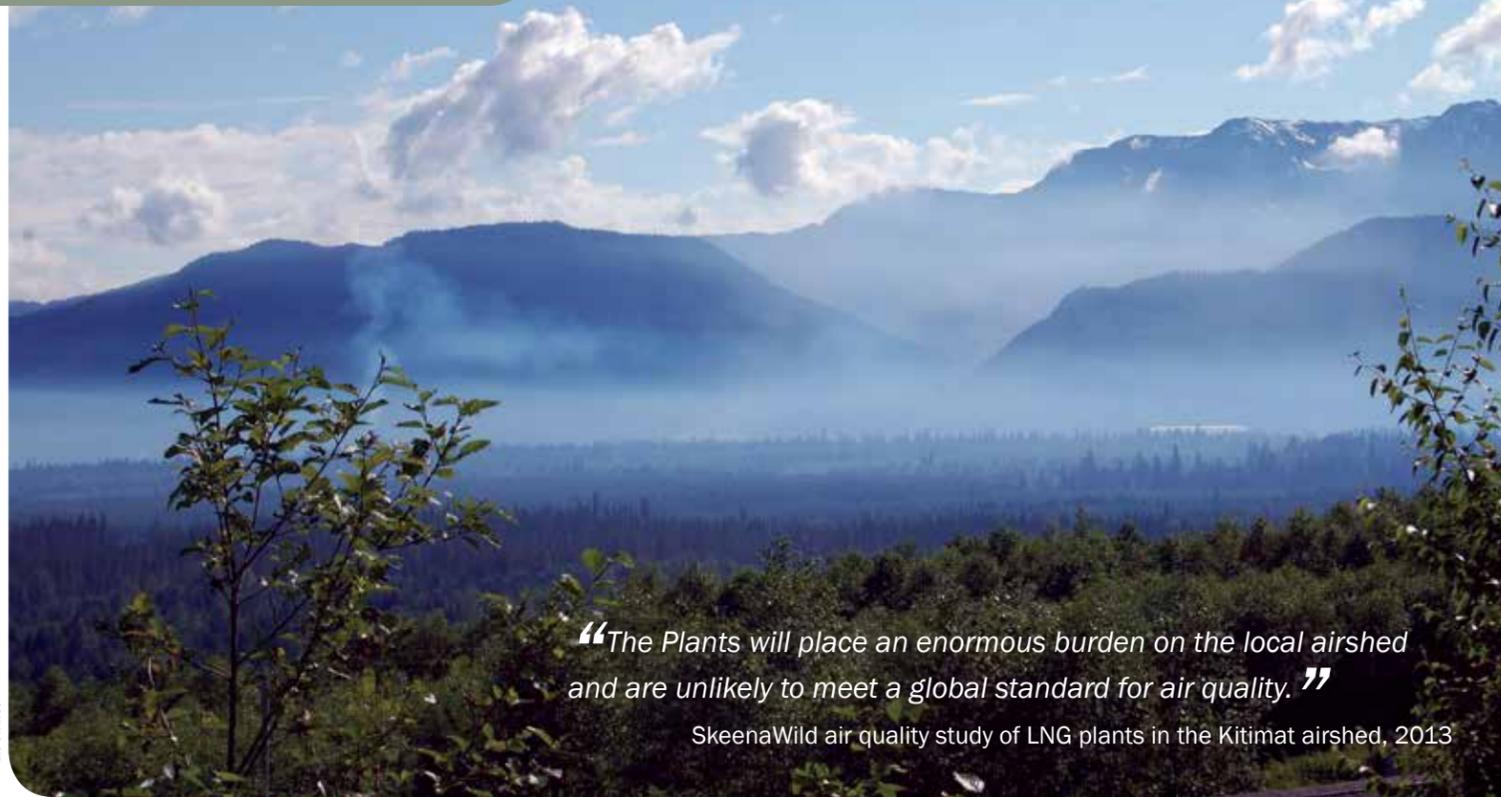


# LNG & AIR POLLUTION



*“The Plants will place an enormous burden on the local airshed and are unlikely to meet a global standard for air quality.”*

SkeenaWild air quality study of LNG plants in the Kitimat airshed, 2013

LNG plants are of concern to local air quality, especially in the constrained Kitimat-Terrace airshed. Chilling gas to a liquid state is an energy intensive process, and industry prefers to burn the gas it's processing to feed the plants.

Although gas burns cleaner than other types of fuel, the volume of gas required to power LNG plants would drastically increase air pollution in the region.

When combined, the three plants proposed in Kitimat would burn 2.5 times the amount of gas burned in Greater Vancouver in a year, or 60% of all the gas burned in BC each year.

If the three LNG plants proposed for Kitimat were built, they could increase nitrogen oxide (NOx) emissions more than 500% above existing levels. NOx contributes to smog and particulate matter, which causes respiratory problems such as asthma, bronchitis and emphysema. This is of particular concern for children and the elderly.

Along with respiratory problems, NOx causes acid rain, which would acidify local lakes, streams and soils – impacting fish, amphibians, plants, and local food growers.

The Alcan Modernization project is already slated to increase air emissions in Kitimat. Adding pollution from LNG plants could saturate the airshed making it unsafe for human health.

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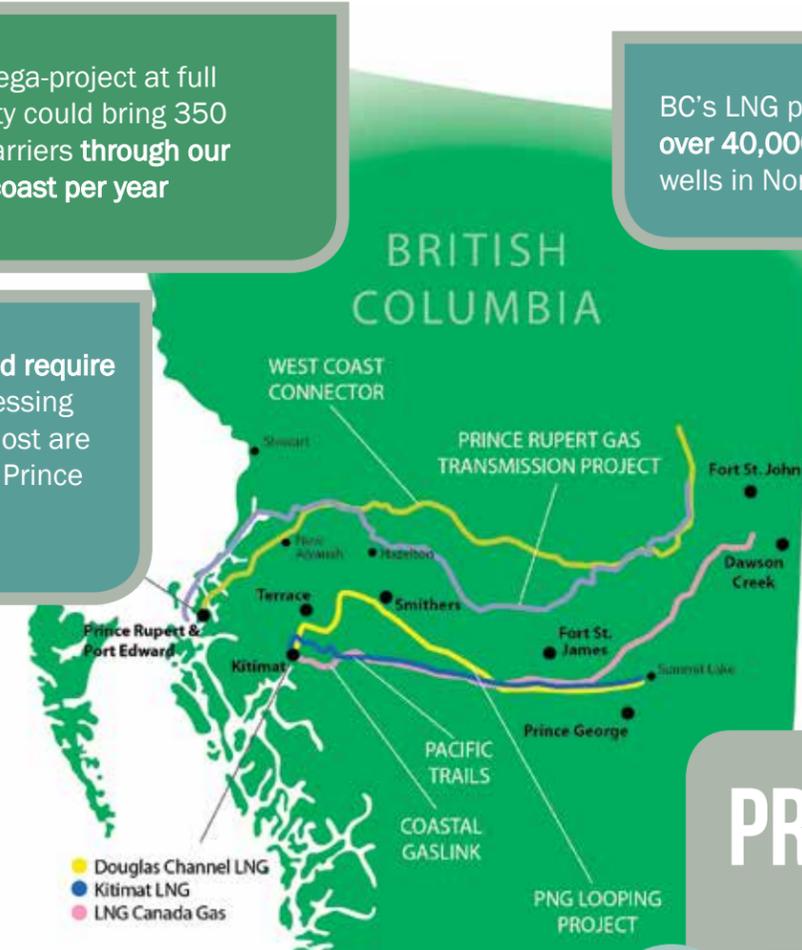
Northwest Institute has been working towards social and ecological sustainability in Northwest B.C. since 1996.

# LNG IN NORTHWEST BC

One mega-project at full capacity could bring 350 LNG Carriers through our north coast per year

BC's LNG plans would require over 40,000 new fracked gas wells in Northeastern BC

Each LNG project would require a large industrial processing plant on the coast – most are proposed in or around Prince Rupert and Kitimat



## PROPOSED LNG PROJECTS

13

LNG PROJECTS HAVE BEEN PROPOSED FOR NORTHERN BC

8

PROJECTS HAVE EXPORT LICENSES

2

PROJECTS HAVE ENVIRONMENTAL APPROVAL

0

PROJECTS HAVE FINAL INVESTMENT DECISIONS

The three plants proposed for Kitimat alone would emit greenhouse gas emissions equivalent to 60% of what the entire province emits in a year.

# OVERVIEW

THERE'S A LOT OF BUZZ ABOUT LNG THESE DAYS, BUT WHAT WOULD THESE PROJECTS ACTUALLY REQUIRE?

1 Gas proposed for export would be "fracked" in Northeastern BC. Hydraulic fracturing, also known as "fracking", is used to access deep shale gas deposits. A mixture of sand, water, and chemicals is injected into the ground, fracturing the shale and releasing the gas.

2 The gas would be pumped through multiple pipelines to liquefaction plants on the coast.

3 Large LNG plants would cool the gas, turning it into a liquid. Liquefying the gas condenses it, making it cheaper to transport. The cooling process requires a large power source that would increase air pollution in the region.

4 Liquefied gas would be loaded onto LNG carriers and travel through Hecate Strait, around the Dixon Entrance, and into the open ocean.

Shell's LNG Canada Gas has been approved to export over 3 billion cubic feet of gas per day. This is about the same amount of energy BC uses each day.



## JOBS

"Even if we were to train up every high school graduate in British Columbia over the next few years we still wouldn't have enough people."

Bill Bennett, BC Minister of Energy & Mines

The BC government plans to have five LNG projects operating in Northern BC by 2021. According to the provincial government, these five plants could bring 100,000 jobs to BC.



## REALITY CHECK ON LNG JOBS

- Most of the jobs would be skilled labour positions. BC has a skilled labour shortage.
- Most of the jobs would be short-term construction jobs lasting 5 - 7 years.
- An LNG plant would offer about 200 long-term jobs. Pipelines would offer only a few long-term jobs.
- Each of the LNG projects would require thousands of temporary workers from outside of the region.
- Workers who are already moving to the north are increasing rent prices and putting a strain on housing in local communities.

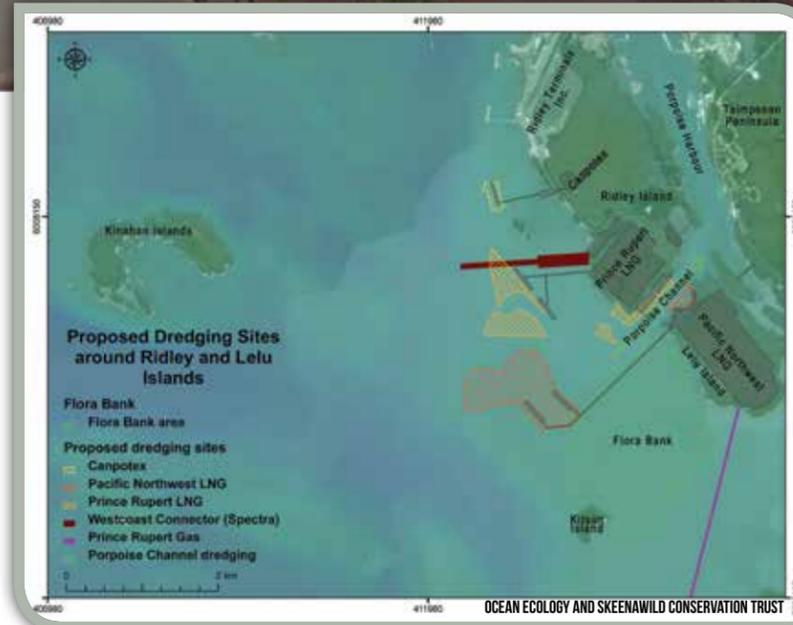
LNG could bring some jobs and revenue to the region, but it is important to ensure these benefits are worth the costs. Northwest BC has been through booms and busts before. We've seen it with the fishing industry, mills, and forestry. It's time to ask: *How do we build a new industry to maximize long-term and local benefits? How can we minimize negative impacts? And are there opportunities to get off the boom and bust rollercoaster?*

# LNG & SKEENA SALMON

"Inverness Passage, Flora Bank and De Horsey Bank... are habitats of critical importance for the rearing of juvenile salmon. The construction of a superport at the Kitson Island - Flora Bank site would destroy much of this critical salmon habitat."

Department of the Environment, 1973

In 1973, a superport was proposed in the Skeena Estuary and later rejected due to a Department of the Environment - Fisheries Service study that concluded it would destroy critical salmon habitat.



"The Skeena River watershed is a region where annual salmon migrations sustain the ecosystem, culture, and economies of First Nations, commercial, and recreational fishing sectors."

Carr-Harris, Gottesfeld & Moore, 2014

The two LNG plants proposed for the Skeena estuary, Pacific Northwest LNG and Prince Rupert LNG, would result in the largest dredging project in Canadian history – right over top of the most sensitive salmon habitat in BC.

Every stock of every species of Pacific salmon and steelhead use the estuary habitat during their lifecycle.

Millions of juvenile salmonids adapt to the saltwater environment in the eelgrass beds of Flora Bank, adjacent to Pacific Northwest LNG's proposed LNG plant site on Lelu Island (see map).

Identifying how delicate the ecosystem is, scientists have classified the estuary as the most critical for Skeena salmon survival. A study of the estuary found that some salmon populations are more abundant in the areas slated for development.

## ABOUT THE PACIFIC NORTHWEST LNG MARINE TERMINAL

- Location: Lelu Island in the Skeena estuary, near Prince Rupert
- Proponents: Petronas, Japex, Petroleum Brunei, Indian Oil Corp., and Sinopec
- Plans to dredge enough sediment to fill 2,400 hockey rinks
- Long-term Jobs: approximately 200-300
- LNG Carriers: approx. 180 per year (could increase to 350)