

HOW IS OUR CLIMATE CHANGING?

We have always had an abundance of water in our region, and it has only been in recent years we have had to seriously consider water conservation and management.^{1,2} As we continue to learn more about the impacts of increasing temperatures on the Cowichan Valley,³ we are also learning about habitats and species unique to Cowichan that are threatened by environmental changes.^{4,5,6} Evidence directs us to consider the reciprocal link between the health of the environment and the health of community.^{7,8} The Cowichan Valley is known for working together to face challenges and to build community and resiliency. There are many dedicated organizations committed to addressing the needs of local climate change through a number of collaborative initiatives including the Airshed Protection Roundtable, Cowichan Stewardship Roundtable and the Cowichan Watershed Board.

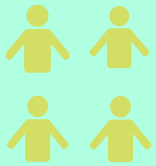
ENVIRONMENT

ENVIRONMENT & CLIMATE CHANGE

"Climate change is here and it appears that the risks to health are changing. For example, we are seeing a lengthening allergy season, insects that carry disease moving to new areas and intensifying extreme weather events . . . Air pollution including smoke from severe and frequent wildfires, can cause adverse respiratory health effects"

- BC State of the Air Report 2016⁹

When it comes to Climate Change, the most vulnerable are the most impacted



- People with special needs
- People living off the land
- People with chronic illness
- People with disabilities
- Children and Seniors

SPECIES LOSS = CULTURE LOSS

The consequences of observed and projected climate change have and will undermine Indigenous ways of life that have persisted for thousands of years. Key vulnerabilities include the loss of traditional knowledge in the face of rapidly changing ecological conditions, increased food insecurity due to reduced availability of traditional foods, changing water availability, Arctic sea ice loss, permafrost thaw, and relocation from historic homelands.

TREES & PEOPLE

For Vancouver Island to become carbon neutral based on our number of trees per acre our population would have stay at

600,000

That means we need to plant 950,000 trees to catch up.¹¹



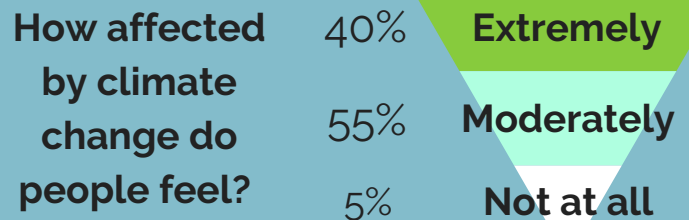
HOW DO WE FEEL ABOUT OUR ENVIRONMENT?

(Based on 118 respondents to surveys conducted in 2016)¹⁰



The majority of respondents indicated that the way to effectively address the impacts of climate change is to build community.

"Our river is almost gone...Without the river there is no life. If you don't have water, you don't have anything"

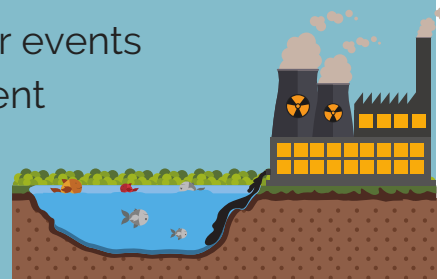


How well is Cowichan doing in preparing itself for climate change?

- Careful use of water consumption
- Waste management and recycling
- Growing gardens
- Making positive consumer choices

Top climate change impacts that people are most concerned about:

- Drought
- Water pollution
- Extreme weather events
- Land development
- Food security
- Air pollution
- Loss of wildlife



ENVIRONMENT

TEMPERATURE PROJECTIONS

Annual average is 1°C warmer, with 10 more frost free days annually, in the 2020s. ¹²

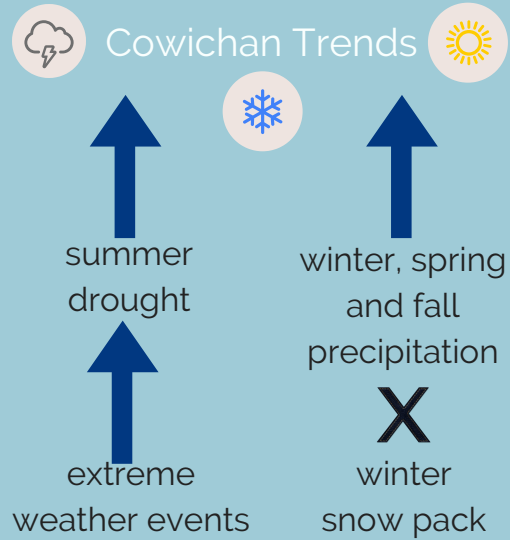
of glaciers on Vancouver Island

170 1970s  5 Today

BC IS ONE OF THE TOP 5 GREENHOUSE GAS EMITTERS IN CANADA AND 36% OF EMISSIONS COME FROM TRANSPORTATION ¹³

The largest industry emitters in Cowichan come from pulp and petroleum storage industries ¹⁴

CLIMATE EXTREMES



Water Levels in the Cowichan River

The Cowichan river has faced drought levels for the last 6 years as the summers continue to prove challenging for low lake levels and lower river flows. As a temporary response while many continue to work towards raising the weir, infrastructure was installed to pump water over the weir and into the river to ensure base flow levels are met. ¹⁵

Flooding

Sea levels are predicted to rise, combined with storm events, which will make flooding a reality in our flood plains and coastal communities. ¹⁶

IMPACTS AND BIODIVERSITY LOSS

"Biodiversity is important for practical and intrinsic reasons, providing clean air and water, mitigating impacts of climate change and disease, providing raw materials for new products and technologies, supporting cultural diversity, and offering recreational and educational opportunities."

Chemainus Biodiversity Education Project 2008 ¹⁷

MITIGATION

Waste Management

The CVRD's diversion rate - more recycling & less landfill - is 59%, one of the best in the BC. However, it is also noted that the CVRD has one of BC's highest rates of recycling contamination, at 15% ²³

2016	2017
24,595 t	30,608 t
total amount of garbage ¹⁸	

ECONOMIC BENEFIT TO CLIMATE CHANGE ADAPTATION



As we face increased summer droughts and decreased winter snow, we have the opportunity through increased regional water planning, water storage, and irrigation efficiency, to save ¹⁹ \$14m in our agricultural sector.

"The Cowichan Region is one of the most biologically diverse and productive areas in Canada. This region consists of a complex mosaic of biogeoclimatic zones and species - some found nowhere else on the planet" ²⁰

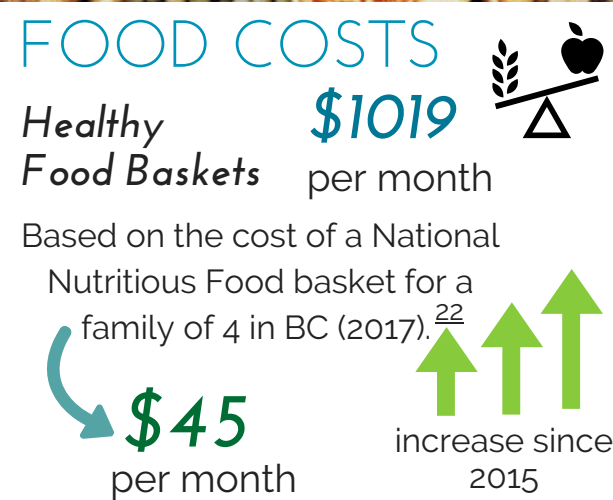
-12 Things, CVRD



ENVIRONMENT & Food Security

"Food security means that ALL members of our community have access to enough nutritious, safe, ecologically sustainable, and culturally appropriate food at all times."

-Cowichan Food Security Plan



Providence Farm, Duncan BC

FARMING

685 = **3.3%**
regional farms of Cowichan region

Arable land in CVRD
32,830 ha

Farming gross revenue (2005)
\$47,554,455²¹

FOOD PRODUCTION

Challenges:

- Water Shortages
- Rising Land Costs
- More Government Regulations
- Aging Farmers
- Land Development
- Use of farm land for animals & non-food crops

Response:

Cowichan Food Security Plan



58% of respondents have ability & knowledge to grow own food

34% of respondents have basic knowledge of local plants

Based on surveys conducted in summer, 2016²⁴



ADDRESSING POVERTY THROUGH HEALTHY FOOD CHOICES

	5 food banks		2019	2020
40985	soups	Meals served by Meals on the Ground	(tbd)	(tbd)
47444	sandwiches	Farmers Market Nutrition		
4216	hampers	Coupon Program participants provided by C.V. Basket Society (2018)	92	81
		Cowichan Community Kitchens meals served	1500	1350

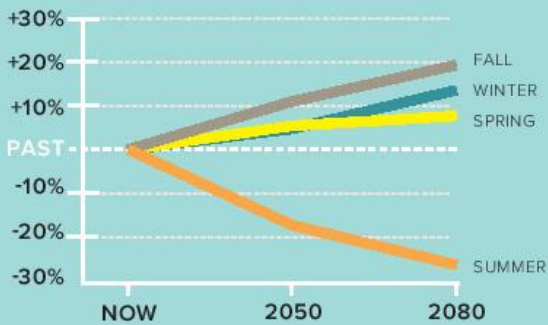


Cowichan, Our Warming Lands:

What we can expect as our climate changes

Summer will be drier, fall and winter wetter.

SEASONAL CHANGES IN PRECIPITATION



Design with nature to consider raingardens and native plants, reducing water use and creating absorbent landscapes to help manage heavy rains.

Green features retain up to 70 to 90% rain

Summers will get hotter.



Use your landscaping and building design to cool your home and reduce fire risk.

Cool roofs absorb 70% less sunlight and reduce summer air temperatures by 2-3°C

Rainstorms will grow more intense.



Protecting and restoring wetlands and river banks will help protect us from flooding effects.

An acre of wetland can store 1-1.5 million gallons of floodwater