

Site C Dam & the Peace River

*A look at the potential ecological and agricultural impacts of the
planned Site C dam in British Columbia's Peace River Valley*

By Tim Burkhardt

Photos by Garth Lenz



I FIRST LAUNCHED my kayak into the cool waters of the Peace River three years ago, when the valley was alight with the verdant spring. As the meeting point of the Boreal Plains and the looming crags of the Northern Rocky Mountains, the Peace in spring is a place of contrasts. Dry, warm prairie grassland rolls away to the north, while the forests of the southerly bank gush with streams and waterfalls, swollen with the melt and fringed with cool ferns and mosses.

From the water, you can see grizzly bears and moose calves, rock-climbing beaver and swooping cliff swallows. The old forests of cottonwood and spruce provide woodland homes for many species of bats, birds and butterflies. The valley is a place where windswept high vistas give way to marshy wetlands, mixed aspen and spruce forests and rolling grasslands.

Paddling past some of the most fertile farmland in B.C., I'd observe this oasis for wildlife, outdoor-lovers, anglers and agriculturalists from the same level as the swans and trout. I have spent many a blissful day exploring the intricacies of the river, floating with the current down the impressive and picturesque valley, meandering back channels between the low islands bedecked in wild chive, native prairie wildflowers and towering stands of cottonwood and aspen. Each time I come to the valley, I am struck by how special the river is and how such a green and warm ecosystem could thrive so far north. This Peace River Valley's welcoming microclimate supports flora that is unheard of this far north—prickly pear cactus grows wild in the south-facing slopes and farmers in the valley grow especially succulent watermelon and cantaloupe in market gardens along the river.

Since that first spring I've fallen in love with the Peace, finding ways to enjoy the valley in any season. In the warm months I take to the water in my kayak or try my luck with a fishing rod, and when the weather turns foul and bitter cold I content myself to poke along the icy shore in snowshoes, following the tracks of small animals, or enjoying the incredible hilltop vistas offered of the snowbound landscape.

And the B.C. Government and BC Hydro are planning to put it all under water.

THE PEACE RIVER VALLEY has a long history of human use. In the mid-20th century, a desire to harness the power of the river resulted in proposals to create four major hydroelectric dams. Two

of these dams exist today: Site A is now the massive W.A.C. Bennett Dam that began operating in 1968, while, 23 kilometres downstream of this dam, Site B became the Peace Canyon Dam. A third dam, Site C, was proposed 83 kilometres downstream beyond the confluence with the Moberly River and was rejected after a 1982 B.C. Utilities Commission hearing and once again in 1989.

The B.C. government announced its intention to move ahead with the controversial project once more in 2010. According to BC Hydro, the \$8.3 billion Site C project would produce 1,100 megawatts of capacity, produce about 5,100 gigawatt hours of electricity each year and is needed to meet the long-term energy and capacity needs the province. The provincial government states that the natural gas industry is expected to further increase demand.

"Site C is essential to keeping the lights on while maintaining low rates for our customers," said Jessica McDonald, president and CEO of BC Hydro. "This project will build on the success of our existing hydroelectric system and benefit British



The Peace River Valley is a focal point for recreation and agriculture in the region.



Columbians for generations to come."

The B.C. Government also points to the thousands of jobs and economic benefits of constructing the dam as reasons for its approval, which was given despite the conclusions of Canadian Environmental Assessment Agency's Joint Federal-Provincial Review Panel, which examined Site C's environmental impacts. The JRP stated that the effects of Site C will be so significant that only an "unambiguous" need for power can justify the dam's construction. It also said that BC Hydro had not fully demonstrated the need for more electricity.

The Site C impoundment would flood 5,550 hectares and about 83 kilometres of the Peace River Valley as well as the lower portions of the Moberly and Halfway Rivers, drowning the islands, farmland and special places along the valley. Site C has long been controversial, largely because of the loss of critical wildlife and fish habitat and opposition from First Nations and landowners, who have argued that the dam is not necessary and the benefits are outweighed by the loss of important heritage and cultural sites and productive agricultural land. Also, larger concerns about the ecological impacts on the wider region haunt the project.

STRETCHING 2,000 KILOMETRES, the Peace is one of only two British Columbian rivers to drain into the Arctic Ocean, and is also an important piece in a continental puzzle. The landscape is an integral part of the Yellowstone to Yukon corridor, an iconic landscape that comprises the mountains, deep valleys and forested foothills stretching some 3,218 kilometres from Yellowstone National Park

in Wyoming, to the northern Mackenzie Mountains in the Yukon Territory. One of the last intact mountain ecosystems left on Earth, the Yellowstone to Yukon region is home to the full suite of wildlife species that existed when European explorers first arrived, and still maintains the wild places that have long captured the imagination of Canadians. The connections between these wild places are known to be absolutely essential to the

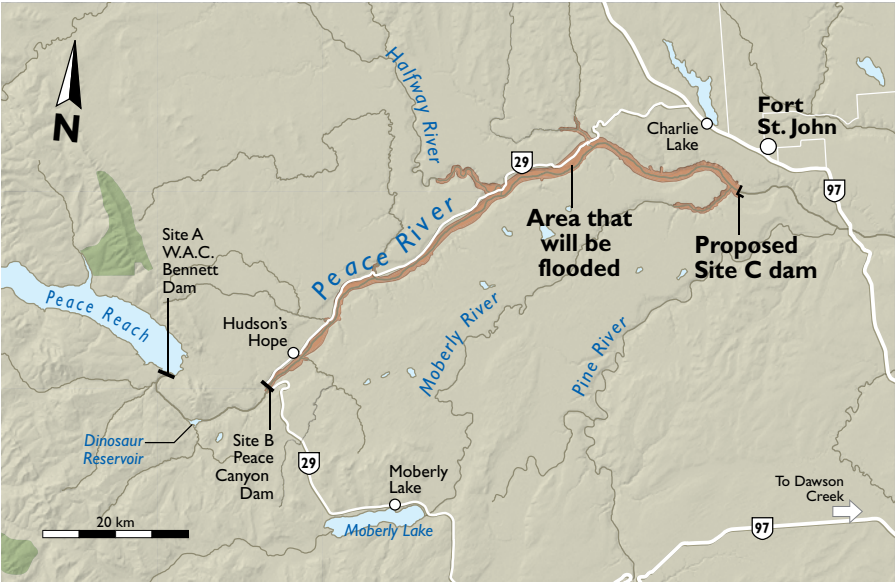
health of wildlife, ecosystems and biodiversity across large landscapes.

Within this corridor, the region dubbed the Peace River Break is a critical pinch point; the narrowest section in this vast, unique and largely intact mountainous

ecosystem, and a region that is already under pressure from all kinds of development. It is the only place along Canada's Rocky Mountains where a river flows east through the mountains and shapes unique ecological conditions of high conservation value. Central to the area is the Peace River itself, which "breaks" the Rocky Mountains and funnels warm, moist Pacific air east of the Rockies. Here the mountains merge with the northern and western extension of the Great Plains and the edge of the Boreal Forest and northern muskeg. Each of these different ecosystems contains elements of the other, and this convergence of distinct regions over a relatively small area supports range extensions of flora and fauna from distant places.

Despite the major dams upriver, the Peace River valley supports tremendous diversity of native wildlife and fish species, which is a reflection of the staggering variation in ecosystem conditions. Major carnivores that call the region home include black and grizzly bears, grey wolf, Canada lynx, wolverine, fisher and American marten. Ungulates include bighorn and stone sheep, mountain goats, elk, white-tailed and mule deer, woodland caribou and moose, many of which use the isolated islands in the river itself as calving grounds in the spring. Moose use the valley in abundance, comprising a very important part of First Nations culture and economy. Although only 6.5 percent of the provincial land mass, the Peace River Valley is home to over 20 percent of British Columbia's moose harvest. A continental crossroads, the diversity of Peace Break flora and fauna rivals other known areas of ecosystem convergence, such as in Waterton Lakes National Park in southern Alberta and the Crown of the Continent ecosystem in the southern interior of B.C.

"In a general sense, all animal and plant populations are shaped by, and persist because of, spatial connections," says wildlife biologist Clayton Apps, a research ecologist who studies wildlife movement across large landscapes and researched the impact of the Site C dam upon regional wildlife. He believes safe connections between habitats are critical for animals to move through and thrive within their home ranges. At the landscape scale, he says, these linkages allow wildlife to migrate and mingle across and between wildernesses, and make the necessary journeys in search of new homes and new mates. Restricting the movement and ability of animals to travel means that populations can become fractured and isolated, trapped within a tiny fraction



of their traditional range.

The plight of woodland caribou, whose numbers are gravely dwindling across B.C., is perhaps an illustrative example of these consequences. Keeping these connections for animals to roam across large landscapes requires thinking big, with concepts such as Yellowstone to Yukon gaining international recognition, as well as protecting the individual pinch points and removing barriers to migration.

IT’S NOT ONLY THE WILDLIFE habitat and migrations that will be affected by the proposed dam. The Peace River Valley’s unique microclimate supports an abundance of food crops, including corn, field tomatoes, cantaloupe and watermelon, which surprisingly thrive in this northern clime thanks to the warm Pacific air funnelled into the valley. The hot summers present a short growing season, but one that has proven to produce bountiful harvests, making the valley some of the best farmland remaining in British Columbia.

Wendy Holm, a professional agrologist with over 40 years of experience in agricultural economics and public policy in Canada and B.C., believes the valley could be a pivotal source of food for British Columbians. “As world prices for food escalate in response to inevitable pressure,” she says, “the land in the Peace River Valley is our food security Plan B.”

Often on my jaunts along the river, I’d pull out at the riverside market garden at Bear Flats to sample this local produce, which can also be found in farmers markets in towns throughout the region. With more support and a guarantee that the farmland will stay above water, the farmers of the valley could offer their bounty to supermarkets across B.C. and beyond. “The land to be flooded by Site C is capable of providing a sustainably produced supply of fresh fruits and vegetables to over a million people,” says Holm.

IN HIS RESEARCH report on the impact of Site C on regional wildlife for the Joint Federal-Provincial Review Panel, Apps concluded: “The pressures facing the Peace River valley, most especially the proposed Site C dam, have tremendous impact on the resilience of the broader landscape.” Barriers to the connections between wild landscapes, such as the impoundments created by hydro-electric development, could ultimately sever wildlife populations from each other and reduce their ability to adapt to climate change and encroaching human development. “In the near future,

the Peace region landscape is likely to be reduced to about one-half of its potential to support certain wide-ranging species,” reported Apps. “Site C will exacerbate this loss and will further erode our ability to conserve and recover some species.”

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IN THE SPRING I paddle along under the big sky above blue waters, watching bald eagles and osprey circle high above, their eyes searching the river for bull trout and Arctic grayling. The heat shimmering off the brown, grassy flats is a striking contrast to the ice-choked picture of the river a few months earlier, when I followed the tracks of an old wolf through the snow.

The Peace provides a year-round playground for those who love the outdoors, and is designated as a B.C. Heritage River. But the Outdoor Recreation Council has deemed the Peace River to be one of Canada’s most endangered rivers, and I worry with each dip of my paddle in the cool waters that this may be the last chance I have to enjoy this spectacular journey.

For the beaver that work industriously along the backchannels, and fishers hunting the marshy shoreline, for the moose and elk that rear their young upon the sheltered islands, for the trumpeter swans that nest upon riverside lakes and ponds and the osprey circling above my kayak, this waterway is life—there is no alternative.

The final decision on the Site C dam is currently before the courts, but for the time being we can all enjoy the valley’s spring explosion of resplendent green, the abundance of fresh locally grown fruits and vegetables from the market garden and the opulence of wild creatures that call the Peace home. 🐾

If the valley is flooded, tourism opportunities and jobs will also be changed forever.

Tim Burkhart lives in Chetwynd, a small town in the beautiful Peace region, with his faithful dog Mick, and spends his free time hiking, kayaking and exploring the wild places of Northeast B.C. He is currently a

master’s student at the University of Northern British Columbia, studying natural resources and the environment, and is the Peace River Break coordinator for the Yellowstone to Yukon Conservation Initiative.

