

Electoral Area 'H' Official Community Plan

Background Report

PART 4: ENVIRONMENT & CLIMATE CHANGE



INTRODUCTION

An Official Community Plan describes the long-term vision for the future of a community and a course of action to achieve it. This background report provides a snapshot of the current community in four parts: **People & Work; Land, Buildings & Spaces; Streets & Movement; and Environment & Climate Change**. This information will help inform a community discussion around the goals and policies for an updated Official Community Plan.



Part 4: Environment & Climate Change presents data about ecosystems, natural hazards and climate. This part will also cover information about environmental protection designations and initiatives within the area. The next several pages cover the following topics:

- Streams and Aquifers
- Sensitive Ecosystems
- Species at Risk
- Shorelines
- Parks and Protected Areas
- Wildfire Hazards
- Slope Hazards
- Climate Change
- Greenhouse Gas Emissions Reduction
- Energy Rebates

*Cover photo credits
Left: Brian Kingzett*

The last page of **Part 4: Environment & Climate Change** lists observations about ecosystems and the climate, and measures of mitigation. The purpose of these observations is to start a discussion about what direction the community would like to go in the future, and how to get there.

Streams & Aquifers

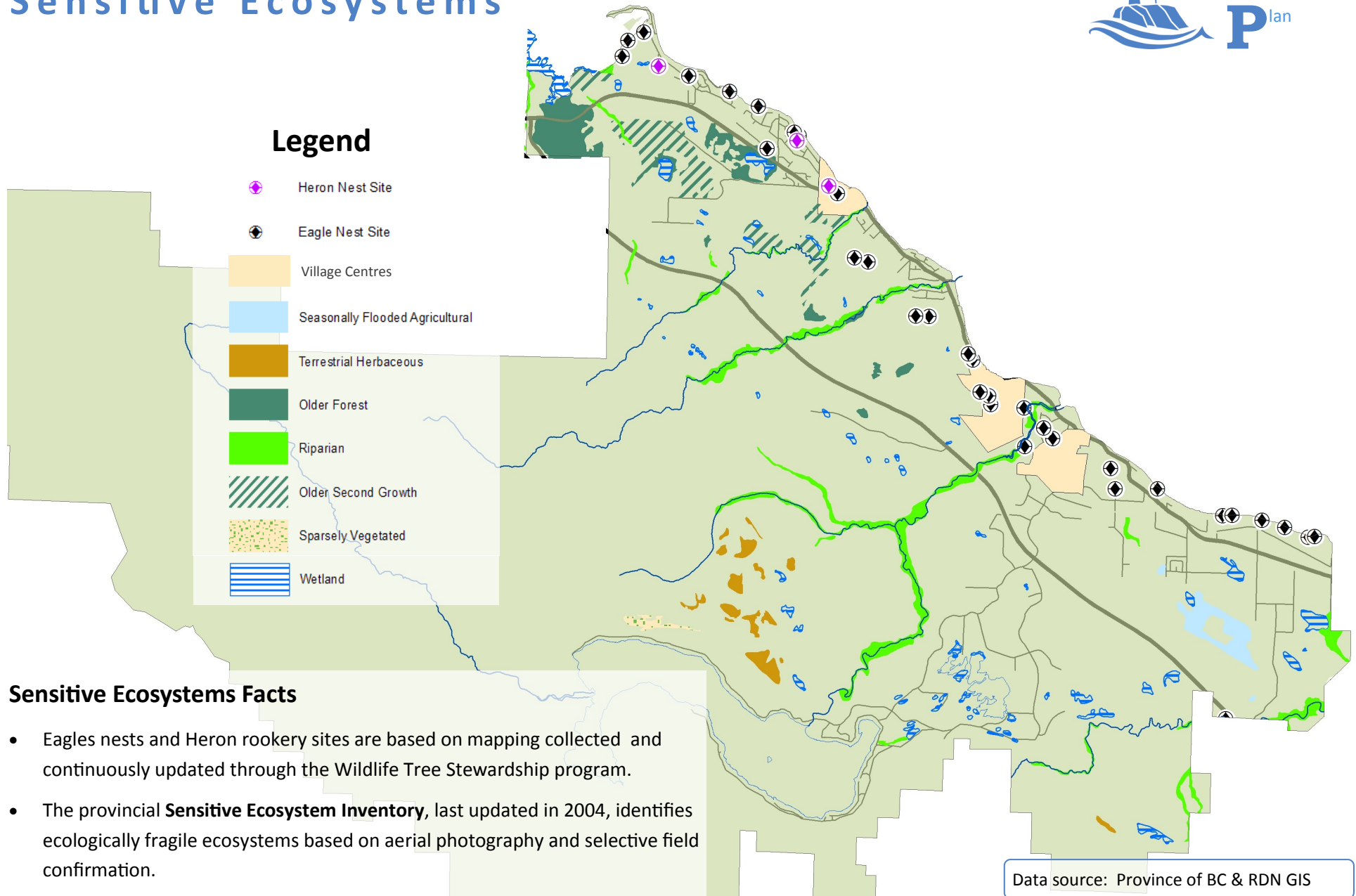


Streams & Aquifer facts

- The Electoral Area H boundaries closely match the **Big Qualicum Watershed**. Visit the **Drinking Water and Watershed Protection [interactive map](#)** of the **Big Qualicum Watershed** for more information on this watershed.
- Within the watershed, the sand and gravel aquifers are productive, though vulnerable to surface contamination.
- Watercourses in this region are important for fish habitat, particularly for Pacific Salmon and steelhead trout. Significant features in the watershed include the Big Qualicum River, Rosewall Creek, Thames Creek, Nile Creek and Horne Lake.

Data source: RDN Drinking Water and Watershed Protection & RDN GIS

Sensitive Ecosystems



Species at Risk



Great Blue Heron
Blue Listed



Douglas-fir / Dull Oregon-grape
Red Listed



Common Bluecup
Red Listed

Legend



Vertebrate Animal

- 1, American Water Shrew
- 2, Great Blue Heron



Ecological Community

- 3, Black Cottonwood - Red Alder / Salmonberry
- 4, Douglas Fir / Dull Oregon Grape
- 5, Grand Fir / Dull Oregon Grape
- 6, Red Alder / Slough Sedge (Black Cottonwood)
- 7, Western Red Cedar / Common Snowberry
- 8, Western Red Cedar / Vanilla Leaf

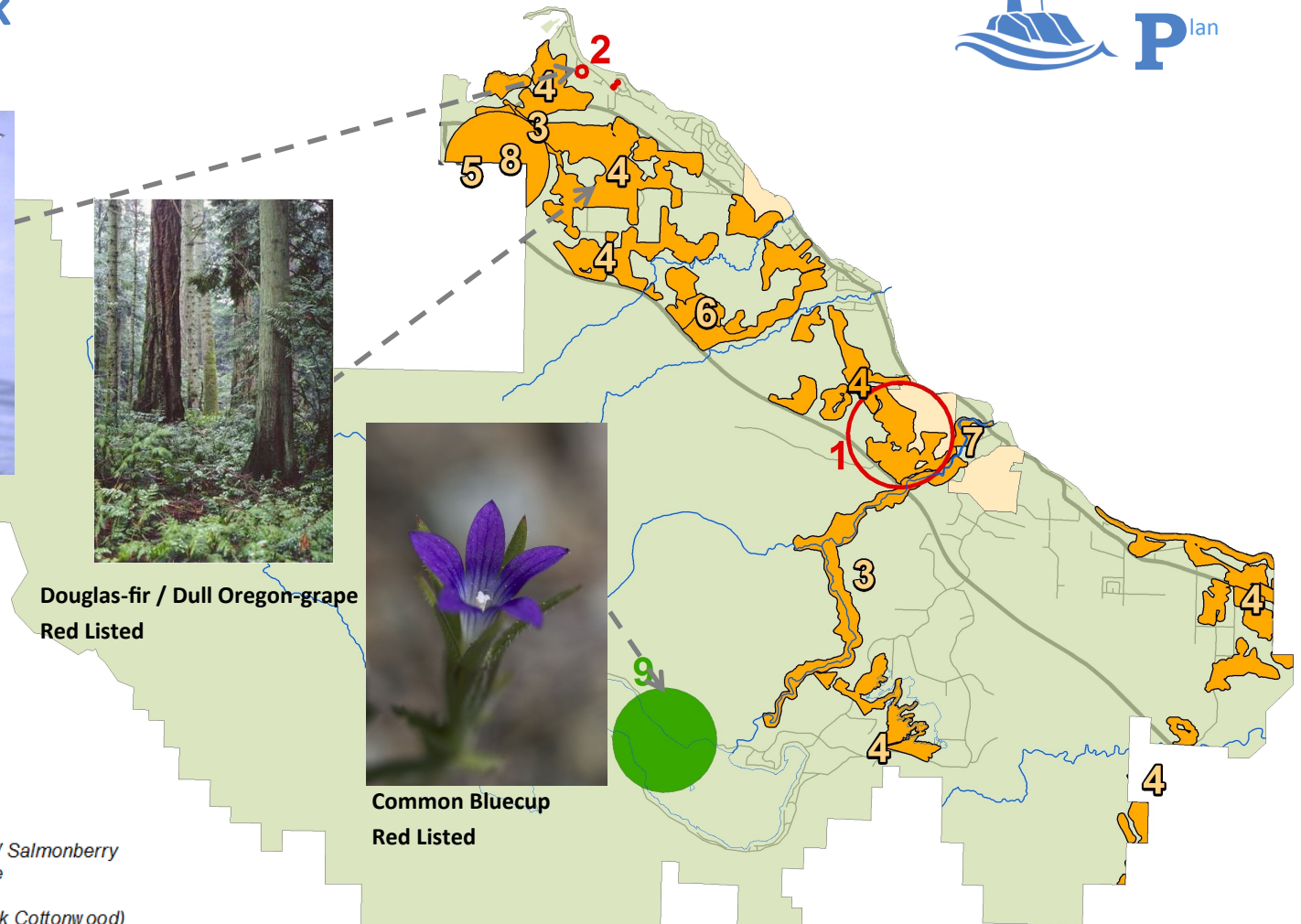


Vascular Plant

- 9, Common Bluecup
- 10, Least Moonwort



Village Centres

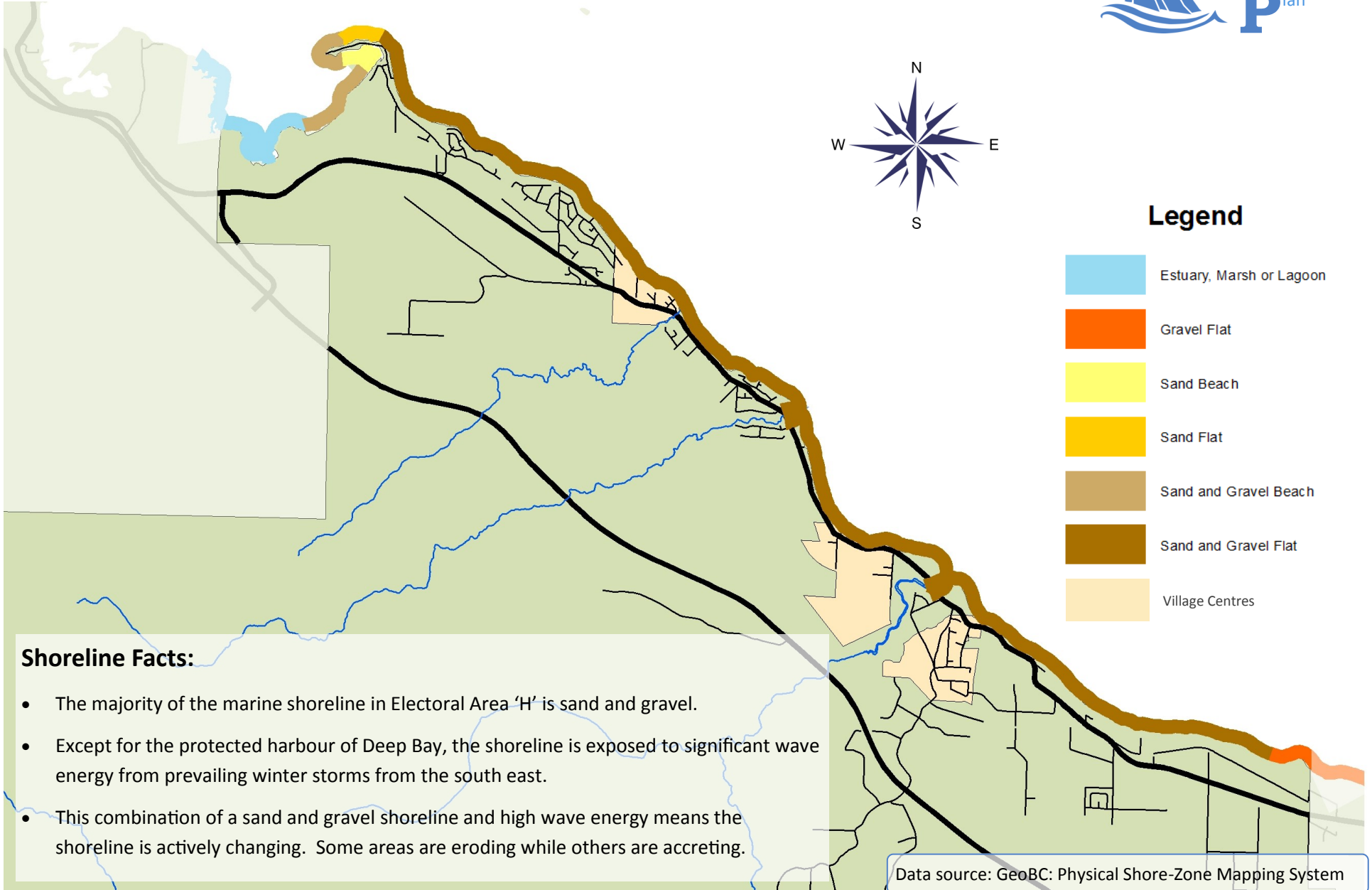


The BC Conservation Data centre identifies wildlife species with a **Red** rating (extirpated, endangered or threatened) or **Blue** rating (special concern) to species or ecological communities at risk.

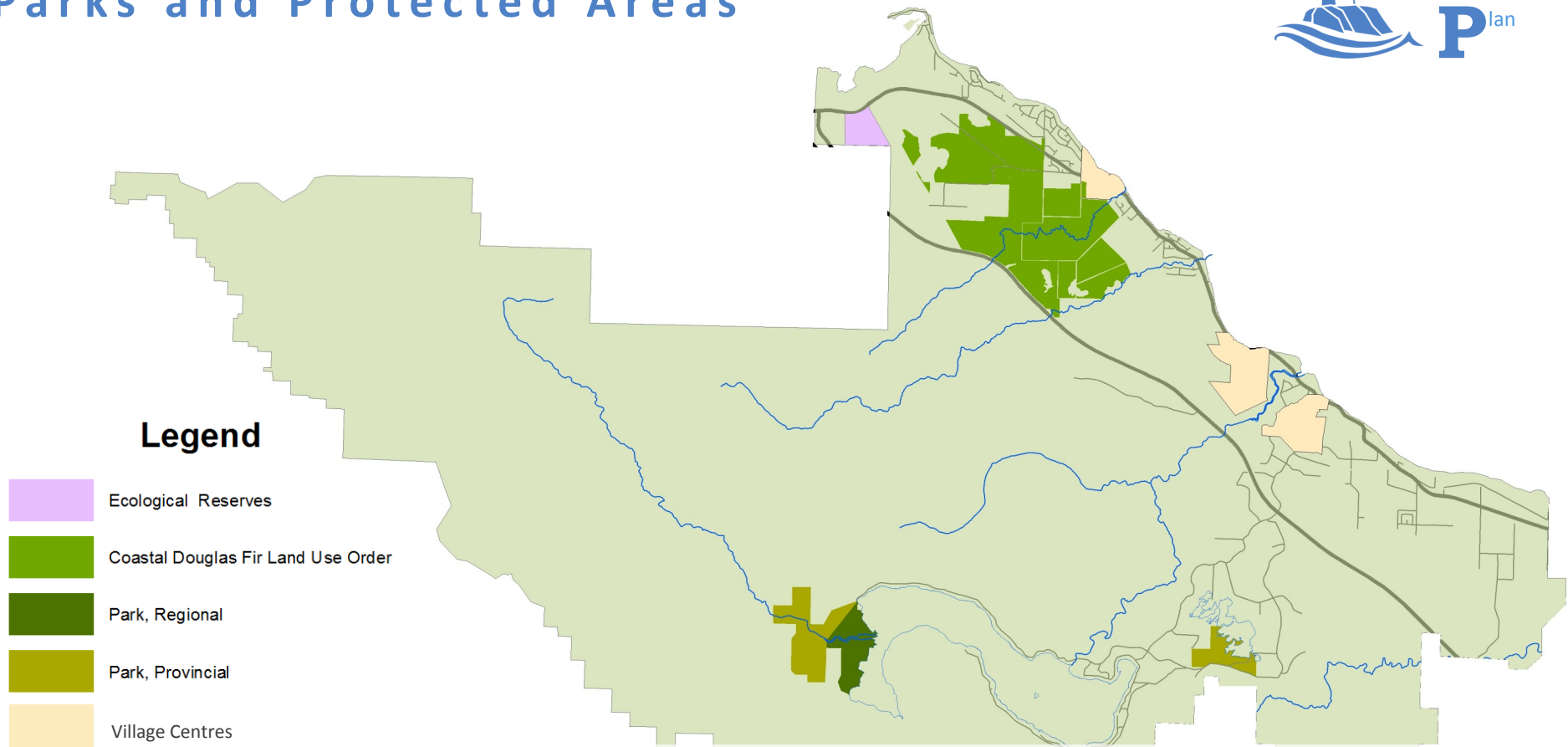
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Data source: Conservation Data Centre <http://a100.gov.bc.ca/pub/eswp/>

Shorelines



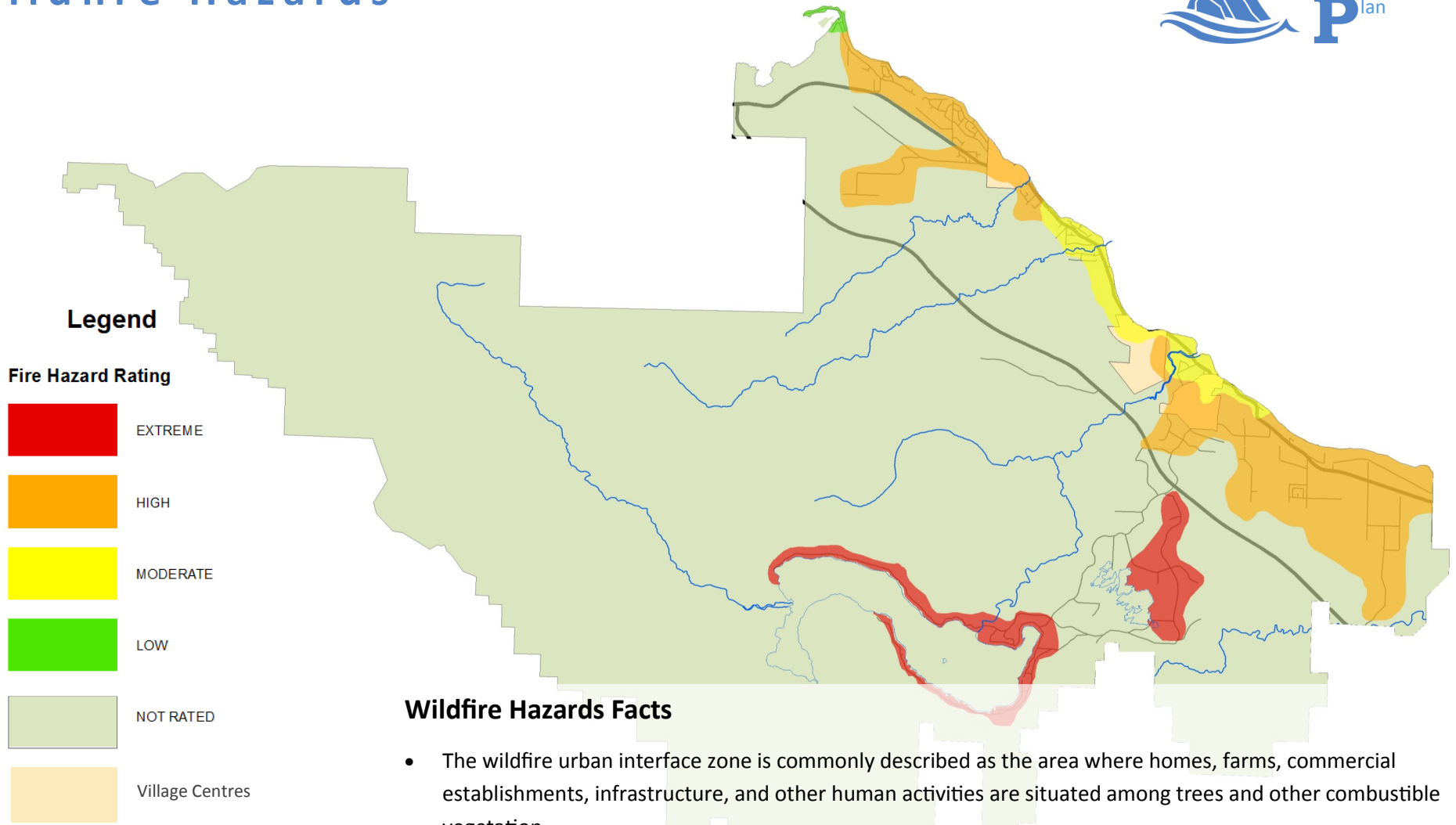
Parks and Protected Areas



Protected Areas Facts

- The Province and the RDN use protected areas to secure ecosystems and natural corridors capable of sustaining native plant and animal communities, maintain watershed health, and provide a recreation destination.
- Provincial protected areas (**Provincial parks** and **ecological reserves**) and RDN regional parks secure ecologically significant land perpetually for the protection and maintenance of important natural and cultural values.
- The **Coastal Douglas Fir Land Use Order**, enacted in 2011, protects all Coastal Douglas-fir moist maritime biogeoclimatic subzone plant communities within the designated lands outside Bowser.

Wildfire Hazards

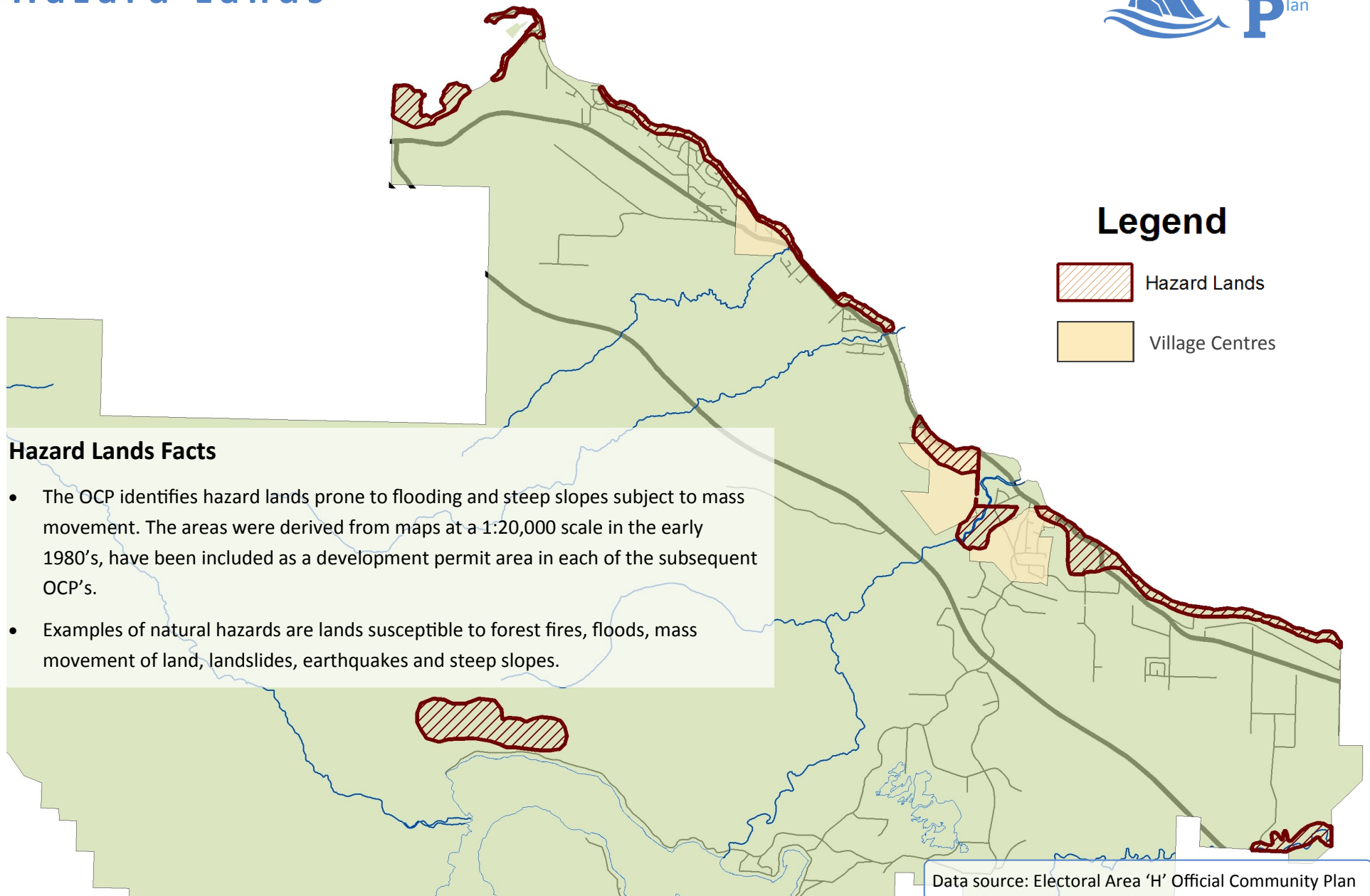


Wildfire Hazards Facts

- The wildfire urban interface zone is commonly described as the area where homes, farms, commercial establishments, infrastructure, and other human activities are situated among trees and other combustible vegetation.
- Human encroachment onto forested lands exacerbates the threat of wildfire in the interface zone
- The Intergovernmental Panel on Climate Change predicts climate change will extend the duration of fire seasons, and increase the number of wildfires.

Data source: Community Wildfire Protection Plan – Bow Horn Bay, BC (July 2007)

Hazard Lands

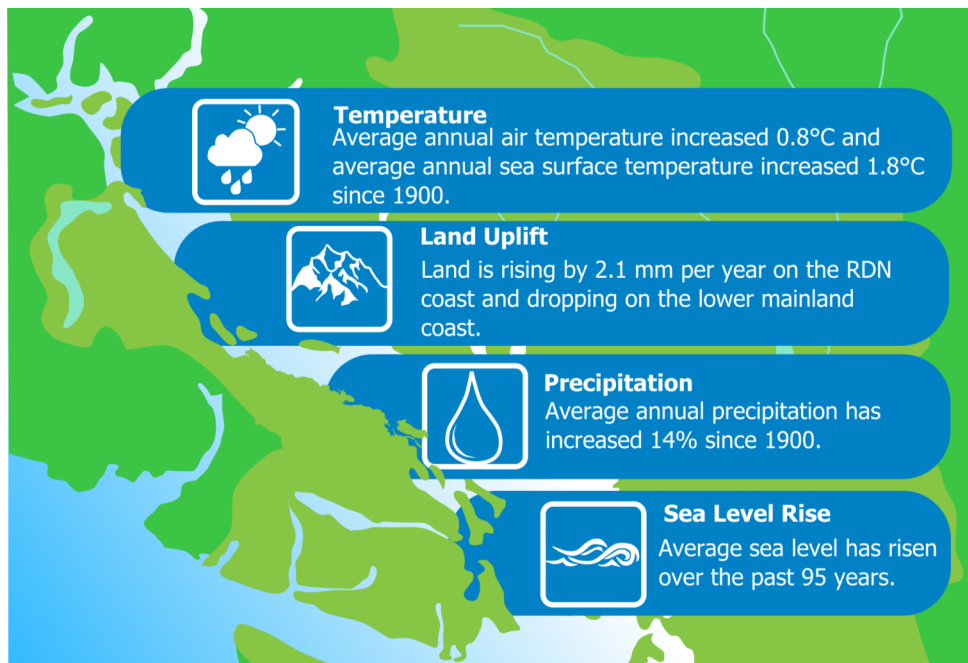


Climate Change Adaptation

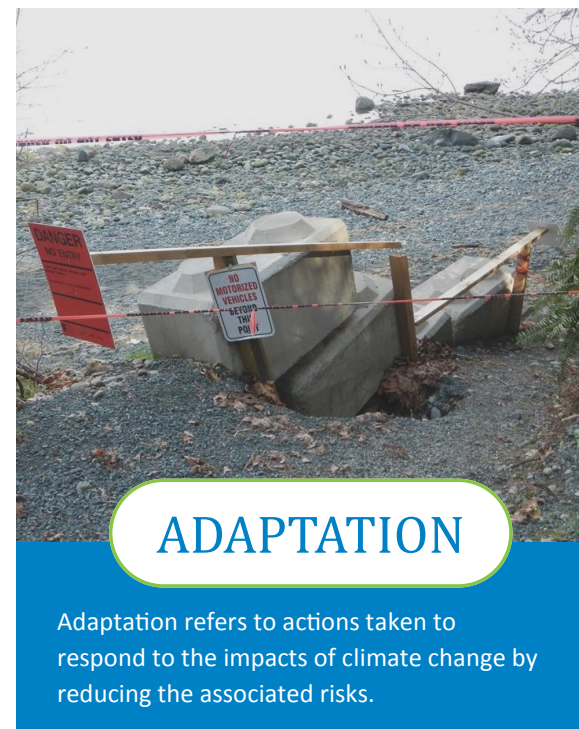
The rise in average annual air temperature being experienced globally drives indicators of climate change such as increased precipitation, sea level rise, and glacier retreat.

In Electoral Area 'H', anticipated impacts of climate change include:

- more frequent and severe storms causing flooding, landslide, and wind damage
- storms combined with rising sea levels causing coastal erosion and new areas being flooded
- more frequent drought in summer and increased rainfall in winter
- increased risk of forest fire



Factors affecting sea level rise in the Georgia Basin



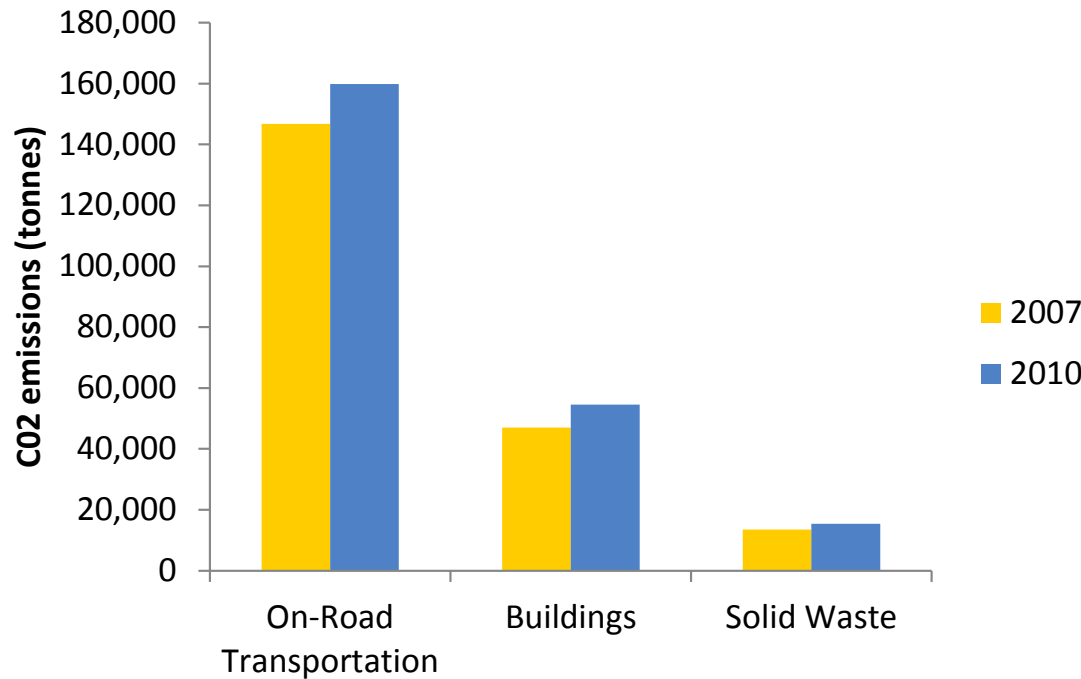
By 2100, the sea level around central Vancouver Island is projected to rise by up to **0.8 metres**. At the same time, storms are expected to become more severe and more frequent.

Data sources: Ausenco Sandwell, 2011. Climate Change Adaptation Guidelines for Sea Dikes and Coastal Flood Hazard Land use. BC Ministry of Environment. ; BC Government Climate Action Leadership: <https://engage.gov.bc.ca/climateleadership/>

Greenhouse Gas Emissions



GHG Emissions for RDN Electoral Areas



from 2007 to 2010
per capita GHG emissions¹
in tonnes increased from

5.8
to
6.1

Greenhouse Gas Emissions Facts:

- Both total and per capita GHG emissions in RDN electoral areas increased between 2007 and 2010.
- The RDN set an emissions reduction target of 80% below 2007 levels by 2050. Based on projections in the 2013 RDN Community Energy and Emissions Plan, to meet that target GHG emissions for the RDN would have to drop to 1.2 tonnes per capita.
- The Province of BC produces Community Energy and Emissions Inventories for all local governments in BC every two years, with updates to the base year (2007) inventories.

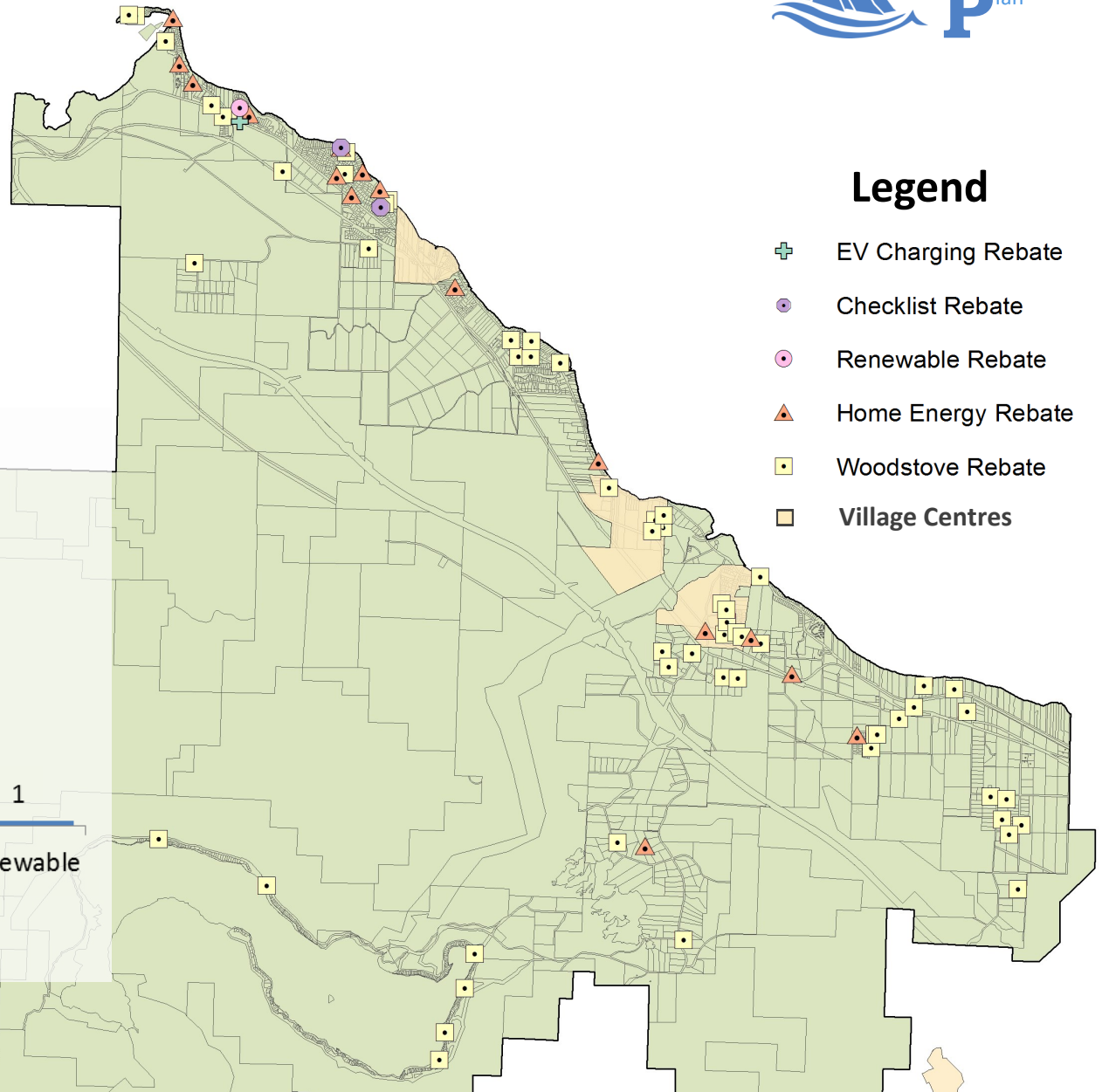
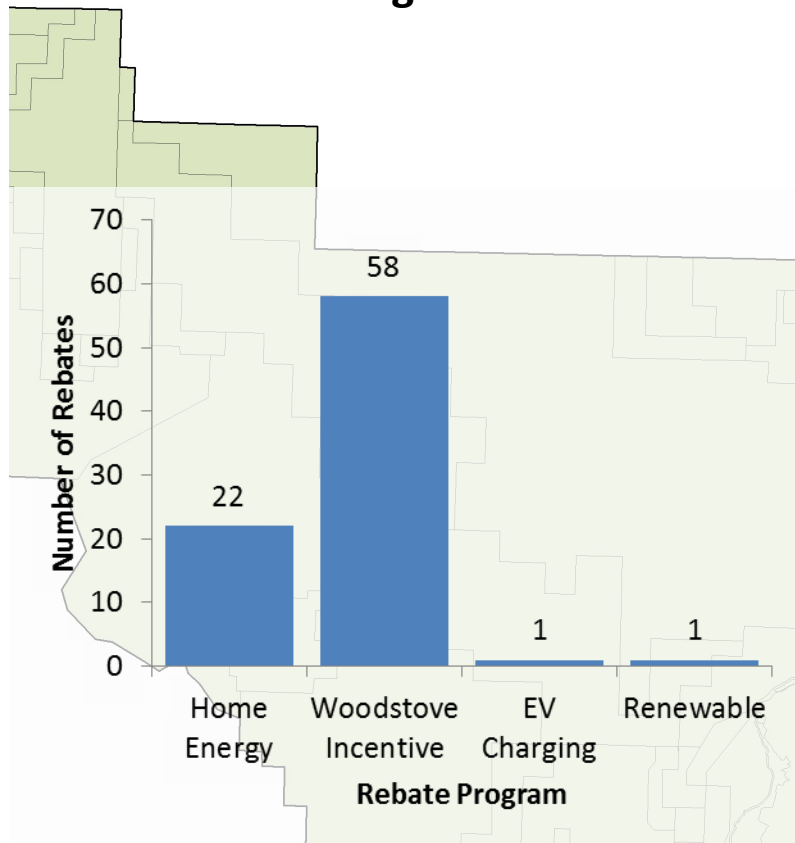
¹ these figures represent per capita GHG emissions for all RDN electoral areas combined, as data is not available for individual electoral areas in 2010. In 2007, per capita emissions for each electoral area were identical.

Data sources: Province of BC Community Energy and Emissions Inventory, 2014; RDN Community Energy and Emissions Plan, 2013.



Green Building Rebate Program

The Green Building Incentive Program has been running since 2011



Data source: RDN GIS & Energy and Sustainability

Summary & Observations



1. There are many natural assets in the area including streams supporting fish populations, healthy and productive aquifers, old growth and mature forests and several sensitive ecosystems and species.
2. Expansion of the Bowser Village Centre inland is limited by adjacent Crown Lands that are protected for their old growth ecosystems.
3. Hazard lands mapping is based on 30-year old data from maps at a very small scale, and while it generally identifies areas subject to flooding and steep slope hazard, would benefit from a new analysis based on larger scale data.
4. New hazards or more severe and frequent impacts of existing hazards are expected with climate change, particularly coastal flooding related to sea level rise.
5. Transportation is the largest contributor to greenhouse gas emissions, but in rural areas with few transportation alternatives it is not clear how these emissions can be significantly reduced.