




Tracking
Raincoast
into 2012

RAINCOAST
CONSERVATION FOUNDATION





Raincoast is a team

of conservationists and scientists empowered by our research to protect the lands, waters and wildlife of coastal British Columbia. Our on-the-ground presence has given us a deep-rooted understanding of this vast coastline.

Our vision

for coastal British Columbia is to protect the habitats, foods, and lives of umbrella species. We believe this approach will help ensure the survival of all species and ecological processes that exist at different scales.

Investigate. Inform. Inspire.

We investigate to understand coastal species and processes.

We inform by bringing science to decision makers and communities.

We inspire people to be ambassadors for, and protectors of, this priceless coastline.

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WALKING ALONG THE BANKS OF THE RIVER, my eyes catch the movement of dark bodies beneath the rushing water. The spectacle of the returning salmon never fails to amaze me. Intellectually, I marvel at their navigational feats, physical transformation and ecological importance; emotionally, I am inspired by their astonishing perseverance and determination.

For thousands of years, these fish have returned to spawn in British Columbia's rivers and streams, using virtually every fresh-water environment accessible to them, even penetrating 1,000 km or more inland. The relatively unspoiled watersheds of BC's north coast, central coast and Haida Gwaii are an increasingly rare phenomenon: remnants of North America's last large ecosystem not dominated or degraded by human activities.

Did you know there are over 1,000 primary watersheds within the Queen Charlotte Basin that provide habitat to more than 3,000 runs of salmon from 5,000 spawning populations? This represents approximately 58 per cent of the salmon populations from Canada's west coast. These salmon play a key role in BC's natural ecosystems, nourishing a complex web of interconnected species.

All this richness is now threatened by Big Oil's plans to impose tar sands pipe lines and super tankers on the priceless coast of British Columbia. Enbridge is placing most of BC's best spawning, rearing and feeding grounds for wild salmon at risk. Whether from a catastrophic pipeline spill that flows from the headwaters of the Fraser, Kitimat, or Skeena rivers or an Exxon Valdez-scale tanker spill in the ocean that crosses straits, inlets and bays to estuaries – this proposal is lunacy.

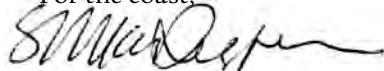
Legions of informed citizens would agree. Already more than 4,000 people have registered for the National Energy Board's community hearings to express their concerns about Enbridge's proposed Northern Gateway project. Raincoast, too, will participate as a formal intervener in the NEB's Joint Review Panel process for Northern Gateway.

Our work in preparing for the federal review of the Northern Gateway has revealed deep flaws in the cursory and superficial consideration Enbridge has given their environmental impact assessment. Enbridge has proven incompetent to evaluate the risk to these ecosystems, let alone be responsible for ensuring their protection.

BC's salmon ecosystems face grave threats from powerful corporate interests. But together we can stand against them. And together we can stop them.

Your financial support remains vital in allowing us to continue our work on behalf of wild salmon, as well as the bears, wolves, and other wildlife that depend upon them.

For the coast,



Misty MacDuffee
Biologist, Wild Salmon Program



Oil Free Coast

Raincoast's *Oil Free Coast* initiative focuses on the emerging threats posed to the coasts of British Columbia, Alaska and Washington state from the creation of an energy corridor for tanker shipments of tar sands oil. Enbridge's Northern Gateway project and Kinder Morgan's Trans Mountain pipeline expansions would use oil tankers to ship Alberta's tar sands crude oil through the coastal waters of BC and the Pacific



Northwest. These activities raise serious global, regional and local concerns. They introduce the threat of chronic and catastrophic oil spills in regions that host rare, endangered, vulnerable, and ecologically valuable species and ecosystems. Further, these routes provide outlets for the export of tar sands oil, exacerbating their staggering local impact and accelerating Canada's contribution to atmospheric carbon.



Taking the Stand against Enbridge

On the north coast, Raincoast is a formal intervener in the federal Joint Review Panel (JRP) process for the Northern Gateway project. In this, we review, evaluate, critique, cross-examine and give written and oral testimony on the risks to ecosystems and impacts to marine and terrestrial wildlife associated with Enbridge's proposal. Much of the knowledge and expertise Raincoast brings to the JRP comes from years of grueling marine surveys and subsequent analysis on marine animal abundance and distribution. We have published scientific papers and reports from this research including our flagship popular report, *What's at Stake: The cost of oil on BC's priceless coast*. This publication gives context to the marine waters of the Great Bear Rainforest and the risks of using this region as an energy corridor.

Protecting Salmon at Sea

While the construction and operation of oil pipelines crossing BC rivers presents substantial risks to freshwater fish habitat, perhaps the greatest threat to the salmon ecosystem is the risk of an oil spill in the marine environment. Our forthcoming "Salmon and Oil" report focuses on the marine transport phase of the Northern Gateway project. More than 5,000 known salmon populations use essential near shore habitats along the proposed tanker routes that would traverse BC's central and north coasts, Haida Gwaii and northern Vancouver Island.

Parks and Pipelines Don't Mix

BC is blessed with clean, fast moving waterways, many of which flow through our provincial parks.

Motivated to learn what's at stake for the parks that lie in the 14 major watersheds bisected by the proposed Enbridge pipeline route, our team conducted a risk analysis. A sophisticated GIS approach identified 34 protected areas located downstream, two within 50 metres of the proposed route. The Fraser River watershed, which hosts BC's most economically valuable salmon runs, contained the most parks at risk. Look for the release of Raincoast's "Parks and Pipelines" report in 2012.

Tankers and Tar Sands Oil Threaten the Salish Sea

On the south coast, Kinder Morgan wants to triple the amount of crude oil being shipped from Vancouver's Burrard Inlet through Georgia Strait,

the Fraser estuary, Gulf Islands, Haro Strait and Juan de Fuca Strait. Their proposed pipeline expansions would deliver 700,000 barrels of tar sands oil per day to Burrard Inlet by 2016. Kinder Morgan is seeking approval for additional increases in pipeline capacity by then, which would further expand tanker traffic. In December 2011, the National Energy Board approved Kinder Morgan's most recent request to divert more oil to their Burnaby terminal, consequently increasing tanker traffic. Despite requests to the NEB by Raincoast and other NGOs, this was done *without any public process*.

The implications of Kinder Morgan's plans are enormous for the Georgia Basin-Puget Sound ecosystem. This archipelago hosts wild salmon populations, migratory birds on the



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Pacific flyway, important estuaries, shellfish beds and the habitats of many rare, threatened or endangered marine and coastal species. The proposed tanker route also overlays much of the critical habitat of Canada's endangered southern resident killer whales. Already the Salish Sea is suffering intense pressures from growth; chronic oiling and spills will only intensify the declining health

of this ecologically fragile region.

Raincoast is working to inform the Salish Sea populace about the increasing ecological and economic threats from Kinder Morgan: assessing cross-border migratory species at risk from oil tanker traffic, and identifying the region's ecosystem services and recreational opportunities. Our studies will reveal how these natural assets would be put at risk.

Marine Birds



Caroline Fox



We continue to share our at sea marine bird information, painstakingly collected in the volatile waters of the Queen Charlotte Basin. A book authored by Caroline Fox, Raincoast biologist, about our experiences with marine birds is in the pipeline with Greystone Books. In addition to ongoing collaborations with colleagues at the University of Alaska and Environment Canada, we are contributing to a large-scale project led by Audubon California. Seeking to join different datasets from California to Alaska, this project will help planners identify regions important to marine birds, including offshore waters. Also, we are a member of the federally mandated Ancient Murrelet Management Team, sharing our extensive at sea Ancient Murrelet information and knowledge of marine threats such as Northern Gateway.



Surfin' Safari

We have an exciting project in the works with our friends at Patagonia, a leader among environmentally-minded businesses.

We are striving to alert more people about Enbridge's desire to impose tar sands pipelines and super tankers on our coast. How could we inform the people of California, in particular, as they are expected to be one of the primary recipients of the "world's dirtiest oil"?

While surfing, Dr. Chris Darimont, Raincoast's science director had an epiphany. How could surfers – the closest approximation of marine mammals among us humans – bring voice to this issue on behalf of whales, dolphins, porpoises and other species

at risk? An idea for a documentary film and new outreach campaign was born.

A year later, our research vessel *Achiever* was equipped with a most unlikely rigging: a surfboard rack. Members of Patagonia's famous surf team were aboard, including accomplished film maker Chris Malloy. We were off to immerse ourselves in the waves of stormy October, learn from the Great Bear Rainforest, and tell its story. What we experienced changed Canadian surfing. It also changed each and every one of us aboard, strengthening our resolve to protect this priceless coast.



Chris Darimont



Salmon for Wildlife

Salmon Carnivore Project

We have begun teasing apart the delicate relationship between bears and salmon, as revealed from the prized tufts of hair we have collected from our last three years of field work. Analyzed hair strands tell us how much salmon is eaten by bears, and whether it is enough to meet the demands of growth, hibernation and motherhood. With the help of local experts, we have already learned which parts of the study area provide particularly good bear habitat. Also we know now the minimum numbers of black and grizzly bears that call this area home. This baseline information about bears provides a critical requirement for safeguarding their future.

Translating Science to Policy

While it's not as fun or glamorous as field work, Raincoast needs to influence salmon policy.

Raincoast biologist Misty MacDuffee participates in federal decision-making and science processes that address fishing plans, the Wild

Salmon Policy, and eco-certification under the Marine Stewardship Council. Changing the way we manage salmon requires new knowledge, new approaches and *many* meetings.



Misty MacDuffee



Uniting with Community-driven Projects

After spending the last decade as a guest of, and contributor to, science and culture camps organized by Bella Bella's Qqs Projects Society, we now work closely with its conservation science arm, Coastwatch. These Heiltsuk leaders have been monitoring grizzly bears and salmon in the Koeys and neighbouring watersheds. Our combined efforts were illustrated beautifully in a feature article published in *Scientific American* magazine this past summer.

Plugging into the Conservation Economy

Initially, we could never have guessed how relevant our bear work might be to

the conservation economy. Raincoast has joined with old friends in Kitasoo territory to collaborate on an exciting new endeavour. Kitasoo leaders with the Spirit Bear Lodge and Spirit Bear Research Foundation have begun a research program to support the community's burgeoning ecotourism business. Together, we are deploying the same non-invasive hair-snagging DNA and remote camera techniques used by Raincoast in Heiltsuk territory.

Sustainable Fisheries Would Sustain Wildlife

BC's coastal grizzly bears face a myriad of threats, from habitat loss to trophy hunting. They also face fierce competition for their most important food source, wild salmon.

Pacific Herring

Raincoast has stepped up efforts to raise awareness about the ecological importance of Pacific herring, a key forage fish in the coastal marine foodweb. With commercial fisheries closures for three of the five major herring stocks, we have serious concerns regarding the health of herring in BC. This year also marks the opening of a winter fishery in the Salish Sea, which poses a potential risk to resident populations of herring, some of which are showing evidence of recovery.

We are also in the third year of a collaborative project with the University of Victoria, focusing on previously undocumented relationships among herring, their spawn events and terrestrial ecosystems. We have been working hard to bring our results to popular awareness; upcoming scientific publications will shed light on these novel ecosystem connections.



Competition may have intensified this past summer, as highlighted by Raincoast in the media. Commercial salmon fisheries discarded 20 per cent (by weight) of their catch, including 1.4 million pounds (636 metric tons) of chum salmon. Many of these fish (335 metric tons) were on their way to streams in the heart of the Great Bear Rainforest. These salmon are from depressed stocks that cannot sustain fishing pressure, necessitating their live release from capture. Although live released, many fish likely died from net and handling injuries before spawning.

The discarded chum salmon could have fed hungry bears, eagles, wolves, and other wildlife species that rely on these fish. Low salmon abundance also affects the health and repro-

duction of grizzly bears. In terms of nutrients, 335 metric tons of discarded chum salmon translates to nine metric tons of nitrogen and one metric ton of phosphorous that would have been cycled into ecosystem processes and forest growth.

Because BC's pink salmon fisheries were recently certified as "sustainable," a designation Raincoast supported under specific conditions, we will challenge this certification if current fishing practices persist. We are advocating for methods that reduce pressure on weak salmon stocks.

In other BC fisheries, boats have on-board independent observers or video cameras to monitor by-catch and compliance. BC's salmon fisheries would benefit from similar measures.



Fraser River Sockeye

Raincoast has been investigating the impact of salmon farms on Fraser River sockeye since 2007. We have responded with data, insight and expertise to help explain the complex challenges facing our province's most prominent sockeye salmon run.

Raincoast began monitoring juvenile sockeye salmon for sea lice in 2007. Using molecular genetics, we demonstrated that the major migration corridor for more than 30 Fraser River sockeye populations was through salmon farms in the Discovery and Broughton Islands. We have shown that juvenile sockeye are significantly more infected with lice after *they pass these farms*. Our studies reveal that a farm salmon processing facility is a point source for a live fish pathogen along a primary migration route for Fraser sockeye.

Although we have been expanding our focus towards broader ecological questions for Fraser sockeye, the recent identification of Infectious Salmon Anaemia virus (ISAv) in sockeye smolts from BC's central coast and other adult salmon from the Fraser River has renewed our attention to salmon

The Cohen Commission

We are pleased to convey that Raincoast's sockeye research was recently placed into evidence with the Commission of Inquiry into the Decline of Sockeye Salmon in the



Michael Price

Fraser River led by Justice Bruce Cohen. As a sign of his expertise, Raincoast biologist Michael

Price was called as an expert witness to give testimony at the Cohen Commission.

aquaculture. This virus is common to salmon farms in the Atlantic Ocean, and an outbreak on our coast could be catastrophic for all species of salmon and potentially other fish such as herring. In the coming year, our priority will be to test whether this virus has been present in sockeye smolts, samples of which date back to 2007.

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Large Carnivore Conservation

In 2005, OUR SUPPORTERS helped us purchase a vast guide outfitting territory and end commercial trophy hunting in an area approximately three times the size of Yellowstone National Park. During the five years since our acquisition, we have seen river valleys, which

were once lifeless as a result of hunting persecution, come alive with grizzly bears and wolves. The renewed presence of these animals has also spurred commercial wildlife viewing and local business opportunities.

With Raincoast's guide outfitter coordinator Brian Falconer leading the way, we began negotiations in 2010 to acquire a unique hunting tenure, which comprises the home of nearly all the world's free roaming spirit bears (a white coloured black bear). In 2011, our supporters helped us purchase this additional 3,500 square kilometer guide outfitting territory, effectively securing the heart of spirit bear habitat from commercial trophy hunting. Despite a restriction on killing spirit bears, regulations still allow trophy hunting of black bears that carry the recessive gene which is responsible for the spirit bear's white coat. Our purchase will protect one of the rarest bears in the world, and help safeguard the genetically unique rainforest wolves we have studied for over a decade.

Going forward, in collaboration with Coastal First Nations, Raincoast is actively investigating the potential acquisition of additional guide outfitting territories as we continue to pursue our goal of ending the trophy hunting of large carnivores throughout the Great Bear Rainforest.



Stop the War on Wolves



This past year Raincoast senior scientist Dr. Paul Paquet could be found throughout the media, combating the various scientifically and ethically bankrupt plans in western Canada to cull wolves. Provincial and federal

governments pushed policies that would see wolves subjected to lethal predator control on behalf of the logging, ranching and tar sands industries.



Paul Paquet



Friends of Raincoast

Profiles individuals who deserve special recognition for their dedication and generosity in helping protect the lands, waters and wildlife of coastal British Columbia.

NICHOLAS READ is a lifelong lover and protector of animals. In Raincoast, Nick sees kindred spirits and people sharing his passion for applied animal ethics. First drawn to the Great Bear Rainforest on a writing assignment many years ago, he fell in love with the wildlife and felt a duty to protect them. Nick has also been a great friend to Raincoast; when we needed big help to purchase both our hunting licences, Nick was the first to contribute and in a substantial way. Most recently, Nick’s passion for the animals of the Great Bear Rainforest has translated into book form. Last year Nick authored *The Salmon Bears* and *The Sea Wolves*, both available through Orca Publishers (www.orcabook.com).

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*We are sincerely grateful for your
ongoing support and investment
in Raincoast. Thank you!*



Chris Genova

Marine Operations – Achiever



THE FEATURES THAT MAKE BC'S COAST so special also make it challenging to work in; a rugged and roadless ecosystem thousands of square kilometres in size with remote inlets, islands and coast lines. *Achiever*, our coast guard certified research vessel has become our trusty steed. She and Captain Brian Falconer, safely transport, accommodate and facilitate our overflowing agendas from anchor to anchor.

This past year was a busy and eclectic one, as Heiltsuk youth, whale scientists, "trophy hunters" (with cameras), film crews and even surfers came on board *Achiever* to undertake various

programs, research and film projects. Surfers? Yes, a film documentary now underway with Patagonia will carry the message about the threats to BC's coast from tar sands oil to audiences worldwide.

We have logged over 6,000 hours on *Achiever's* engine and gear since its installation in 2006, so she is due for a detailed and regular maintenance check. In addition, this winter we must replace the main sail and upgrade one of her two radars. Your contribution to support this necessary maintenance would be greatly appreciated.



Brian Falconer

Tracking Raincoast 2012 photographers

Clare Aries: p.12 (Michael Price)

Dean Azim: p.8 (surfer in forest and bottom surf photo)

Caroline Fox: p.6 (Bonaparte's Gull and Northern Fulmar), p.11 (herring)

Gregory Franklin: p.14 (Spirit bear)

Jeremy Koretski: p.8 (top surf photo)

Guillaume Mazille: p.9 (Wolf with salmon)

Hiromi Naito: p.12 (sockeye)

Klaus Pommerenke/Bears-and-more.de: p.15 (wolves)

Jamen Rhodes/www.jamenrhodes.com: front cover, inside front cover, p.4 (whale), p.10 (salmon in river), p.17 (Chris Genovali),

p.18 (*Achiever*, Brian Falconer), back cover
Anita Rocamora: p.15 (Paul Paquet)

Gem Salsberg: p.8 (Chris Darimont)

Dave Scougal: p.15 (Nicholas Read)

Larry Travis: p.10 (grizzly with salmon)



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