.96 ha
Portion of potential habitat with protected status	40.34 %
Portion of Galiano Island with protected status	19.30 %


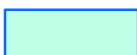
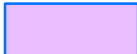
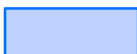
Although the Pacific sideband may be sensitive to the fragmentation and loss of its habitat from anthropogenic causes, Galiano Island contains 40% of its habitat in protected areas and many of the landowners whose properties overlap with the habitat have been contacted. No invasive species prey on this snail, and the abundant sightings across the island show a healthy population.

**Recommendations:**

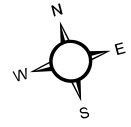
- Possibly removing The Pacific Sideband from the at risk list on Galiano due to the snail's nearly ubiquitous presence.

# Pacific Sideband Habitat Potential



-  Habitat Potential
- Protected Areas 2010**
-  Community Forest
-  Crown Land
-  Protected Area

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**Band-tailed Pigeon** (*Patagioneas fasciata*)

BC: Blue-listed

Provincial: S3S4B (2009)

COSEWIC: Special Concern (2008)

Global: G4 (2000)

Conservation Framework Priority: 2

Galiano Island Status: Confirmed

**Description:**

The Band-tailed Pigeon is a largish (40 cm long and 350g) pigeon. It is dark overall, with a purple-grey head and distinctive white crescent on the hind neck. In flight the tail appears dark with a lighter grey band across the tip. The bill (with black tip), feet and legs are yellow. Band-tailed Pigeons are long-lived birds with low annual reproductive potential. Clutches usually contain one egg but some pairs may nest twice each year.

**Habitat:**

They nest in both coniferous and deciduous trees and prefer open sites and edges bordered by tall conifers for roosting. In the spring the birds feed on grains, peas, seeds and insects and are often found on farmland. During summer they move to breeding areas when trees and bushes provide food sources in berries, fruits and nuts. The winter distribution appears to coincide with the favoured food trees of arbutus and Garry oak.

**Range:**

They are migratory birds, but where areas are warm enough and have adequate food sources, such as on Galiano Island, the species can be found year-round. The Band-Tailed Pigeon lives along the BC coast from southern Vancouver Island to the Queen Charlotte Islands, with habitat in the Fraser Lowlands and a sparse distribution in the interior of northern and southern BC.

**Threats:**

Threats within British Columbia include loss and degradation of breeding habitat and mineral sites through residential and industrial development, disturbance at mineral sites, chemical contamination at foraging and mineral sites, disease, and predation on nests by invasive species. Former additional threats to pigeons breeding in British Columbia but wintering elsewhere include inappropriate hunting regulations and behavioural attributes that make them vulnerable to hunters; but better regulations have removed this threat at present.

*Scope:* Low

*Severity:* Low

*Immediacy:* Low

**Current Status:**Number of EOs:

3

EO Comments:

Two locations were in open areas, near the coast with denser forests and minimal development around the spotted location. The birds were spotted on private lots with viable habitat nearby. The third sighting was on the road near potential habitat in a soon to be protected area (The Learning Center)

Number of Protected EOs:

None of the sightings occurred in protected areas.

Population Size:

Undetermined

Range Extent:

The pigeon ranges from south Galiano to more than  $\frac{3}{4}$  of the way to the northern tip, with no known obstacles preventing a range that encompasses the entire island.

Landowner Contact:

148 possible

26 visited

Viability: **High**

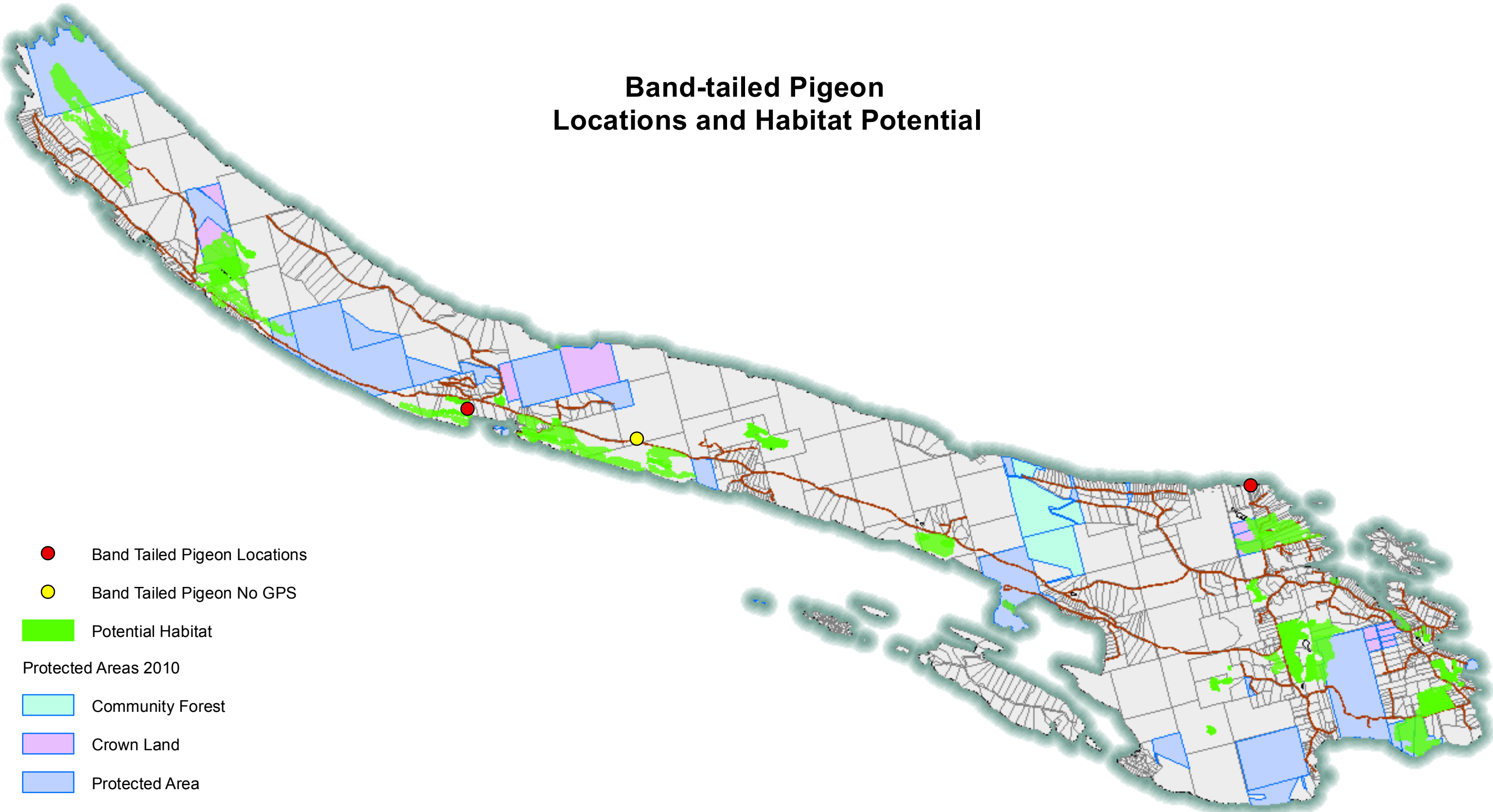
Area of potential habitat	393.05 ha
Portion of Galiano Island with potential habitat	6.51 %
Area of potential habitat with protected status	127.60 ha
Portion of potential habitat with protected status	32.46 %
Portion of Galiano Island with protected status	19.30 %

As there is little new residential and industrial development on Galiano Island, the habitat of the Band-tailed Pigeon is not being degraded. The only sensitive threats to the pigeon are domesticated cats as both hunters and invasive species do not have a known effect on this species. Also, their wintering habitat requirements of Garry Oak and Arbutus trees are found in abundance on Galiano compared to other locations.

**Recommendations:**

- Raise awareness through landowner contact.
- Document and map additional sightings.

# Band-tailed Pigeon Locations and Habitat Potential



● Band Tailed Pigeon Locations

● Band Tailed Pigeon No GPS

■ Potential Habitat

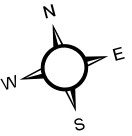
Protected Areas 2010

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■ Crown Land

■ Protected Area

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## Common Nighthawk (*Chordeiles minor*)



BC: Red-Listed

Provincial: S4B (2010)

COSEWIC: Threatened (2007)

Global: G5 (2009)

Conservation Framework Priority: 2

Galiano Island Status: Confirmed

### **Description:**

The Common Nighthawk is a medium-sized bird with long, narrow, pointed wings, and a long tail that is slightly notched. The call, a short, raucous, and nasal “peet,” is quite distinctive. The head is large and flattened, the eyes are large, the bill is small, and the mouth is large. The plumage is dark brown with black, white, and buff specks. In flight, a wide white stripe can be seen across the long feathers that edge the wings.

### **Habitat:**

The Common Nighthawk nests in a wide range of open, vegetation-free habitats, including dunes, beaches, recently harvested forests, burnt-over areas, logged areas, rocky outcrops, rocky barrens, grasslands, pastures, peat bogs, marshes, lakeshores, and river banks. This species also inhabits mixed and coniferous forests.

### **Range:**

The Common Nighthawk nests in almost all of North America, in some parts of Central America, and possibly also in southeastern Columbia. In Canada, this species occurs in all of the provinces and territories, with the exception of Nunavut. The Common Nighthawk winters throughout South America, primarily in Eastern Peru and Ecuador, and Southern Brazil.

### **Threats:**

Given the widespread declines observed among other insectivorous bird species, it is assumed that the reduced availability of food sources caused by the extensive use of pesticides is a contributing factor to this birds decline. Other factors that may have contributed to the declines observed in certain regions include habitat loss and modification, particularly the reforestation of abandoned agricultural fields and harvested forests; fire-fighting efforts; intensive agriculture; and the gradual reduction of the number of buildings with flat gravelled roofs in urban areas. The increased predator population (specifically, Domestic Cats, Striped Skunks, Raccoons, American Crows, and Common Ravens) may contribute to this species’ decline, particularly in urban areas. Other possible factors include collisions with motor vehicles and climate change.

*Scope:* Low

*Severity:* Low

*Immediacy:* Low

**Current Status:**

Number of EOs:

6

EO Comments:

2 seen on Mount Sutil.

1 seen amongst small private lots.

1 spotted near a large forest lot.

1 spotted on the coast amongst a number of private lots.

1 seen in a wetland with forested development surrounding it (Therah) and a large protected park nearby (Dionisio)

Number of Protected EOs:

2 of the EO's were seen in a protected area.

Population Size:

Undetermined

Range Extent:

Entire Island.

Landowner Contact:

97 possible

14 visited

Viability: **Medium**

Area of potential habitat	32.83 ha
Portion of Galiano Island with potential habitat	0.54 %
Area of potential habitat with protected status	16.68 ha
Portion of potential habitat with protected status	50.80 %
Portion of Galiano Island with protected status	19.30 %

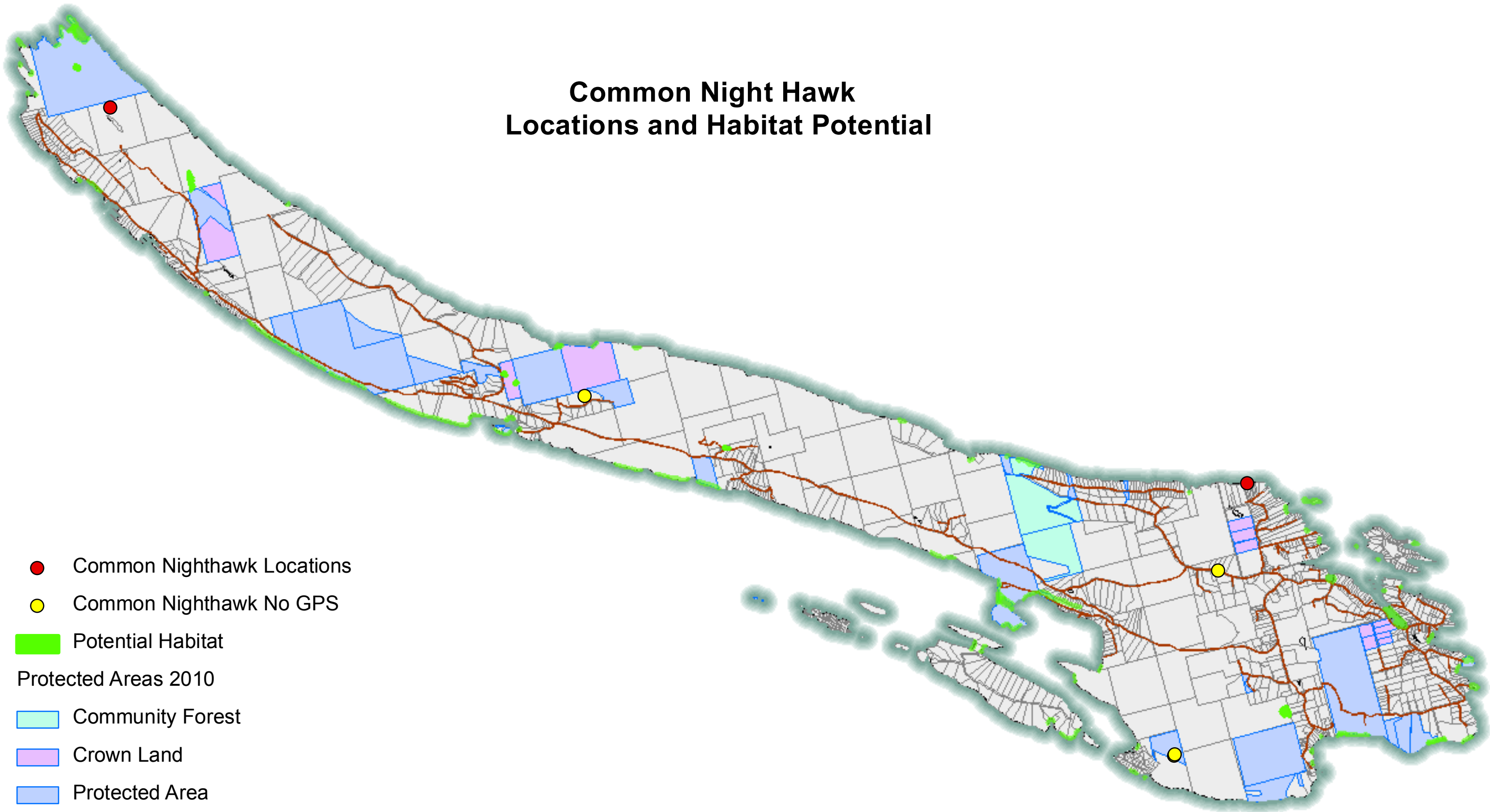
Due to the low availability of actual habitat on Galiano for the Common Nighthawk, any present threats would greatly affect this species. However, due to the low amount of threats, (All of the threats are almost non-existent on Galiano; not a large urban area, not many vehicles to create collisions, low pesticide use) Galiano is quite safe for the threatened specie. Although domesticated cats and other predators are present on Galiano, due to the limited urban areas the Nighthawk has the protection it needs to escape attack.

**Recommendations:**

- Whenever private landowners are contacted, awareness of the use of pesticides and the decline in Common Nighthawk populations should be presented.
- Predation of wildlife from domesticated animals should be made aware to local landowners.



# Common Night Hawk Locations and Habitat Potential



● Common Nighthawk Locations

● Common Nighthawk No GPS

■ Potential Habitat

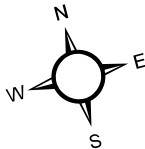
Protected Areas 2010

■ Community Forest

■ Crown Land

■ Protected Area

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## Great Blue Heron (*Ardea herodias fannini*)



BC: Blue-Listed

Provincial: S2S3B,S4N (2009)

COSEWIC: Special Concern (2008)

Global: G5T4 (1997)

Conservation Framework Priority: 1

Galiano Island Status: Confirmed

### Description:

The Great Blue Heron, *Ardea herodias*, is the largest wading bird in North America, standing over 1 m in height. It feeds in slow moving salt, fresh or brackish water. This large and cunning bird hunts for fish, amphibians, reptiles, invertebrates, small mammals, and even other birds.

### Habitat:

Nests are typically large and found high up in mature conifer trees close to mudflats. They tend to hunt in different areas in different seasons. During the warmer seasons the Great Blue Heron generally lives near beaches; during the winter near grasslands and marshes.

### Range:

The Great Blue Heron breeds across most of North America South of Alaska, and on the Galapagos Islands. The non-breeding distribution is south of freezing areas in the north, to as far south as Panama. The distribution of the Pacific Great Blue Heron is confined to the Pacific Coast from Prince William Sound, Alaska south to Puget Sound, Washington, where it resides year-round.

### Threats:

Threats to this endangered species include: industrial contaminants and general pollution of food sources, urbanization, wetland drainage, and human disturbance such as noise and activity which disturb the Heron's during the nesting season.

*Scope:* Moderate

*Severity:* Low

*Immediacy:* Low

**Current Status:**Number of EOs:

6

EO Comments:

5 sightings were along the coast at various places along the island at both private and public locations

1 sighting was in a wetland with mixed forest surrounding it and at the north end of the island.

Number of Protected EOs:

0 of the EO's were seen in a protected area.

Population Size:

Undetermined

Range Extent:

Entire Island.

Landowner Contact:

544 possible

35 contacted

Viability: **Medium**

Area of potential habitat	1,207.68 ha
Portion of Galiano Island with potential habitat	20.00 %
Area of potential habitat with protected status	543.65 ha
Portion of potential habitat with protected status	45.02 %
Portion of Galiano Island with protected status	19.30 %

Galiano does have a number of threats to the Heron which can be remedied through outreach and education. Namely, pollution and disturbance to known nesting locations are the dominant threats. The Heron is quite sensitive to these two threats as when nesting, disturbed herons flee the nest, allowing eagles, ravens and other opportunistic birds to feed on the eggs. Montague Harbour contains hundreds of tourist boats through the summer months, which contribute to pollution of known eel grass beds which sustain the Herons during the summer. However, for the wintering habitats of wetlands, the larger territories are in protected areas, so no drainage or filling will occur in the foreseeable future.

**Recommendations:**

- Outreach materials letting boaters and the general public know to not disturb nesting Herons.
- Pollution of the feeding areas should also be brought to the public's attention.

# Great Blue Heron Locations and Habitat Potential



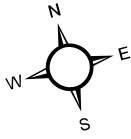
- Great Blue Heron No GPS
- Great Blue Heron Locations

Habitat Potential

Protected Areas 2010

- Community Forest
- Crown Land
- Protected Area

Produced By: Galiano Conservancy Association  
Map Date: March 2011  
Scale: 1:59,000  
Projection: UTM Zone 10 NAD83



### Olive-sided Flycatcher (*Contopus cooperi*)



BC: Blue-Listed

Provincial: S3S4B (2009)

COSEWIC: Threatened (2007)

Global: G4 (2008)

Conservation Framework Priority: 2

Galiano Island Status: Confirmed

#### Description:

The Olive-sided Flycatcher is a medium-sized songbird 18-20 cm in length. Adults are a deep brownish olive-grey above and on the sides and flanks, with white on the throat, centre of breast and belly. The wings are dark with pale, indistinct wing bars, and the bill is stout. The most distinctive features of the Olive-sided Flycatcher are its tendency to conspicuously perch on the top of tall trees or snags while foraging and the song—a loud three-note whistle:

*Quick, THREE BEERS!*

The Olive-sided Flycatcher is also considered an indicator species of the coniferous forests throughout North America. Their diet consists of a wide variety of flying insects, which it captures via aerial attack.

#### Habitat:

The Olive-sided Flycatcher is most often associated with open areas containing tall trees or snags for perching. Open areas may be forest openings, forest edges near natural openings (such as rivers, muskeg, bogs or swamps) or human-made openings (such as logged areas), burned forest or open to semi-open mature forest stands. There is evidence that birds nesting in harvested habitats experience significantly lower breeding success than those nesting in natural (e.g. burned) openings. Generally, forest habitat is either coniferous or mixed coniferous.

#### Range:

The Olive-sided Flycatcher breeds throughout much of forested Canada and in the western and northeastern United States. Approximately 54% of its breeding range is in Canada. The winter distribution is more restricted, being primarily in Panama and the Andes Mountains from Venezuela to Peru and Bolivia.

#### Threats:

Evidence from the western United States suggests that there is significantly lower nest success in harvested stands compared with fire origin stands. Resolution of the role of forest management in Olive-sided Flycatcher population decline in Canada is hampered by thinly distributed populations. Habitat alteration and loss on migration and wintering grounds may also be a contributing factor in population declines. Support for this is provided by the

consistent population declines across a wide breeding range, whereas non-breeding areas are more geographically restricted.

*Scope:* Low  
*Severity:* Low  
*Immediacy:* Low

**Current Status:**

Number of EOs:  
 10

EO Comments:

2 sighting locations were close to the water with small private lots surrounding them.  
 3 sightings occur on Mt Sutil spread out across the entire southern face.  
 2 sightings were on a private land in a meadow and near a cliff in a mature mixed canopy.  
 (Learning center property)  
 3 sightings were at mid island near a wetland and in-between 2 wetlands on private lots.  
 The last occurrence was in a wetland at the north end of the island surrounded by dense forest.

Number of Protected EOs:  
 3 of the EO's were seen in a protected area.

Population Size:  
 Undetermined

Range Extent:  
 The flycatcher is seen across the entire island.

Landowner Contact:  
 1169 possible  
 56 visited

Viability: **High**

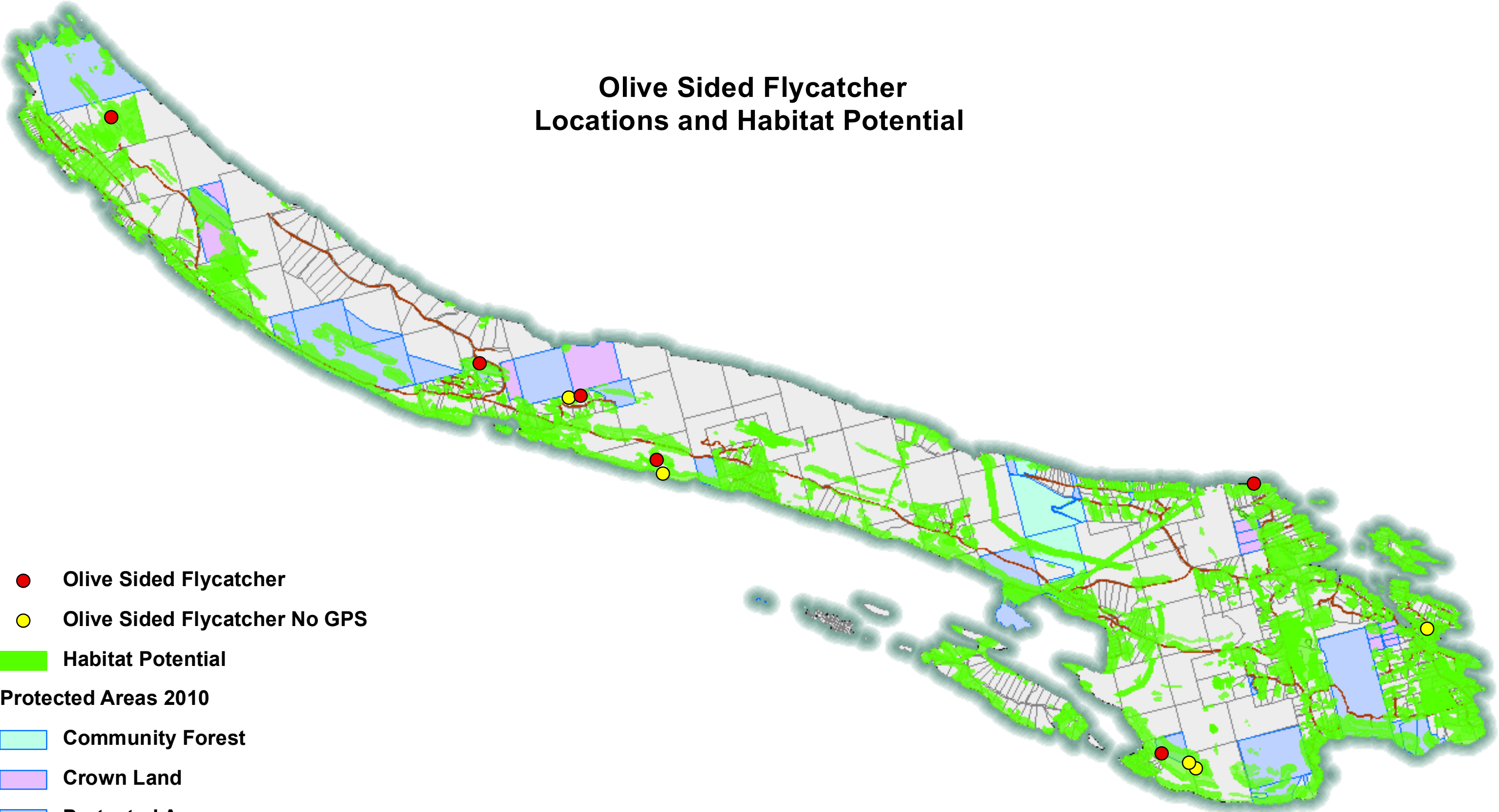
Area of potential habitat	2,313.81 ha
Portion of Galiano Island with potential habitat	38.32 %
Area of potential habitat with protected status	798.86 ha
Portion of potential habitat with protected status	35.53 %
Portion of Galiano Island with protected status	19.30 %

As most of Galiano Island is second growth and tree harvesting has not occurred in recent decades, most of the openings for the Olive Sided Flycatcher are naturally created which is a boon as they do much poorer in harvested openings. The threats to the bird are extremely low on the Island given that there are no invasive predators and habitat alteration is limited to individual preferences on privately owned land. As the decline in population is mostly due to its disappearing winter environment, not much can be done.

**Recommendations:**

- Continue to monitor its occurrence

# Olive Sided Flycatcher Locations and Habitat Potential

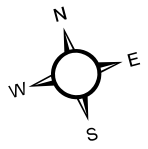


- Olive Sided Flycatcher
- Olive Sided Flycatcher No GPS

**Habitat Potential**

- Protected Areas 2010**
- Community Forest
  - Crown Land
  - Protected Area

Produced By: Galiano Conservancy Association  
Map Date: March 2011  
Scale: 1:59,000  
Projection: UTM Zone 10 NAD83



**Peregrine Falcon** (*Falco peregrinus anatum* and *Falco peregrinus pealei*)



BC: Red-Listed / Blue-Listed  
 Provincial: S2B (2005) / S3B (2005)  
 COSEWIC: Special Concern (2007)  
 Global: G4T4 (2006) / G4T3 (1997)  
 Conservation Framework Priority: 2 / 1  
 Galiano Island Status: Confirmed

**Description:**

The Peregrine Falcon is viewed by many as the most impressive bird of prey. This incredible bird is designed for speed and is the fastest bird in the world, reaching speeds up to 175 mph. Physically, the two species of Falcon found in our region have long pointed wings and a narrow dark blue-black tail, a black head from the crown to below the eye which resembles a helmet, a yellow ring around the eye and a yellow bill with a dark tip. The Peregrine Falcon is generally silent except when breeding or disturbed.

**Habitat:**

In the Gulf Islands they nest on seaside cliff edges where the vantage point will offer good hunting results for shorebirds and waterfowl. They are faithful to nesting sites and aeries, some of which have been used by successive generations for centuries.

**Range:**

After nesting, their search for prey can take them as far as South America, although the two Peregrine Falcon subspecies of our area are known to stay in the local region.

**Threats:**

Organochlorine compounds which bioaccumulate in the falcons' bodies which thin the shells of the fertile eggs has been the greatest threat to these majestic birds. When DDT was banned in the 1970's it had a significant positive impact on population numbers. Breeding programs were also introduced, and together these two forces have secured the populations of the falcons, although careful surveying and monitoring continues to be integral for the bird's survival.

*Scope:* Low  
*Severity:* Low  
*Immediacy:* Low

**Current Status:**

Number of EOs:

3



EO Comments:

One falcon was spotted at Mt Galiano hunting along the bluff. 2 falcons were sighted mid island near 2 separate wetlands in the center of the island.

Number of Protected EOs:

1 of the EO's was seen in a protected area.

Population Size:

Undetermined

Range Extent:

South and mid island with no natural barriers for the falcon to range the entire island.

Landowner Contact:

36 possible

9 visited

Viability: **High**

Area of potential habitat	7.74 ha
Portion of Galiano Island with potential habitat	0.13 %
Area of potential habitat with protected status	5.03 ha
Portion of potential habitat with protected status	64.99 %
Portion of Galiano Island with protected status	19.30 %

Though there is very little habitat on Galiano Island for this bird of prey, a large proportion of it is in protected areas. In addition, a bird sanctuary is near a historical nesting site which would provide ample food for this species. And as the main threat, DDT has been banned, there is little in the way as far as threats for the Peregrine Falcon.

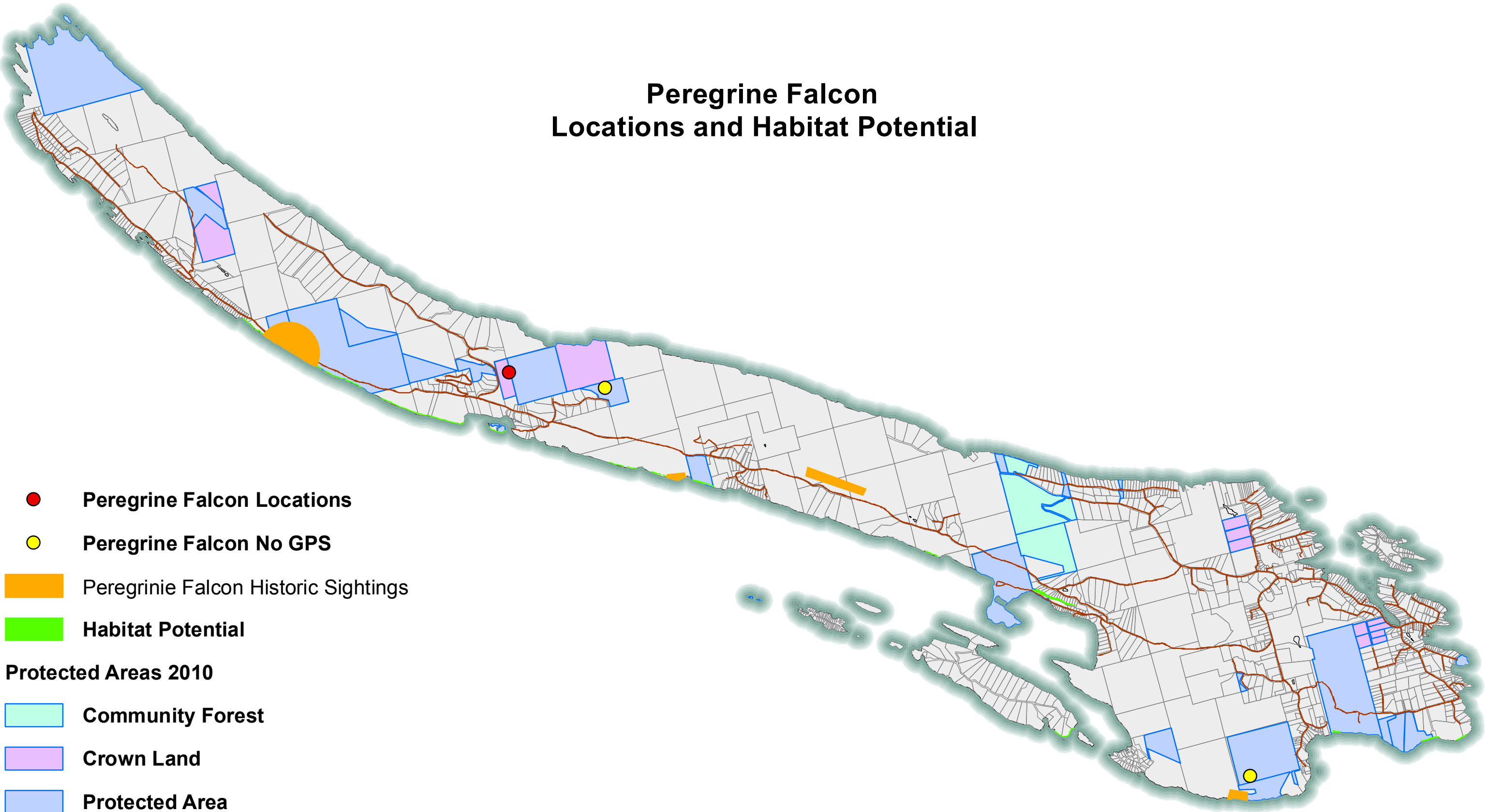
**Historical Data:**

Peregrine Falcons were first observed in 1980, 1985, and 2003 north of Montague Harbour, toward the north end of Galiano Island, and south of Mount Galiano respectively. The first location had a final historical observation in 2005 with a pair defending their nest. The second location was observed to have 1 adult with 3 chicks in 2005, even though no sightings were seen in 2003. The final site did not have any falcons in 2005, but in 2003 and 2004 young were observed.

**Recommendations:**

- Continue to survey for presence and determine population size
- Inform private landowners and the public at large about the falcons' presence and at risk status.

# Peregrine Falcon Locations and Habitat Potential

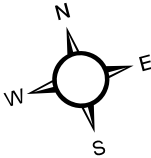


- **Peregrine Falcon Locations**
- **Peregrine Falcon No GPS**
- **Peregrine Falcon Historic Sightings**
- **Habitat Potential**

**Protected Areas 2010**

- **Community Forest**
- **Crown Land**
- **Protected Area**

Produced By: Galiano Conservancy Association  
Map Date: March 2011  
Scale: 1:59,000  
Projection: UTM Zone 10 NAD83



### Western Screech-Owl (*Megascops kennicottii*)



BC: Blue-Listed  
 Provincial: S3 (2009)  
 COSEWIC: Special Concern (2002)  
 Global: G5T4 (2003)  
 Conservation Framework Priority: 1  
 Galiano Island Status: Unconfirmed

#### **Description:**

The Western Screech-owl is a small streaked owl with yellow eyes and tufts of feathers over the ears. Adults are 19 to 26 cm long and weigh between 120 and 305 g. Overall these owls are grey-brown. They have fine dark wavy lines on the breast overtop an off-white background, and a streaky mottled effect throughout the remainder of the feathers. The two sexes look the same, but females are generally larger and heavier than males.

#### **Habitat:**

The Western Screech-owl is found in quite varied habitats throughout its range: semi-open woodlands, treed suburban areas, and even cactus deserts. Within Canada, the owl is found in lower elevation forested areas, frequently close to water. The forest type and proportion of coniferous to deciduous trees may vary.

#### **Range:**

The Western Screech-owl is found in Western North America from southern Alaska to central Mexico. In Canada, the species occurs only in British Columbia. The *kennicottii* subspecies occurs along the coast of British Columbia, including Vancouver Island, but excluding the Queen Charlotte Islands. Along the southeasternmost coast of Vancouver Island and the southwestern portion of the mainland, the population of Western Screech-owl *kennicottii* subspecies appears to be low and likely decreasing.

#### **Threats:**

Along the south coast of British Columbia, habitat loss to development is a threat to Western Screech-owl *kennicottii* subspecies populations. The relationship between the owls and forestry has not been studied, but it has been suggested that forestry operations negatively affect screech-owl habitat, both through timber harvesting and the removal of dead trees that serve as potential nest-cavity sites.

The Barred Owl also plays a large role in the declining population of the Screech Owl, as it preys on the smaller Screech Owl, and dominates the ecosystems changed by human activity.

Scope: TBD  
 Severity: TBD  
 Immediacy: TBD

### **Current Status:**

Number of EOs:

EO Comments:

Number of Protected EOs:

Population Size:

Range Extent:

Landowner Contact:

271 possible

37 visited

Viability: **Low**

Area of potential habitat	508.42 ha
Portion of Galiano Island with potential habitat	8.42 %
Area of potential habitat with protected status	147.62 ha
Portion of potential habitat with protected status	29.03 %
Portion of Galiano Island with protected status	19.30 %

Given the fact that the invasive competitor and predator Barred Owl (*Strix varia*) occupies nearly all the known potential habitat, there is a very low chance for the smaller Screech Owl to survive on an isolated island. Although there have been a number of historical sightings of this owl, no recent data exists. However, given the relatively large amount of potential habitat, and the low amount of destruction due to development, there may still be a Western Screech Owl presence on Galiano.

### **Historical Data:**

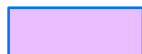
In 1987 through to 1993 in July and August, two birds have been calling each other every year near Montague Harbour.

### **Recommendations:**

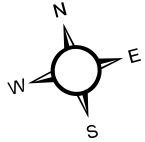
- Continue monitoring potential habitats for the elusive species.
- Through outreach or direct contact, landowners may become aware of this species' presence.

# Western Screech Owl Location and Habitat Potential



-  Potential Habitat
-  Western Screech Owl Historic Sightings
- Protected Areas 2010
  -  Community Forest
  -  Crown Land
  -  Protected Area

Produced By: Galiano Conservancy Association  
Map Date: March 2011  
Scale: 1:59,000  
Projection: UTM Zone 10 NAD83



**Purple Martin** (Progne Subis)



BC: Blue-Listed  
 Provincial: S2S3B (2005)  
 COSEWIC: Not-Listed  
 Global: G5 (1996)  
 Conservation Framework Priority: 3  
 Galiano Island Status: Confirmed

**Description:**

Purple Martins are the largest swallows in North America, with a body length of about 17 to 20 centimetres - about half as large again as other swallows in the region. The birds are agile hunters and eat a variety of winged insects.

**Habitat:**

Martins make their nests in cavities, either natural or artificial. In many places, humans put up real or artificial hollow gourds, or houses for martins, especially in the east, where Purple Martins are almost entirely dependent on such structures.

**Range:**

The Purple Martin migrates to The Amazon Basin in winter. Its winter range extends into Ecuador but does not seem to ascend far up the Andean foothills.

**Threats:**

Threats to the species are invasive birds (House Sparrows and European Starlings) that steal their nests, removal or loss of nesting locations, and insecticides devastating insect populations on which they feed.

*Scope:* Moderate  
*Severity:* Moderate  
*Immediacy:* Moderate

**Current Status:**

Number of EOs:

3

EO Comments:

Nesting boxes were placed at two bays; both were used by pairs of Purple Martins. Both boxes had eggs. One had 3 young chicks hatch and the other had 4 eggs being incubated at last check.

Number of Protected EOs:

0 of the EO's were seen in a protected area.

Population Size:

Undetermined

Range Extent:

2 bays where nest boxes were installed. Inland at Laughlin Lake

Landowner Contact:

241 possible

37 visited

Viability: **Low**

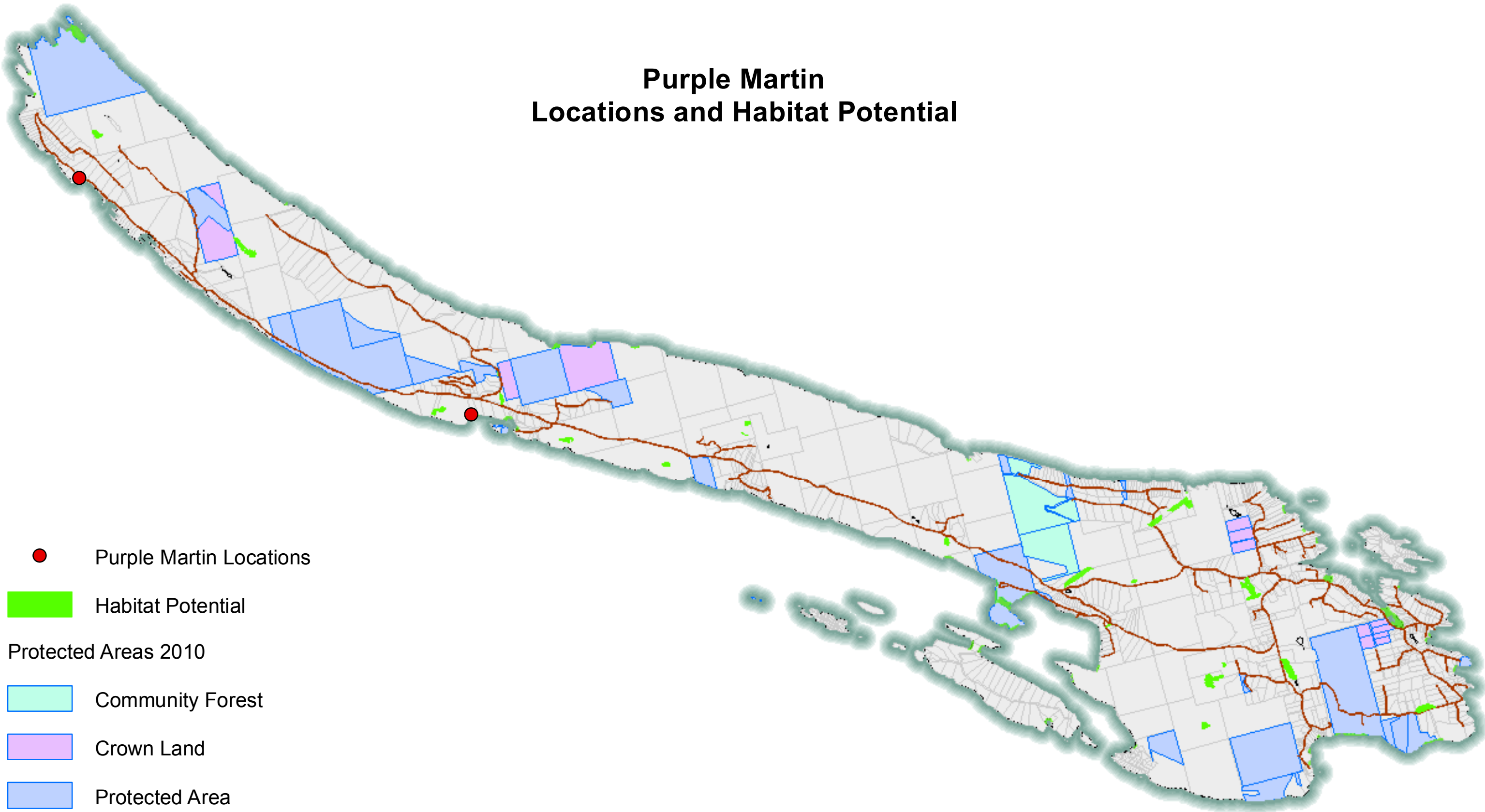
Area of potential habitat	211.97 ha
Portion of Galiano Island with potential habitat	3.51 %
Area of potential habitat with protected status	22.17 ha
Portion of potential habitat with protected status	10.46 %
Portion of Galiano Island with protected status	19.30 %

The Purple Martin is very sensitive to the invasive species that force it from its nesting grounds. Unfortunately Galiano does have both House Sparrows and European Starlings, which is the main cause for its extremely low occurrence on Galiano. However, pesticides are not a main concern on Galiano, which allows ample food opportunities for this insectivore.

**Recommendations:**

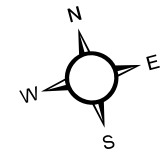
- Continue to monitor the nesting boxes
- Add more nesting boxes if an increase in the population occurs.
- Through local outreach, explain the harm that pesticides will have on this local animal.
- Protect the habitat of this bird as it is limited, and restore other nearby areas which will allow for a natural habitat instead of the just having nesting boxes.

# Purple Martin Locations and Habitat Potential



- Purple Martin Locations
- Habitat Potential
- Protected Areas 2010
  - Community Forest
  - Crown Land
  - Protected Area

Produced By: Galiano Conservancy Association  
Map Date: March 2011  
Scale: 1:59,000  
Projection: UTM Zone 10 NAD83





**Red-legged Frog** (*Rana aurora*)

BC: Blue-Listed  
 Provincial: S3S4 (2007)  
 COSEWIC: Special Concern (2004)  
 Global: G4 (2008)  
 Conservation Framework Priority: 1  
 Galiano Island Status: Confirmed

**Description:**

The Red-legged Frog is a medium-sized brown frog, generally grey and reddish with dark spotting; the skin on the lower belly and under the legs is bright red.

**Habitat:**

Found in lower altitudes, the Red-legged Frog breeds in cool ponds, lake margins, slow moving streams, marshes, and swamps with suitable vegetation. They prefer mature forests with lots of leaf litter and fallen logs.

**Range:**

This species is found at the northern part of its range on the Gulf Islands, the mainland adjacent to the Strait of Georgia, and through the Fraser Valley to Hope and south into Northern California on the western side of the coastal mountain ranges.

**Threats:**

Of special conservation concern are forestry practices that take out mature stands of trees. (There are 3 to 6 times more amphibians in old-growth forests). Habitat degradation, habitat loss, and fragmentation are other concerns for this species. The disease caused by *Batrachochytrium dendrobatidis* is called chytridiomycosis is also of concern due to it being very contagious.

*Scope:* Low  
*Severity:* Low  
*Immediacy:* Low

**Current Status:**

Number of EOs:  
 Many

EO Comments:

The Red Legged Frog has been sighted throughout Galiano Island in high quantities. Almost any wetland or mature forest is bound to have occurrences of these frogs.

Number of Protected EOs:Population Size:

Undetermined

Range Extent:

Entire Island

Landowner Contact:

686 possible

55 visted

Viability: **High**

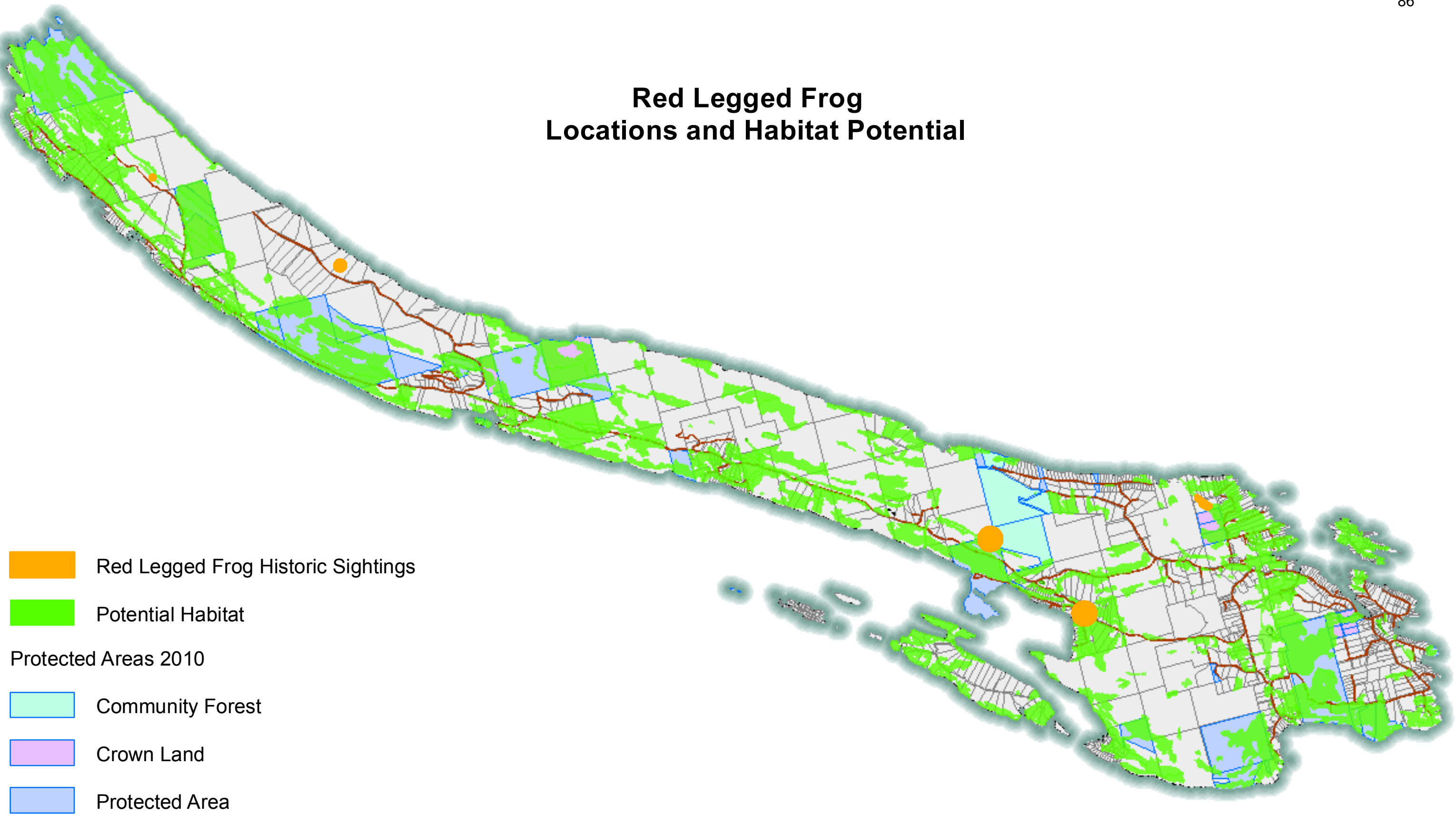
Area of potential habitat	1,712.07 ha
Portion of Galiano Island with potential habitat	28.36 %
Area of potential habitat with protected status	762.10 ha
Portion of potential habitat with protected status	44.51 %
Portion of Galiano Island with protected status	19.30 %

The frog is prolific on Galiano Island. Even though nearly half of its habitat is protected, on several private properties, landowners could easily identify this amphibian due to its abundant presence. Though sensitive to habitat fragmentation and degradation, Galiano has little development to cause significant harm to this species' home. Two potential threats which the red-legged frog is very sensitive to, but which also have not been observed on Galiano, are the invasive Bullfrog, and the Chytridiomycosis disease.

**Recommendations:**

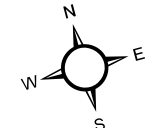
- Prevent the invasive Bullfrog from settling on Galiano through using outreach materials to inform the general public.
- During landowner contact sessions specify the harm the invasive bullfrogs can do to the ecosystems and species.

# Red Legged Frog Locations and Habitat Potential



-  Red Legged Frog Historic Sightings
-  Potential Habitat
- Protected Areas 2010
  -  Community Forest
  -  Crown Land
  -  Protected Area

Produced By: Galiano Conservancy Association  
Map Date: Marc 2011  
Scale: 1:59,000  
Projection: UTM Zone 10 NAD83



### Western Painted Turtle (*Chrysemys picta*)



BC: Red-Listed

Provincial: S2 (2007)

COSEWIC: Endangered (2006)

Global: G5TNR

Conservation Framework Priority: 2

Galiano Island Status: Unconfirmed

#### **Description:**

The Painted Turtle is a small freshwater turtle with a smooth dark carapace (upper shell). The Western Painted Turtle, which can attain a carapace length of approximately 25 cm, is the largest subspecies. The Western Painted Turtle is also distinct from the other subspecies in possessing a large central mark that covers much of the orange-red plastron. Its head, tail, and limbs are olive or blackish; it has yellow lines on the head and tail and yellow dots on the limbs.

#### **Habitat:**

This aquatic species is found in the shallow waters of ponds, lakes, marshes, and slow-moving stream reaches. Suitable wetlands have muddy substrates, an abundance of emergent vegetation, and numerous basking sites, such as logs and accessible banks. The habitat of the Western Painted Turtle also includes the riparian zones bordering these water bodies. Although Western Painted Turtles forage, mate, and hibernate in water, movements several hundred metres overland are not uncommon. These long-distance movements typically represent spring and fall migrations of individuals that breed and hibernate in separate ponds.

#### **Range:**

The Western Painted Turtle is found in central North America from central and western Canada south to Missouri, north-eastern Colorado, and Kansas. There are isolated populations in the south-western United States and an isolated population in Chihuahua, Mexico. In Canada, the range of the Western Painted Turtle extends from southwest of Lake Nipigon, Ontario, across the southern portion of Manitoba and Saskatchewan to the low-lying valleys of the southern interior and south coast of British Columbia and Vancouver Island.

#### **Threats:**

Habitat loss and degradation pose a significant threat to the Western Painted Turtle. There has been major wetland loss in British Columbia, and remaining wetlands are being degraded by human activities, specifically water pollution, bank erosion, loss of riparian vegetation, habitat fragmentation, infilling, and water extraction. One of the threats to the Pacific Coast population is the high road density. Many turtles, particularly females in search of nesting sites, are killed on roads. Given this species' high hatchling mortality rate, delayed sexual maturity, and high adult survival rates, chronic added mortality of juveniles and adults could

eliminate local populations. Introduced red-eared slider turtles and their associated diseases and parasites may pose a threat to the Western Painted Turtle habitat.

*Scope:* TBD

*Severity:* TBD

*Immediacy:* TBD

**Current Status:**

Number of EOs:

EO Comments:

Number of Protected EOs:

Population Size:

Range Extent:

Landowner Contact:

69 possible

19 visited

Viability: **Medium**

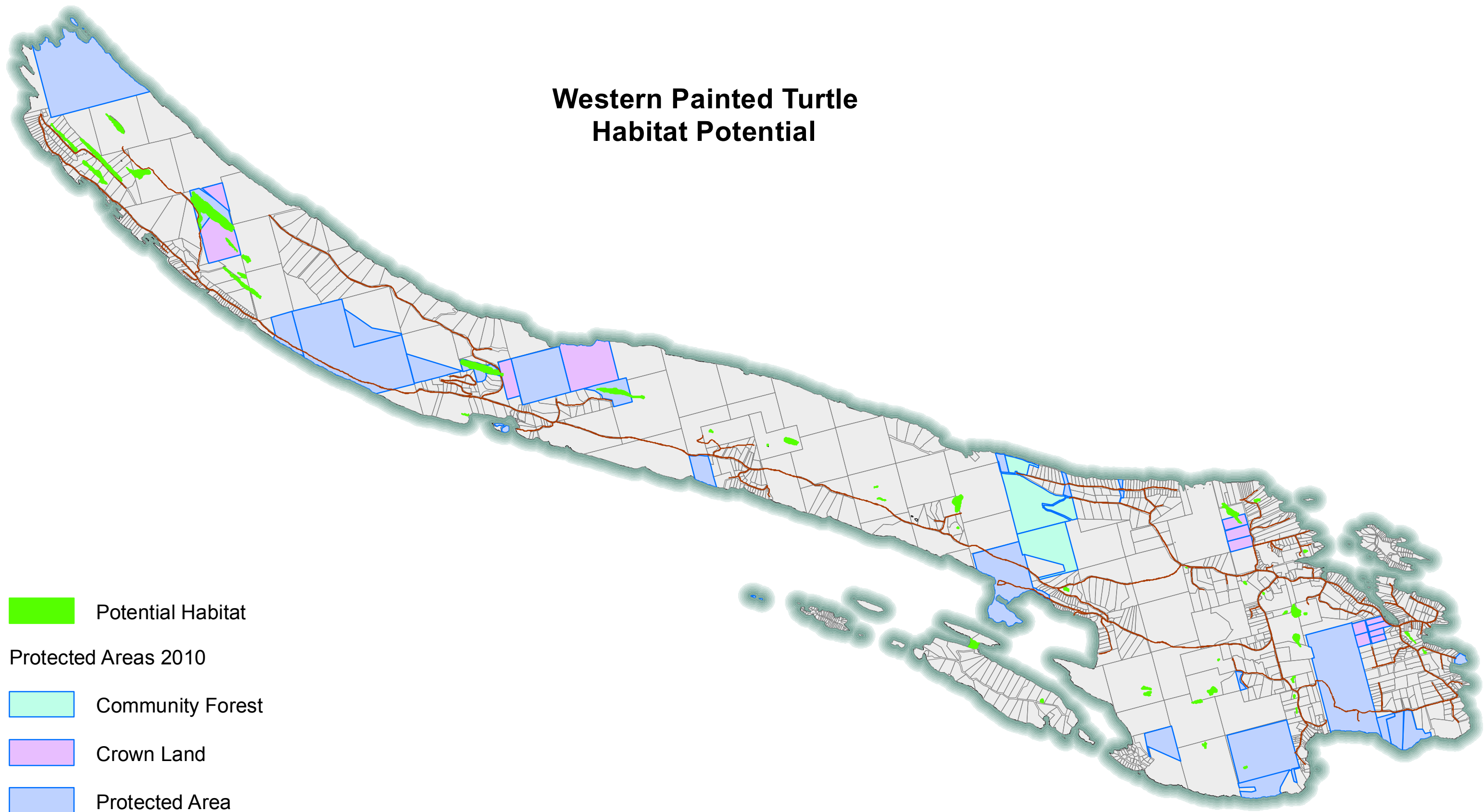
Area of potential habitat	56.58 ha
Portion of Galiano Island with potential habitat	0.94 %
Area of potential habitat with protected status	24.16 ha
Portion of potential habitat with protected status	42.70 %
Portion of Galiano Island with protected status	19.30 %


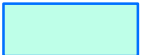
Though nearly half of the potential habitats consist of protected areas, most of them occur near, or alongside main roadways. Luckily, there is little vehicle traffic on Island which significantly reduces this threat. Of the only known wetland which harbours wild turtles, Laughlin Lake contains an unconfirmed sighting of the Western Painted Turtle, but confirmed sightings of Red Eared Sliders, which apart from providing competition, could introduce disease and parasites harmful to the Western Painted Turtle. This can be considered the threat to which the Western Painted Turtle is most sensitive to on Galiano Island.

**Recommendations:**

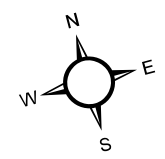
- Continue to monitor the wetlands across the Island
- Restore any degraded areas
- Reach out to private landowners who have potential habitats on their land.

# Western Painted Turtle Habitat Potential



-  Potential Habitat
- Protected Areas 2010
  -  Community Forest
  -  Crown Land
  -  Protected Area

Produced By: Galiano Conservancy Association  
Map Date: March 2011  
Scale: 1:59,000  
Projection: UTM Zone 10 NAD83



### Sharp-tailed snake (*Contia tenuis*)



BC: Red-Listed

Provincial: S1 (2007)

COSEWIC: Endangered (2009)

Global: G5 (2006)

Conservation Framework Priority: 1

Galiano Island Status: Unconfirmed

#### **Description:**

The Sharp-tailed snake is a very small dark-brown and red reptile that is often confused with garter snakes. One of their more interesting traits is teeth perfectly designed for swallowing slippery slugs. They hibernate in the winter months from November to February and are most active during moist conditions of early spring and fall. During summer months they stay clear of the heat by hiding underground and are very seldom spotted.

#### **Habitat:**

Very elusive, this species typically lives on south-facing rocky slopes and small openings in Douglas-fir/arbutus forests and is generally found under logs, rocks, fallen branches, or other cover in oak woodlands and meadows.

#### **Range:**

They range from southern British Columbia to southern California.

#### **Threats:**

Habitat loss, fragmentation, degradation and road mortality from expanding urbanization such as housing developments and road building are the main threats. The Sharp-tailed snake is associated with old-growth forests of the Coastal Douglas-fir zone, of which only 0.5 percent is left.

*Scope:* TBD

*Severity:* TBD

*Immediacy:* TBD

#### **Current Status:**

Number of EOs:

EO Comments:

Number of Protected EOs:

Population Size:Range Extent:Landowner Contact:

171 possible

17 visited + 24 previous contacts for monitoring

Viability: **High**

Area of potential habitat	323.15 ha
Portion of Galiano Island with potential habitat	5.35 %
Area of potential habitat with protected status	166.83 ha
Portion of protected areas with potential habitat	51.63 %
Portion of Galiano Island with protected status	19.30%

50% of the potential habitat occurs in protected areas and coupled with the low amount of development the snake has a good chance of subsisting. One threat is the growing coverage of Scotch Broom on many of the habitat sites. Degrading the food web with which the Sharp tailed snake is dependant on. Also, domesticated cats have been known to play with and kill the small harmless snake, although most of the potential habitat does not occur on small private lots.

**Historical Data:**

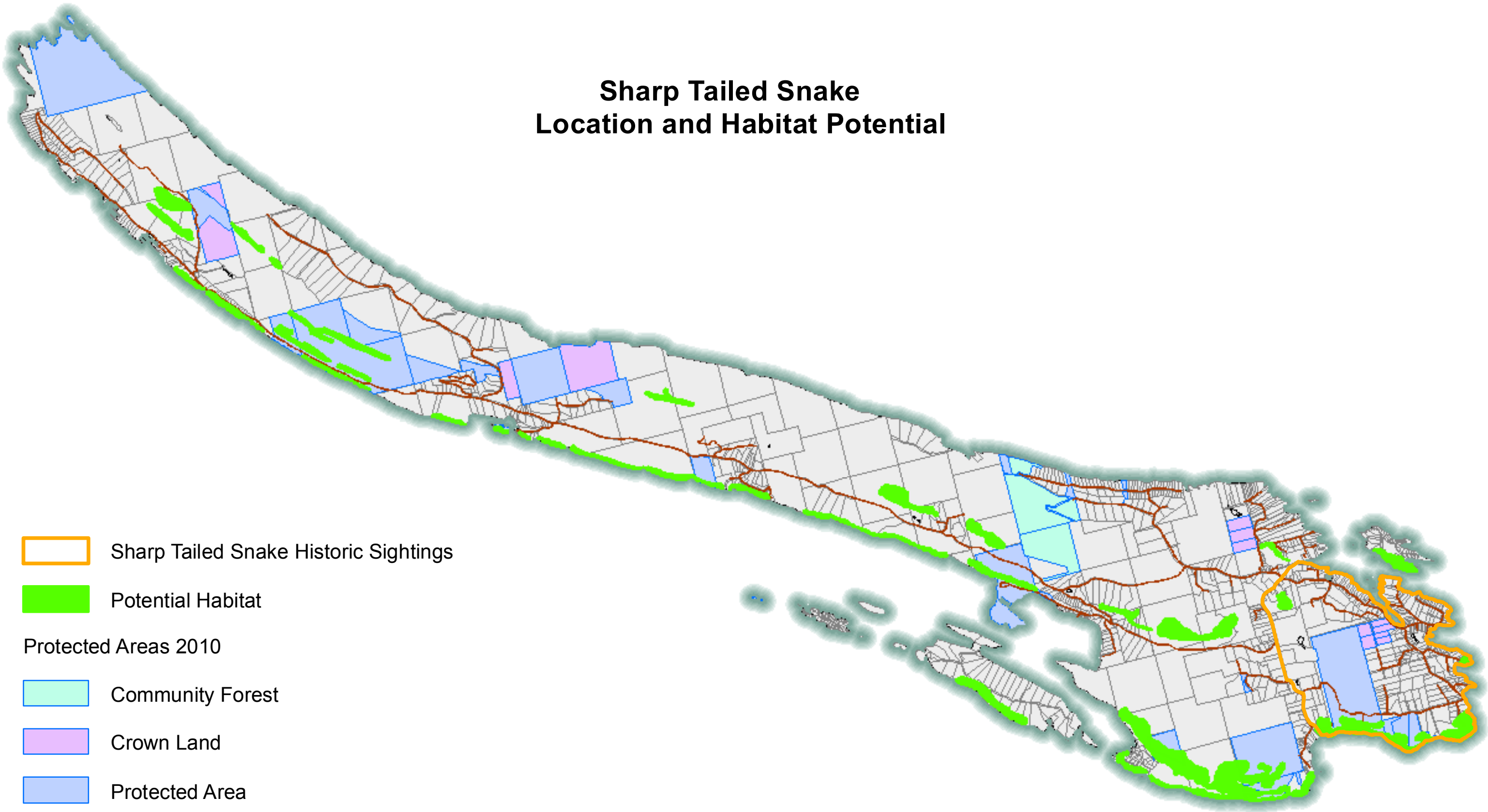
In the spring of 1981 eight snakes were found under a board in the Southeast corner of the Island.

**Recommendations:**

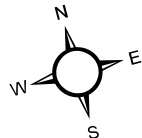
- Continue to monitor for the snake
- Continue doing outreach with the local community
- Keep potential habitats protected



# Sharp Tailed Snake Location and Habitat Potential



Produced By: Galiano Conservancy Association  
Map Date: March 2011  
Scale: 1:59,000  
Projection: UTM Zone 10 NAD83



## Appendix

### B.C. List Status

**Extinct:** Species that no longer exist. This status is only assigned if the Global Conservation Status rank is GX.

**Red:** Includes any indigenous species or subspecies that have- or are candidates for- Extirpated, Endangered, or Threatened status in British Columbia. Extirpated taxa no longer exist in the wild in British Columbia, but do occur elsewhere. Endangered taxa are facing imminent extirpation or extinction. Threatened taxa are likely to become endangered if limiting factors are not reversed. Not all Red-listed taxa will necessarily become formally designated. Placing taxa on these lists flags them as being at risk and requiring investigation.

**Blue:** Includes any indigenous species or subspecies considered to be of Special Concern (formerly Vulnerable) in British Columbia. Taxa of Special Concern have characteristics that make them particularly sensitive or vulnerable to human activities or natural events. Blue-listed taxa are at risk, but are not Extirpated, Endangered or Threatened.

**Yellow:** Includes species that are apparently secure and not at risk of extinction. Yellow-listed species may have Red- or Blue-listed subspecies.

**Exotic:** Species that have been moved beyond their natural range as a result of human activity. Exotic species are also known as alien species, foreign species, introduced species, non-indigenous species and non-native species. Exotic species are excluded from the Red, Blue and Yellow lists as a Provincial Conservation Status Rank is not applicable (i.e. SNA)

**Accidental:** Species occurring infrequently and unpredictably, outside their usual range. Accidental species are excluded from the Red, Blue and Yellow list as a Provincial Conservation Status Rank is not applicable (i.e. SNA)

**Unknown:** Includes species or subspecies for which the Provincial Conservation Status is unknown due to extreme uncertainty (e.g., S1S4). It will also be 'Unknown' if it is uncertain whether the entity is native (Red, Blue or Yellow), introduced (Exotic) or accidental in B.C. This designation highlights species where more inventory and/or data gathering is needed.

**No Status:** Includes species that have not been ranked (i.e. Provincial Conservation Status Rank is SNR). No Status is also assigned to an animal when all subspecies or populations of a species are assigned to either the Red List or the Blue List. For example, there are two populations of Western Painted Turtle in B.C.; one population is on the Red list, the other is on the Blue list. The species record for Western Painted Turtle is therefore not assigned to a list.

### Provincial Conservation Status

Provincial Ranks apply to a species' or ecological community's conservation status in British Columbia. The number in parenthesis is the year the rank was last reviewed.

The ranks have the following meaning:

- X = presumed extirpated
- H = possibly extirpated
- 1 = critically imperiled
- 2 = imperiled
- 3 = special concern, vulnerable to extirpation or extinction
- 4 = apparently secure
- 5 = demonstrably widespread, abundant, and secure.
- NA = not applicable
- NR = unranked
- U = unrankable

### COSEWIC Ranks

- XX = EXTINCT: A species that no longer exists.
- XT = EXTIRPATED: A species that no longer exists in the wild in Canada, but occurring elsewhere.
- E = ENDANGERED: A species facing imminent extirpation or extinction.
- T = THREATENED: A species that is likely to become endangered if limiting factors are not reversed.
- SC = SPECIAL CONCERN: A species of special concern because of characteristics that make it is particularly sensitive to human activities or natural events.
- NAR = NOT AT RISK: A species that has been evaluated and found to be not at risk.
- DD = DATA DEFICIENT: A species for which there is insufficient scientific information to support status designation.

### Global Conservation Status

- X = presumed extinct (species)/eliminated (community)
- H = possibly extinct (species)/presumed eliminated (comm.)
- 1 = critically imperiled
- 2 = imperiled
- 3 = vulnerable to extirpation or extinction
- 4 = apparently secure
- 5 = demonstrably widespread, abundant, and secure.
- NA = not applicable
- NR = unranked - Global Rank not yet assessed.
- U = unrankable

### Conservation Framework (CF) Priority

The conservation priority assigned to each species or ecological community under the Conservation Framework. A species or ecological community receives a conservation priority of 1 (highest) through 6 (lowest) for each of the three [Conservation Framework Goals](#). The value shown here represents the highest priority across the three Goals.

Note: the priority for all three goals can be viewed by exporting the results using the Export button at the bottom right corner of the Search Results screen.

### Miscellaneous

EO's = Element Occurrence (How many sightings have there been)