

## **Imagining the best-case scenario future for the Shuswap in 2052**

By Jim Cooperman

Two years ago, after the New Year's Eve "snowmegeddon" storm, my first column of the new decade predicted the beginning of "the new roaring twenties with the roar not coming from wild dance parties, but instead from wildfires, intense storms, rising social upheavals and yet more wars." Sadly, most of these predictions are coming true and are joined with continued societal stress from the pandemic that refuses to go away. The weather and its impacts now dominate the news as we anticipate more crisis generating intense storms, heat domes and summers filled with smoke and the threat of local wildfires.

One result of the pandemic is that the resulted continued social isolation has prevented the completion of volume two of Everything Shuswap, because all of the chapters involve social interaction. With many restrictions still in place, many cultural activities are on hold, community events are cancelled, and the economy remains at half-throttle. Consequently, my columns have branched out to cover other fascinating topics such as the intentional communities of the 70s and 80s.

The plan for the final chapter of the last volume is the topic "What does the future hold?" The future for humanity has the potential to head in one of two directions, either towards environmental and social collapse or towards a more promising future where solutions to the current problems are working, society has become more equitable and sustainable, and health and happiness are the norm. In order to achieve a more promising future than what the cards are currently dealing, a number of pre-requisites need to be met that would lay the foundation for a better future.

With the climate continuing to heat up as more carbon and methane is pumped into the atmosphere, the earth's biological support system is in free-fall. It was easy to think that the Shuswap would be less impacted because of its geography, but in fact the temperature is rising faster in the north than in mid-latitudes and like most of the continent, we are in line for the increasing number of impacts from jet-stream instability. Thus, key to our ability to thrive in the future will be pre-emptively adopting climate change adaptation measures that will minimize the impacts from fires, heat, drought, storms and other emergencies.

Another key prerequisite is overall, societal and economic stability from the world level down to the regional level. It is possible that one day soon, political tensions could ease, and financial inequality will lessen given the need for everyone on the planet to concentrate on survival by working together as the planet overheats. If co-operation replaced competition, if the wealthy paid their true fair share, and if governments and citizens adopted common goals, all regions like the Shuswap would benefit.

Think back to how different our world was in 1992 when personal computers were just being developed, cellphones looked like large walkie-talkies, there were few homeless people, homes were affordable and massive forest fires, storms and intense droughts were a rarity.

Considering how massive societal changes are occurring now, what might the Shuswap be like in 2052? In the following series of articles, I will explore the possibilities that the future holds if the key pre-requisites are met to accelerate climate change adaptation, improve sustainability and achieve equitability.

What might the city of Salmon Arm and other local communities look like with mass migration likely, as people are forced to flee flooded coastlines and southern regions where temperatures are too hot to support populations? How will land and water be managed to support both a larger population, as well as to promote greater carbon absorption and conserve water? How will education work, and how will people keep in shape and enjoy sports and recreation when snowfalls are rare and summer temperatures are too high for outdoor activities? How will agriculture work? What will people eat?

One value of considering what a better future might look like is that it enables backcasting to identify what policies and programs are needed to reach to future desired state. By imagining an ideal future condition, one can better understand what is needed to get there. If we want our grandchildren to experience the best possible future, there is no better time than the present to help make that happen.

### **Doomsday glacier collapse is “Don’t Look Up” event that sparks switch to sustainability**

Imagining a better future in thirty years than the future we are heading for now, requires a major “Don’t Look Up” event that would cause a paradigm shift and result in a significant reversal in the current trends of ever-increasing income inequality, climate change disasters and corporate control of the political agenda. That event could come sooner than expected, as scientists are sounding the alarm about the impending collapse of the Thwaites glacier, which is the size of Great Britain, in Antarctica.

The aptly nicknamed 80 miles wide “doomsday glacier” is held back by a floating ice shelf that is rapidly destabilizing as shown, with cracks crisscrossing its surface. When it breaks apart, the glacier could slide into the ocean causing sea levels to rise upwards of 65 cm (two feet), which would then flood coastlines throughout the world. Although this event would be devastating, it would be exactly what is needed to move the climate crisis to the forefront for everyone, including those who deny climate change and those who continue to profit off the continued use of carbon fuels.

Once countries are faced with resettling millions of people, all other concerns will likely fade away as people unite to make the changes needed for both human survival and to tackle the climate crisis. All aspects of the economy and society will need to shift, as people realize that only by working cooperatively will the shift to decarbonization, greater income equality and true sustainability become possible.

Currently, Canada's economy is mostly based on shipping out raw resources, while the majority of goods are produced in and shipped here from primarily the U.S. and Asia, with most profits flowing to often distant, corporate shareholders. If and when the world finally decarbonizes, the structure of the economy will need to change resulting in less reliance on world trade and greater self-sufficiency. One way to achieve this goal could be to tax goods according to how far they are shipped, to give an advantage to local production.

Given the massive amounts of CO<sub>2</sub> that are pumped directly into the atmosphere by the airline industry, the tourism sector will also need to change. Flying to distant countries is a form of entertainment that will no longer be socially acceptable when millions of people are desperately trying to survive after their homes and businesses are underwater.

Most importantly, the crisis will alter most people's obsession with consumerism. The world is drowning in far too many manufactured items, from clothes to plastics to vehicles, while most of it ends up as waste. The crisis made evident by a sudden rise in sea levels should shock most people enough that they should accept a future where they do not have the freedom to purchase anything they want and as much as they want, whenever they want. Austerity helped win the Second World War and it would be needed again to battle climate change.

A critical factor that will be essential for survival as the planet heats up is innovation. The best minds will need to focus on developing new technologies, better batteries, more efficient heating and cooling systems, and more sustainable and productive farming techniques. Given that the Shuswap is already benefitting from local manufacturing companies that are inventing new tools and systems, our region is well posed to lead the way when the time comes.

Provincial and federal governments will have their hands full coping with the coastal flooding crisis, thus local communities will need to take on greater responsibilities. Fortunately, the Shuswap is well suited for self-sufficiency as we have ample farmland, water and a warm climate.

There will likely be a major shift to a circular economic system, where money circulates more within each community. The result will be more food and goods are produced and sold locally and gradually more of what we need to live comes from our own region. Cooperation will outpace competition, as communities, companies and neighbours work together to provide more of what is needed for all citizens to thrive in a rapidly changing world.

## **In 2052 crown land will be managed sustainably to absorb carbon and store water**

By 2031, after a decade of ever-increasing impacts on society due the rapidly warming climate, it became incumbent upon all levels of government to change how management of the land is managed, which includes water, soils, biodiversity and forests.

The next decade was a transition period, as decision-making shifted to local communities rather than distant bureaucrats. The main goals for forestry became carbon sequestration, watershed protection and ecosystem health, rather than lumber and fibre. Forest exploitation ended and there was a social consensus to conserve and expand forests to help mitigate climate change.

The loss of lives and homes to wildfires prompted intensive forest management near communities that includes development of fire-resistant stands and conversion of coniferous forests to ones mixed with deciduous trees. While electric powered machinery does much of the work, the Canada's Earth Corps, staffed by young people as part of their education and public service, handle most of the physical work.

While the number of fires continued to increase, the damage to property decreased as fire control became a high priority. Wildfires are now extinguished quickly thanks to high-tech satellite detection, locally stationed aircraft, drones and Earth Corps firefighters.

Key to this success is the contribution that improved water management has made. Nearly every creek in the region has a series of run of the river reservoirs that capture the spring run-off, which varies greatly due to climate instability. In addition to fire control, the stored water is used for human consumption, agriculture and aquaculture.

Adaptation efforts include intensive field-based inventory work, as well as regular monitoring of forest conditions. Forest steward professionals follow comprehensive ecosystem-based standards to protect and restore ecological integrity and live in the communities close to forests they manage. Extra attention is given to watershed management to meet community water needs and to help prevent flooding and landslides. Silviculture practices ensure that burnt areas are protected from damage by salvage logging and replanted as soon as possible with native trees suited to the higher temperatures and long droughts caused by the climate crisis.

Local management means that decisions are made by both Indigenous and local communities, while conforming to comprehensive, ecosystem-based standards. The overall goal is for forests to grow as long as possible under uneven-aged, mixed species management, to nurture healthy forests that absorb the most carbon dioxide, while developing systems to better cope with more diseases and pests.

The only timber that is harvested comes from ecological restoration activities and thinning for fire resistance. All timber is all used locally for construction, with any excess shipped within the province. In a few decades, the mixed species forests will provide options for small scale extraction of both coniferous and deciduous trees ready for harvest, using innovative processing systems.

Some forests are also managed for food production using ancient Indigenous techniques. Berries, mushrooms and some native plants are harvested to augment local agriculture.

As the sea level rose and flooded coastal areas, including large cities, people were forced to move from coastal areas to the interior of the province. In order to accommodate the increased demand for housing, tracts of suitable crown land were opened up for development and logging roads were upgraded to provide access for new communities.

In recognition that climate change mitigation must include protecting biodiversity, intensive community led ecosystem-based conservation planning identified networks of land and aquatic areas that are protected for water conservation, wildlife habitat, cultural activities and/or recreational use.

With air-travel restrictions in place throughout the world, vacationing within the Shuswap became the norm given there are so many options for carbon-free recreation. More trails were built throughout the Shuswap, including some that provided options for multi-day hiking and biking trips.

The overall goal for land management in 2052 is to conserve, restore and protect biodiversity, water, soil and healthy natural forests, all in an effort to promote resiliency. As well, efforts are increasing to better understand the rapid changes that are unfolding as the planet continues to heat up. With extreme weather events now the norm, there is an urgency to develop new ways to assist forest to adapt and develop technologies and systems to prepare for and cope with what is expected to be a far more intense and life-threatening future climate.

### **In 2052 sustainable, regenerative farming will be the norm in the Shuswap**

In order to make the changes required to make agriculture fully sustainable, most people will have to adjust to different food needs and desires. Both beef and dairy require vast amounts of land, water, and grains to provide protein that could otherwise be provided from plant-based sources. For example, if the entire population of the world became vegan, feeding everyone would require only one quarter of the farmland used now.

When carbon taxes were applied to cattle that belch methane, the prices for meat and milk products became too expensive and most people switched to alternatives

that are locally grown such as legumes and oats. The Shuswap became known as the Romano bean capital, as the growing conditions are perfect here for this “King” of the legumes that can grow upwards of 6-metres tall and harvesting methods have improved thanks to local development and manufacturing of innovative equipment. New recipes were also created locally for Romano bean meat alternatives made popular by restaurants and supermarkets.

Farming methods no longer rely on vast amounts of chemical fertilizers or pesticides and instead focus on regenerative, organic practices that create chemical-free, healthy soils. Cover crops that create green manure are now the norm, as well as crop rotation and no-till farming. Adapting to the changing climate is a key goal, given the increased number of heat waves and intense storms. Shade structures are needed for many more crops, planting times have shifted, and greenhouses use solar-powered fans to reduce temperatures.

Farms are now much smaller and farming is more intensive, as increasingly more food is produced here to feed the rapidly growing local population. In order to provide much needed housing, as well as more farm labour, a new classification was developed called craft farms where now greater numbers of people live and work. During the much shorter and less intense winters, crops are grown inside in vertical gardens under energy efficient LED lights.

Some of the best farmland in the river valleys is used for grain production with harvests milled locally for flour and cereals. Agri-forestry has also advanced so that more food is grown in partial shade in nearby forests.

While many people have switched to becoming vegetarians or vegans, those who have not are enjoying locally raised fish thanks to innovative aquaculture technology developed locally over thirty years ago that utilizes the waste for fertilizer. In addition to naturally raised chicken, turkey, and rabbits, insects are grown to provide protein additives for livestock, fish and humans.

Given that much of the food needed for local consumption is now grown and processed locally, diets for most people have adapted to include more fresh produce that can be cultivated over an extended season. During the winter months, most produce other than what is grown indoors are vegetables such as cabbage, carrots, beets and kale that are stored in solar powered, underground coolers. Now very popular fermented foods, such as sauerkraut, kombucha, pickles and kimchi that have outstanding nutritional value because they contain natural probiotics are produced locally.

Perhaps the most remarkable change in both local and national agriculture is the extensive cultivation of hemp, that is grown for a vast array of useful products as well as for its ability to absorb massive amounts CO<sub>2</sub> at double or more the rate than that of forests. Thanks in part to carbon tax subsidies, marginal lands that were once used for pasture are now growing hemp, which also helps to restore degraded soil.

Processing has improved thanks to technological advances and local hemp is used for building materials, plastic, paper products, clothing, and protein from the seeds for both animals and people.

Local agriculture is fully integrated into Shuswap communities, where there are many food hubs that provide cold storage, industrial kitchens, seeds and advice. While the goal is for most food to be grown and processed locally, by 2052 nearly half of residents' dietary needs are provided by local producers and food waste has nearly been eliminated.

### **Housing and infrastructure in a warmer Shuswap thirty years from now**

Given the challenges we face today regarding the lack of affordable housing and the vulnerability of infrastructure to intense weather events, these difficulties will only be magnified thirty years from now. It was clear that innovative, less costly building designs and construction materials were needed in order to provide homes and services for the refugees fleeing from the rising ocean levels and other impacts in ways that were both sustainable and more resistant to flooding and fires.

In order to accommodate the population increase, people adjusted to smaller living spaces, while enjoying more time spent outside and in community spaces. Many of the mega-homes have been converted to multi-family or group homes, with carriage houses in backyards and front yard lawns replaced by vegetable gardens. Solar powered heat pumps provide heating and cooling, along with geothermal systems.

New home construction utilizes hemp products such as hempcrete blocks, hemp wallboards and hemp insulation, as well as steel from recycled cars and truck frames. Conventional concrete has been mostly replaced by earth-friendly concrete that is made with a technique that releases far less carbon dioxide. For above ground construction, straw bales and rammed earth reduce construction expenses and provide more warmth in the winter and cooling in the summer.

Co-operative group housing is very popular, as there are lower costs and more social benefits when people share living arrangements, along with transportation. Working spaces are often combined with living spaces to minimize commuting time and costs.

When the demand for living spaces outstripped the supply, new designs for housing developments were created that allowed for greater self-sufficiency. New small communities were developed on crown land with off-the-grid homes that utilized water recycling systems, composting toilets, geo-thermal heating and cooling.

Many new homes are built into hillsides with the first floor mostly underground, which provides many benefits including providing a place to avoid the heat during the summers and to take advantage of natural warmth of the earth in the winter.

These houses are designed to be upside-down, with the bedrooms below and the kitchen and living area on the second floor.

The population of Shuswap communities increased exponentially due to migration from coastal areas and southern countries that became uninhabitable due to rising temperatures and harsh weather. To meet the demand for housing, urban planning focused on providing higher density and well-spaced commercial areas, so shoppers do not have to travel far to get the goods they need.

Streets are narrower and lined with shade trees. Vehicles are smaller, fewer in number and have hemp-plastic bodies and hemp-lithium batteries that last longer and hold a charge longer than the original batteries developed four decades earlier. Most people use bikes and scooters for local transportation, while the electric cars and trucks are often shared amongst a number of families.

Infrastructure, services and communities are designed around the principle of minimalism and decentralization, to reduce carbon emissions by ensuring that most needs are met within short distances. As well, all new buildings are built to withstand the rising temperatures and extreme weather events and existing structures were renovated to achieve the same goals.

Thanks to innovative engineering, wastes have largely been eliminated with recycled goods remanufactured locally and many products are designed for re-use. Any single use containers still in use are composted and then used as soil additives.

Despite the warmer and more unpredictable climate and the much larger population, life in the Shuswap has improved thanks to greater cooperation, along with structures and lifestyles that are more in tune with the natural world.

### **Social life and education in the year 2052**

The current trend of social isolation and virtual interactions began to reverse after the shock of sudden sea rise when the Antarctic glacier slid into the ocean. People realized the importance of finding joy within their own region, rather than focusing on commercialized entertainment, more screen time and travel. As every community in the Shuswap expanded in size, so did the opportunities for social engagement.

Thirty years from now, there are many more community centres that are busy daily with club activities, meetings, potlucks, music events, theatre and exercise, yoga, dance, acting and music classes. Local schools are integrated with these centres and students join with other members of the community to participate in events and help share the workload. In the summers, local parks are filled with outdoor concerts and dance, along with sports and recreation.

Neighbourhoods are friendly places with block parties, tool and vehicle sharing services, community gardens and potlucks. Building trust between neighbours is important for climate change adaptation as they are better able to help look after each other during extreme weather events.

There are more extended families living under one roof, allowing for grandparents to help with raising the children, as was the case prior to the twentieth century. As a result, the need for social services has declined, along with crime and alcohol and drug use. Cooperative living is popular in both urban and rural settings, where group living can add more joy through music, dance, theatre and storytelling, especially for single people.

Long bus rides for students have been eliminated long ago, as when the population number increased, many more high schools were built to accommodate the larger number of students. Outdoor learning is part of the curriculum and students spend as much time outside as they do inside. Education is integrated into society, so that students spend part of their class time learning real skills in the workplace as apprentices.

The curriculum has changed to reflect the huge challenges facing humanity due to the rapidly warming climate. Students study local history and geography, and every subject includes lessons and assignments that relate to the Shuswap region. The quest for developing better tools, systems and strategies for both climate change adaptation and mitigation dominates the agenda.

Post-secondary studies no longer required moving to a larger centre when Thompson Rivers University set up a satellite university in Salmon Arm. The Secwepemc University has three campuses. In the city, the Arts campus is connected to a large performing arts centre where students share the stages with local musicians and actors, as well as touring groups. Thanks to this facility and its faculty, the city has a symphony orchestra, novels have been published by graduates, full length films and documentaries are produced, public buildings and offices are filled with artwork, sculptures grace local parks, murals cover many walls, and the Shuswap has become famous for its focus on art and culture.

The Agricultural Campus is located in the Salmon Valley, where students learn how to organically farm using sustainable practices that improve the soil and help absorb carbon. Research is ongoing into improving yields without chemicals, developing new varieties of crops and finding better ways to cope with pests, diseases and harsh weather.

The Dr. Mary Thomas campus is located by the Salmon River at Switzmalph and focuses on Indigenous studies that include land stewardship, native foods and medicine, spiritual connections to the land, linguistics, ancient history, cultural heritage and crafts. Graduates use their skills and expertise to better honour

Indigenous knowledge within local culture, thus helping to improve the level of understanding and appreciation of the Secwepemc world view.