TATSHENSHINI Wild

TATSHENSHINI • ALSEK

North America's Wildest River

BRIEFING DOCUMENT • SPRING 1993

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Cover photo: Andrew Klaver

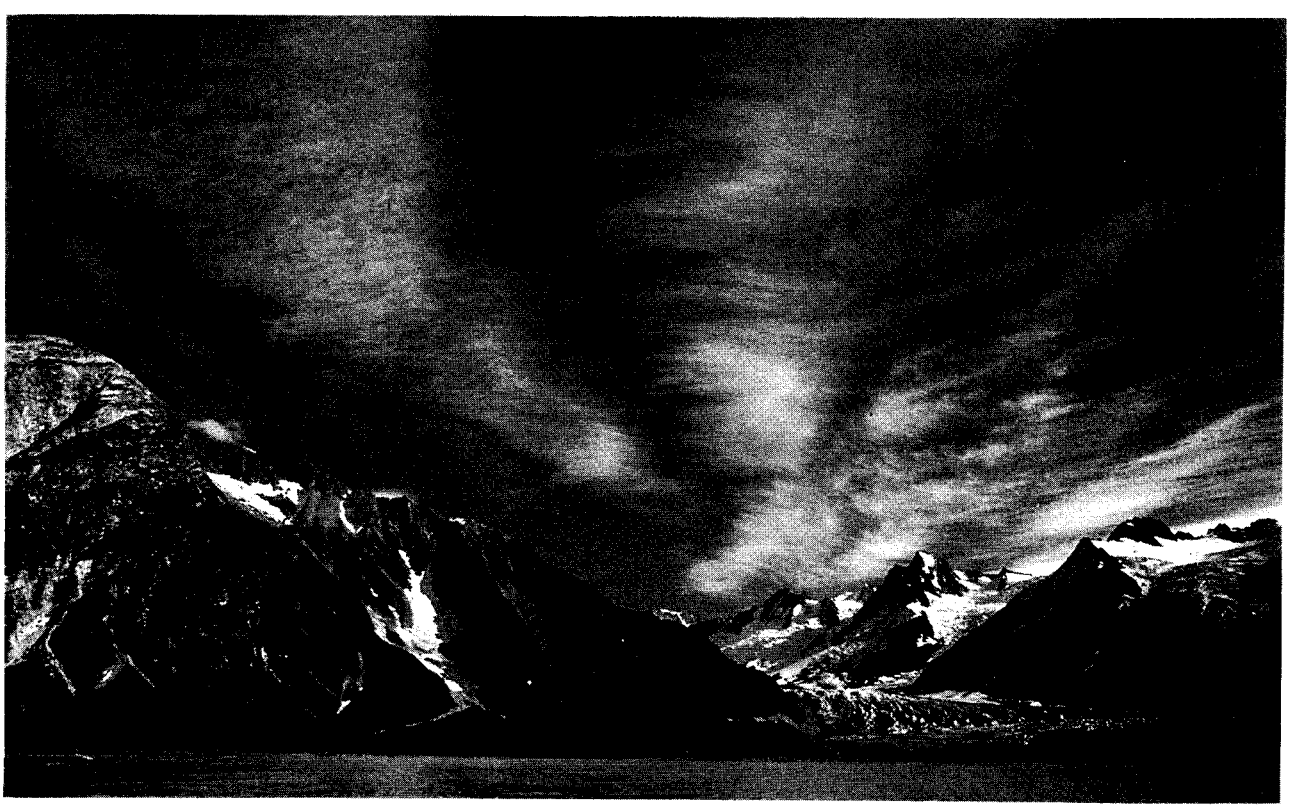


Photo: Pat O'Hara

Making the Choice Today...for Tomorrow

REPORT SUMMARY

Tatshenshini-Alsek is a globally important wilderness area which is now threatened by the proposed Windy Craggy copper mine. Given that the mine would be associated with potentially massive, and perpetual trans-boundary impacts, this issue is a crucial one. The key points are:

1. Tatshenshini-Alsek's spectacular scenic, wildlife, biodiversity and recreation **preservation values are acknowledged to be of top world significance** by the United Nations (UNESCO), World Conservation Union (IUCN), the U.S. Congress and B.C. Ministry of Environment and Parks.

2. Preservation of Tatshenshini-Alsek would protect the heartland and **complete the largest international preserve in the world.** This cluster of World Heritage Sites and National Parks in Canada and the United States would be large enough to guarantee the survival of the grizzly in North America and the rare glacier bear in Canada.

3. Canadian, U. S. and British Columbia government agencies (including the just completed B.C. Commission on Resources and Environment (CORE) Report) have repeatedly confirmed that the **Windy Craggy project threatens to cause massive and permanent acid/heavy metal pollution which could devastate U.S.-Canada fisheries worth $50 million/year.**

4. **The technology to stop acid mine drainage (AMD), once it starts, does not exist.** Therefore any resultant destruction of fisheries and wildlife in the international Tatshenshini-Alsek would be **irreversible and persist for millennia.**

5. Since **Windy Craggy is located in the most active earthquake zone in North America,** CORE confirms that severe AMD impacts are likely.

6. **CORE states that wilderness and mining can not co-exist in Tatshenshini,** since road access into Windy Craggy would be required in perpetuity to prevent tailings dams failures and the subsequent release of acid and heavy metals .

7. **Permitting of Windy Craggy would contravene four international treaties** to which Canada is signatory. Since Glacier Bay National Park down-stream in Alaska is a World Heritage Site, the World Heritage Convention applies which says: a nation will not undertake any action which might directly or indirectly threaten another nation's World Heritage Site.

8. The Boundary Waters Treaty also applies which says that **Canada or the U. S. will not impact on the transboundary rivers' water quality** (including fish) of the other nation. Precedents exist (e.g. Cabin Creek in B.C.) where far less hazardous projects have been rejected under this Treaty.

9. **The United States has a veto on Windy Craggy since the port site must be located in Alaska.** U.S. opposition is intense: in the Administration (including Vice President Gore), numerous federal agencies, and the U.S. Congress. As well, a continent-wide conservation campaign is opposed to Windy Craggy (50 major organizations representing 10 million people).

10. Windy Craggy has already received exhaustive review by agencies in B.C., Canada and the U.S. over the past four years. **To prolong this process will only prove internationally embarrassing, and costly.**

11. **Preservation of Tatshenshini will protect North America's wildest river,** a recommended World Heritage Site, and complete a transboundary "Global Biodiversity Preserve" of top significance. The prestige of protecting Tatshenshini will receive ongoing international recognition.

12. **Whatever choice is made on Tatshenshini will long affect future generations. Either we bestow a globally irreplaceable wilderness, wildlife and biodiversity treasure, or pass on a legacy of potential environmental destruction. The decision is clear: Tatshenshini must be preserved forever, today.**

North America's Wildest River

"The Tatshenshini-Alsek river system in the St. Elias Mountains of Canada and Alaska is one of the world's most beautiful and magnificent."

World Conservation Union (IUCN)

In the northwestern corner of our continent, where the boundaries of British Columbia, Alaska and the Yukon converge, the mile-wide Tatshenshini/Alsek flows amidst three-mile-high mountains. Here glaciers descend to waters' edge, shearing off thunderously into icebergs. It is North America's wildest river.

Surrounded by national parks, the Tatshenshini/Alsek headwaters run through the sub-Arctic tundra of the Yukon's Kluane National Park, the middle reaches flow past the towering peaks of the Fairweather and St. Elias ranges and the lower river traverses Alaska's Glacier Bay National Park to finally arrive at the Pacific.

Tatshenshini/Alsek is unique on the planet. Yet the British Columbia portion of this world-class wilderness remains unprotected. In recognition of this vulnerability, the United Nations' Education, Science and Cultural Organization (UNESCO) made a recommendation in December, 1992 to the Governments of Canada and British Columbia that the Tatshenshini Wilderness be preserved and designated with World Heritage Site Status—the highest recognition possible for the protection of globally important preservation values.

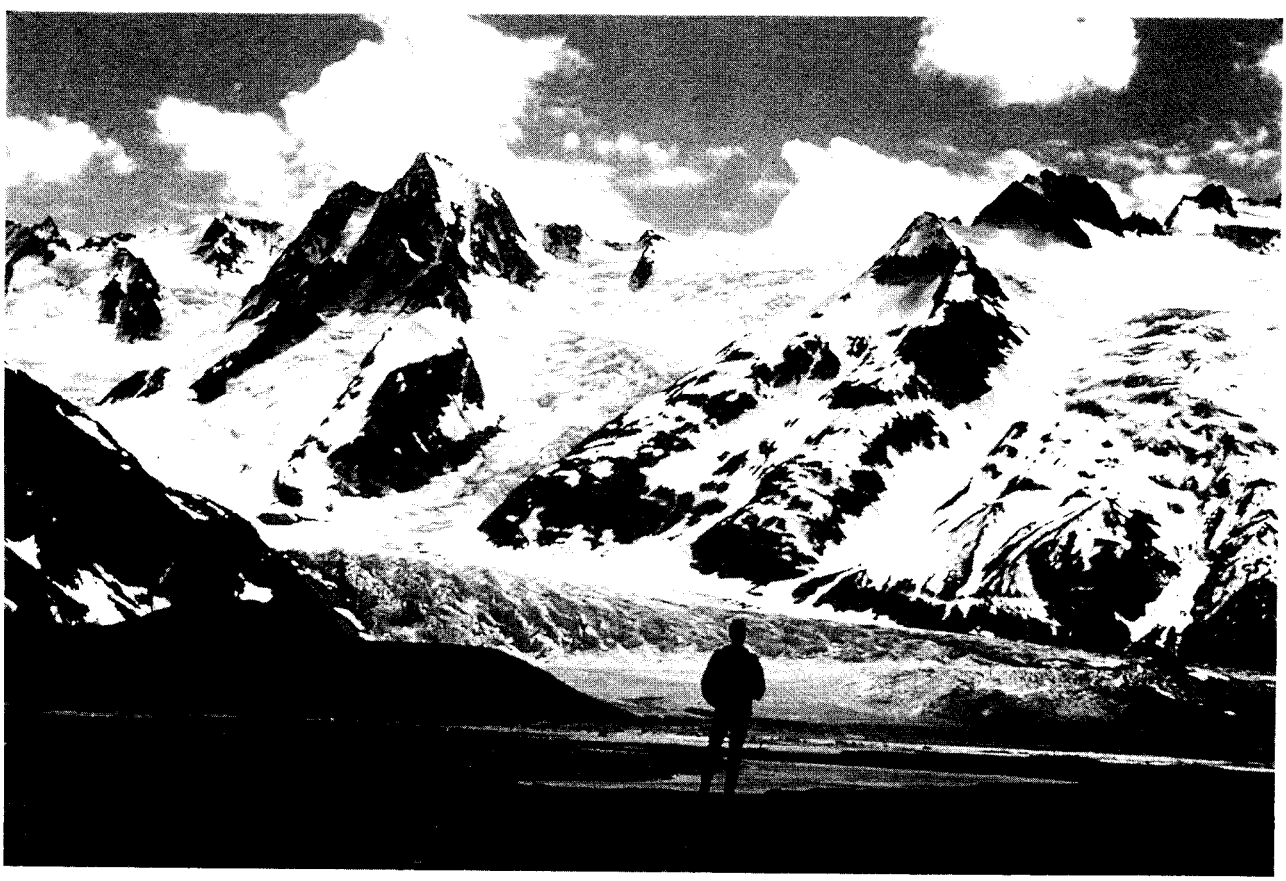


Photo: Kevin Schafer

Still entirely pristine, once the BC portion is preserved the Tatshenshini/Alsek will be the only large river drainage in North America that is completely protected—from headwaters to source.

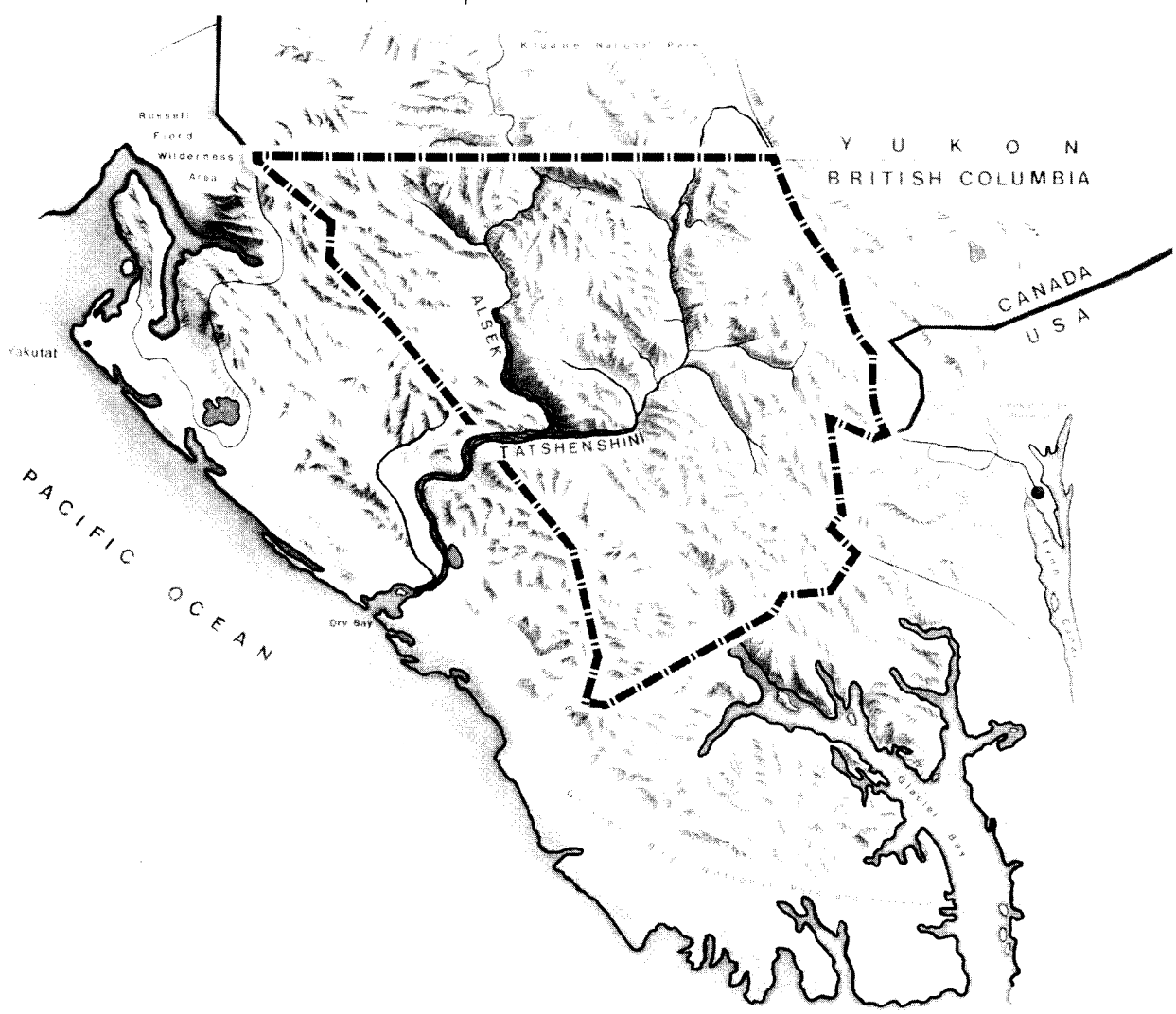
Outstanding Biodiversity

Photo: Art Wolfe

The only river system to penetrate the St. Elias Range (the highest coastal mountains on Earth), Tatshenshini carves a low elevation corridor of life amidst the ice fields and peaks, to link together World Heritage Sites in Canada and the United States. Consequently, this wilderness features extraordinary biodiversity, with ecosystems ranging from sea-level to over 15,000 feet, and from coastal to sub-tundra.

"The Coast Mountains, through which the Alsek and Tatshenshini rivers flow, contain the largest non-polar icecap in the world and some of the biggest valley glaciers in Canada. The combination of the mild Pacific influence and the glacial history of the area has produced an exceptionally diverse range of biophysical conditions . . . the region contains habitats not found anywhere else in Canada "

CORE Report [2]



Unparallelled Wildlife Populations

Government and research studies indicate that Tatshenshini, because of its exceptionally productive habitat and remote pristine environment, supports a globally important grizzly bear population:

- "The grizzly bear habitat found in the lower Tatshenshini/Alsek area does not exist anywhere else in British Columbia. Wildlife biologists estimated that the Alsek Ranges' Ecosystem has bear food productivity that is unique in Canada."
  Tatshenshini-Alsek Wilderness Study [3]
- "...the Tatshenshini River valley could be thought of as the green line that cuts through the mountain and ice barrier, and connects coastal and interior grizzly bear populations."
  Herrero Report [4]

Tatshenshini is the only place where the rare silver-blue glacier bear occurs in Canada. As well, Tatshenshini supports the sole year-round populations of Dall's sheep in British Columbia and exceptional numbers of mountain goat, moose, wolves, eagles (bald & golden) falcons (peregrine & gyr), and trumpeter swans.

"The Tatshenshini/Alsek area is one of the last strongholds of a thriving grizzly population in North America..."

Tatshenshini-Alsek Wilderness Study [5]

Photo: Pat O'Hara

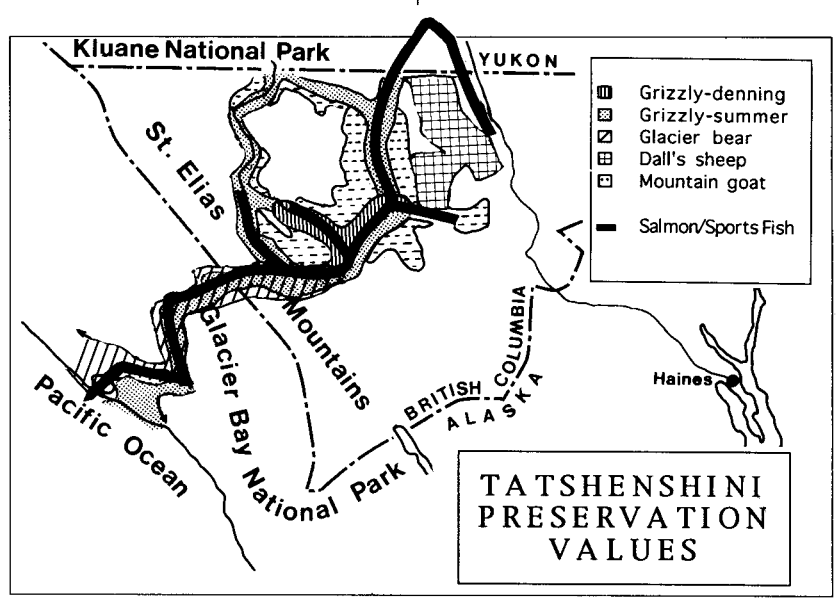


Photo: Art Wolfe

Tatshenshini is critical denning territory for grizzlies. From here the great bears migrate into the Yukon's Kluane National Park and Alaska's Glacier Bay National Park.

World Heritage Status

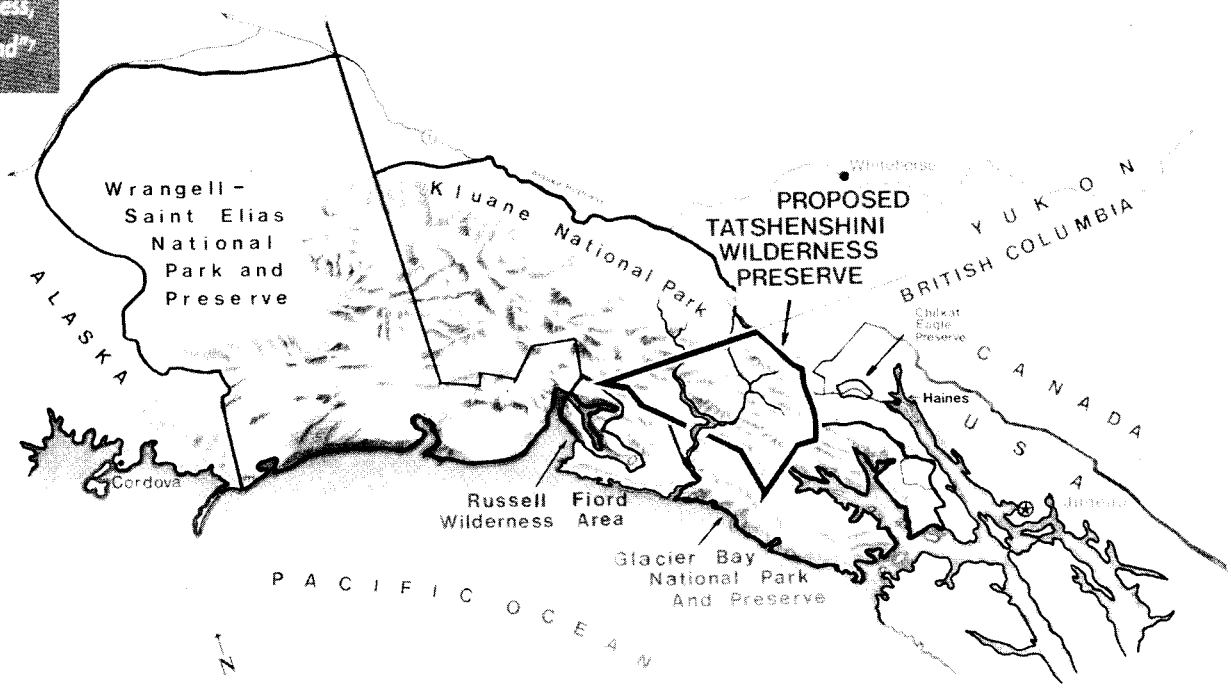
The international conservation community is calling for the immediate protection of the Tatshenshini. The prestigious World Conservation Union (IUCN) states:

"The entire area is unique and worthy of World Heritage status"
I.U.C.N

- "The 2.7 million acres surrounding this river system (in B.C.) is the only gap in a 25 million acres arctic and sub-arctic area which includes the Glacier Bay National Park and Preserve and the Wrangell-St. Elias National Park and Preserve in the United States and the Kluane National Park in Canada."
- "The Governments of British Columbia and Canada [should] consider this area of the St. Elias Mountains for National Park status."

I.U.C.N. Resolution, Dec. 90[5]

Geddes says: "This isn't pristine wilderness, it's barren land"



"Protection of the wild lands of the Alsek and Tatshenshini region would complete protection of the largest contiguous wilderness area in the world, comprised of Kluane National Park in Canada, Wrangell-St. Elias National Park, Glacier Bay National Park and Preserve, and the Tongas National Forest in the United States."
Letter to Prime Minister of Canada from U.S. Congress
(17 signatures including now Vice President Gore), Sept. 30, 1992

Windy Craggy Proposal Threatens Tatshenshini

"The development of a huge open pit copper mine in the midst of one of the world's most rare and pristine regions is an environmental nightmare that threatens the river and every living thing in the region."
Vice President Al Gore

The world-class wilderness and wildlife values of the Tatshenshini/Alsek are in dire jeopardy. In the heart of the Tatshenshini Wilderness, just 15 miles east of the U.S. border, Geddes Resources (Vancouver) proposes to take the top off 6,000' Windy Craggy Mountain, transforming it into an immense open pit mine (30,000 tons/day) and generating 375 million tons of waste rock and tailings.

The company plans to ship the ore concentrate 150 miles via slurry pipeline to port at Haines, Alaska. To support its operation, Geddes is also proposing to build a major 70 mile access road through outstanding wildlife habitat supporting grizzly, wolves, Dall's sheep and eagles. The consequences of Windy Craggy could be catastrophic.

Geddes says: "Its [Windy Craggy's] impact on the environment would be negligible."

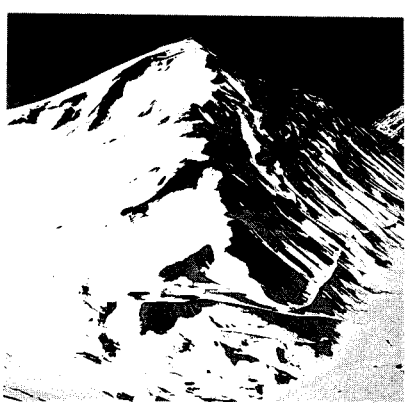


Photo: Kevin Schafer

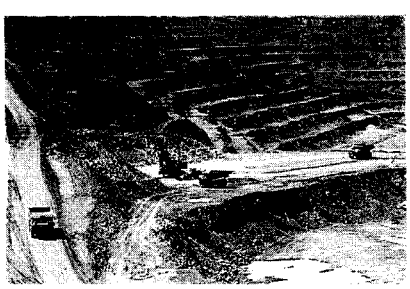


Photo: Al Harvey

The Geddes scheme would transform Windy Craggy Mountain into a huge open pit mine and waste rock dumps.

Acid Mine Drainage: A Massive, Permanent Hazard

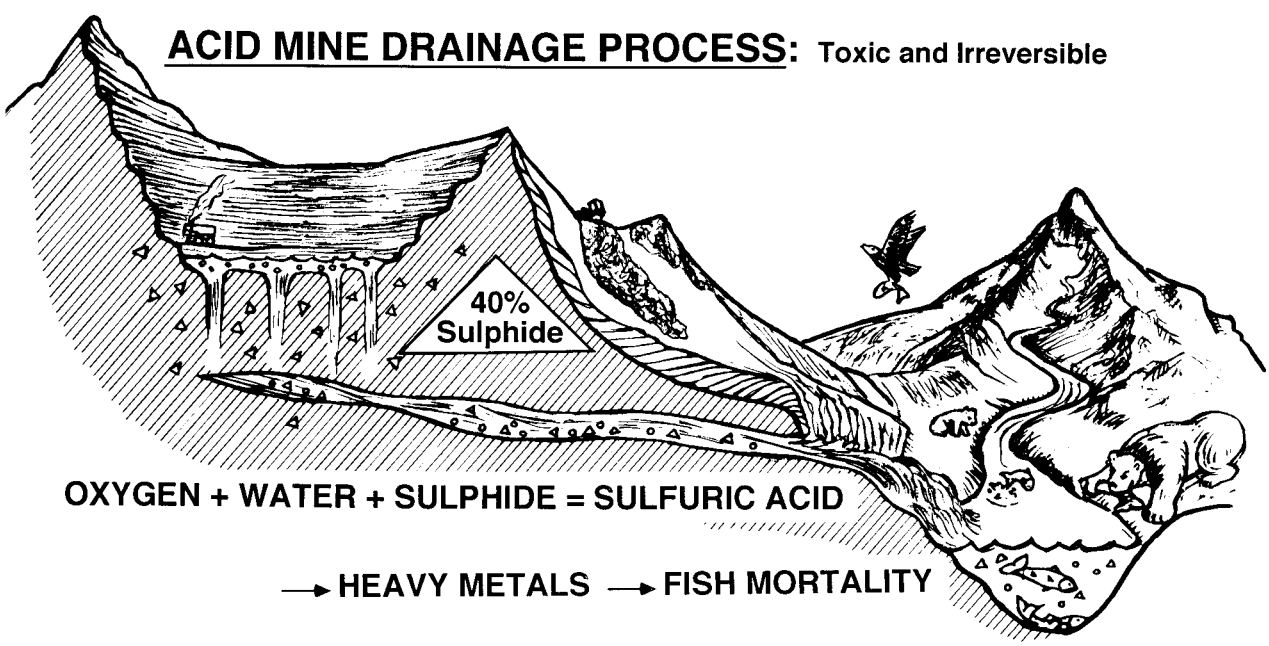
The ore in Windy Craggy mountain is up to 40% sulphide. When this rock is exposed to atmospheric oxygen through mining, it can generate vast amounts of sulfuric acid (or battery acid) and leach out heavy metals from the bedrock. Called Acid Mine Drainage (AMD) this acid/heavy metal combination is lethal to fish and consequently impacts on the wildlife who depend on them for food.

Acid Mine Drainage is essentially permanent and irreversible. Consider the following:

- "The U.S. mining industry spends over $1 million every day to treat acidic mine water."
  U.S. Bureau of Mines [9]
- "The authors know of no massive sulphide mines which have not become acid producers."
  Errington 1987 [10]
- "The estimated cost to control AMD caused by open pit copper mining (of a scale of Windy Craggy) in the Bute, Montana area is $1 billion."
  Worldwatch Institute [11]

"We consider the principal threat posed by mining activity past, present and future to be Acid Mine Drainage...it frequently occurs only after mining activity has come to an end, is almost impossible to reverse and very expensive to clean up."

University of California Mining Waste Study. Undertaken for California State Legislature, 1988 [12]



"AMD is an accelerated form of metal leaching from rock...the potential high metal concentrations associated with AMD can be toxic to aquatic and terrestrial life...a detailed understanding of all relevant processes is probably decades or even centuries away."

CORE Report [13]

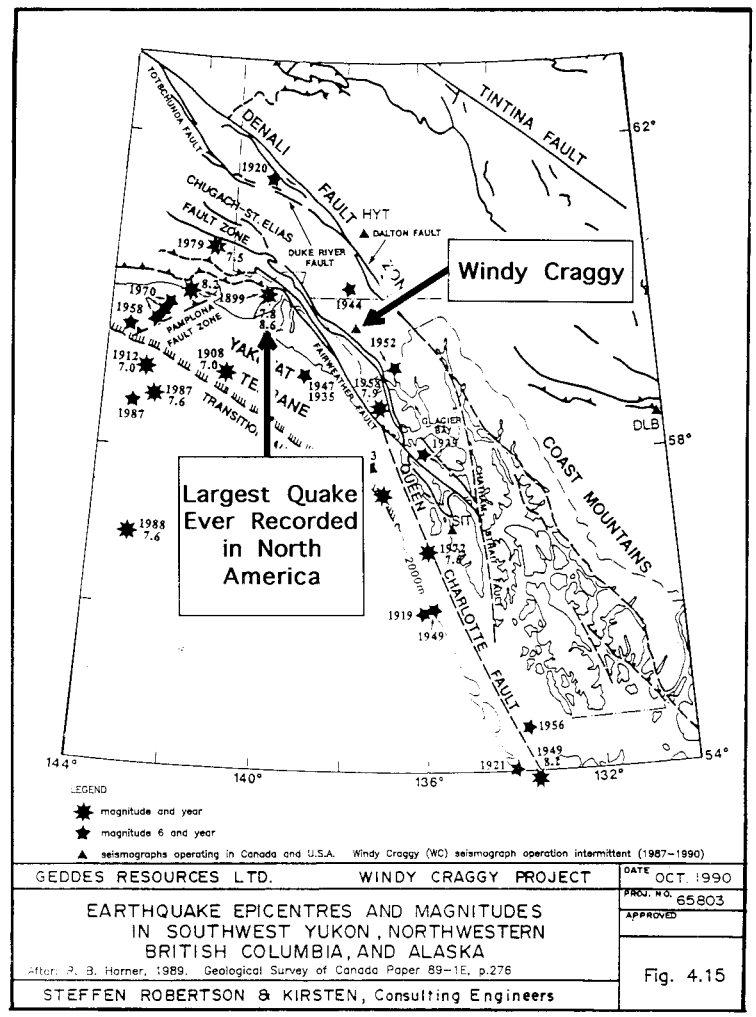
North America's Highest Earthquake Risk

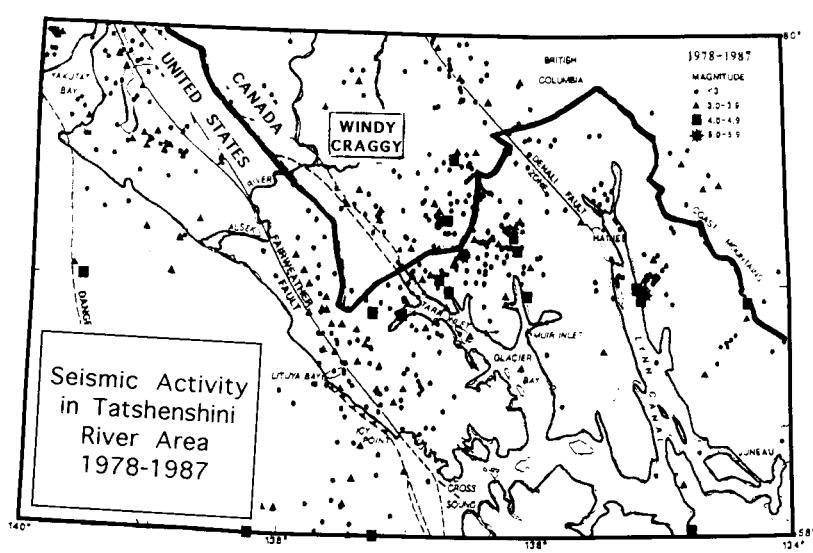
Geddes proposes to deal with the potentially catastrophic AMD risk by storing vast amounts of acid-generating waste rock and tailings under water, out of contact with oxygen, in a 2.5 mile long tailings reservoir. This would be constructed just three miles from the Alsek River.

"The tailings and waste rock impoundment would be designed to store 124 million tonnes of tailings and 100 million tonnes of acid waste rock under four metres of water. The impoundment would be created by the construction of two embankments [350 feet and 150 feet high in Upper Tats Creek valley, 15 miles east of the U.S. border]."
CORE Report [14]

Windy Craggy is located in the most active earthquake zone in North America. In 1899, when the largest quake ever recorded on the continent hit, just 75 miles from Windy Craggy, the United States Geological Survey records of the day state that the mountains were thrust up 50 feet and glaciers advanced 1/2 mile in five minutes. How could any dam survive such stress? Yet to avoid environmental disaster, the Geddes' dams would have to endure such quakes for hundreds, even thousands of years to prevent the release of AMD.

"In terms of both size and frequency of earthquakes, the Windy Craggy vicinity ranks among the most seismically active parts of the world."
CORE Report [15]





As these maps show, quakes recurrently rock the Windy Craggy area. For example, in 1958, a Richter 7.9 quake caused massive landslides through the region.

Tailings Dams: Failure Impacts

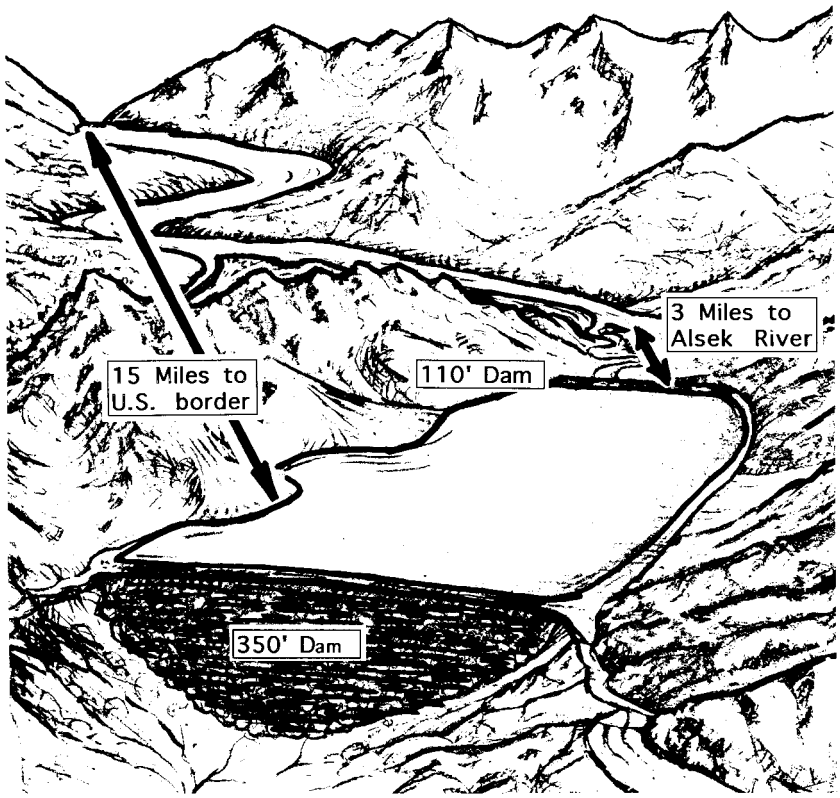
"The current plan would be unlikely to gain provincial approval."
BC Ministry of Mines in: CORE Report [18]

Photo: Kevin Schafer

The greatest hazard of the Windy Craggy project would result from tailings dam failures and the consequent generation of huge amounts of acid mine drainage. The B.C. Core Report details the dangers:

• "A breach of the dams as a result of either earthquakes or other reasons (flooding and erosion) would cause tailings and water to flow into Tats and/or Noisy Creek and from there into the Tatshenshini or Alsek River. Exposed tailings left along stream and river banks after such a breach would continue to generate acidity and metals in solution indefinitely. Destruction of fish habitat would be essentially permanent."
CORE Report [16]

• "The CORE's risk assessment process identified 86 potential sources of environ-mental risk, of which 12 were considered to have potentially severe consequences ... All 12 were associated with a potential breach of the tailings dam."
CORE Report [17]



The 350' & 110' dams and tailings reservoir would be located just threer miles from the mainstem Alsek, and 15 mile from the US border in the most active earthquake zone in North America.

International Fisheries at Risk

"Exposed tailings left along stream and river banks after a (dam) breach would continue to generate acidity and metals in solution indefinitely. Destruction of fish habitat would be essentially permanent."
CORE Report [27]

The waters that could be impacted by the Windy Craggy plan support prime transboundary fisheries. According to the United Fishermen of Alaska:

- "The Alsek and the Tatshenshini Rivers support important commercial, subsistence and sports fisheries valued in excess of $8.5 million annually."
- "Lynn Canal (into which the slurry pipeline effluent would be dumped) sustains harvests of salmon, bottomfish, shellfish, and other fisheries resources valued at $41 million annually."
- "The Alsek and Tatshensini Rivers provide important habitat for all five species of Pacific salmon which are protected by the international treaty."[24]

The B.C. Government's CORE Commission confirms that Windy Craggy would pose major hazards to U.S. fisheries:

"**[The] estimate of risks of impacts on salmon indicate that events leading to severe impacts [would be expected from Windy Craggy] once every 12 years.** These severe impacts would be associated with tailings dam failures." [25]

The CORE Report defines severe consequences as:

- "Permanent or large-scale habitat destruction
- Lethal to significant portion of population
- Avoidance not possible" [26]

Geddes says: "Acid is unattractive to fish." [28]

Photo: Graham Osborn

A Perpetual Hazard

Although the Windy Craggy mine would operate for just 15-20 years, the B.C. Government's CORE Report makes it clear that the hazards associated with the project would endure for thousands of years:

- "Although perpetual water cover prevents oxidation of acid-generating material, given the variety of natural forces characterizing the project area, it would remain a perpetual hazard in terms of dam stability and potential for tailings escaping through a breach." [19]

(As well), "Because of the steep pit walls, slope unravelling will likely occur and continually expose fresh rock to potential oxidation. As a result, there is a higher potential for problems to develop and continue for some time during long-term abandonment." [20]

Geddes says: "When mining operations end, reclamation procedures would return the mine and valley sites to conditions similar to their present natural state." [22]

"The tailings dams must remain perpetually functional in retaining both tailings and water if long term confinement of the tailings and prevention of ARD are to be assured. Perpetuity is indeed a very long time . . ."
BC CORE Report [21]

Photo: Pat Morrow

WORLD CLASS WILDERNESS LOST...FOREVER

"Regular inspection and periodic repair of the dam after abandonment would likely mean that neither the impoundment site nor the access road for the Haines Highway could be abandoned as long as heavy equipment was needed for these tasks; and without abandonment, neither the site nor the transportation corridor would recover their wilderness character."
CORE Report [23]

Bear Populations at Risk

"Grizzly bear populations would be lowered, degraded, fractionated and alienated from prime habitat... The most important area in the Tatshenshini drainage known for grizzly bear denning would likely be abandoned."

Dr. Stephen Herrero, Head IUCN Bear Research Group [30]

The Windy Craggy project would place one of the premier bear populations in the world in jeopardy for the following reasons:

- Destruction of fisheries from acid/heavy metals would devastate the crucial fish food source.
- The mine, mill and road would be located in the very heart of the finest denning territory in Canada.
- The tailings dam would block a critical migration route.
- The losses would be transboundary since bears appear to migrate between Canada and Alaska's Glacier Bay National Park.

Dr. Stephen Herrero, head of the I.U.C.N. Bear Research Group says: "The current wilderness environment would be altered forever by the proposed development. Impacts on grizzly and black bears should not be viewed only in terms of habitat units lost, but also in the terms of a wilderness homeland lost." [29]

Geddes says: "What effects would the Windy Craggy project have on other users of the Alsek/Tatshenshini? Minimal adverse effects..." [32]

Photo: Art Wolfe

"Canada could potentially lose its representation of glacier bears as they appear to disperse along this corridor, and are already very rare." [31]

Permanent Pipeline and Road Impacts

Geddes' proposed road and pipelines would parallel and bridge the Tatshenshini, visually scarring what is now an international calibre wild river. As well, ore concentrate and oil spills from pipeline ruptures could endanger the Chilkat River salmon run in Alaska and the largest concentration of eagles in the world (3,500 birds) that gather there to feed.

Geddes says: "Windy Craggy operations would not significantly alter the river rafter's experience." [32]

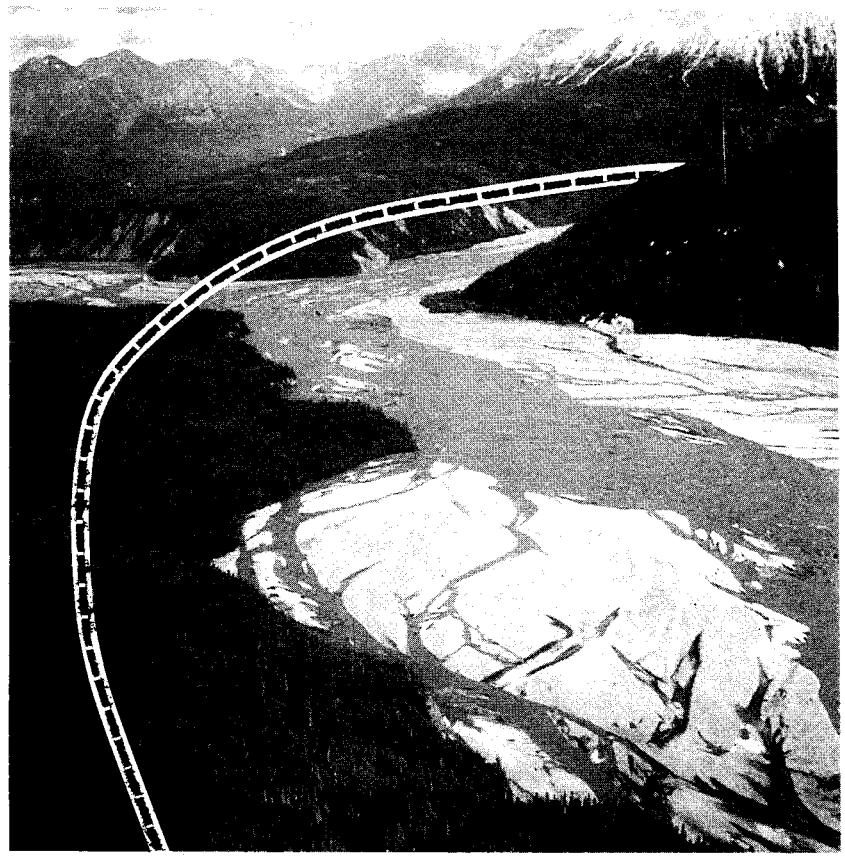


Photo: Pat Morrow

"A bridge and visible access road would have very serious deleterious effects on what is now one of the premier wilderness float trips in the world."
Marvin Jensen; Superintendent, Glacier Bay National Park,

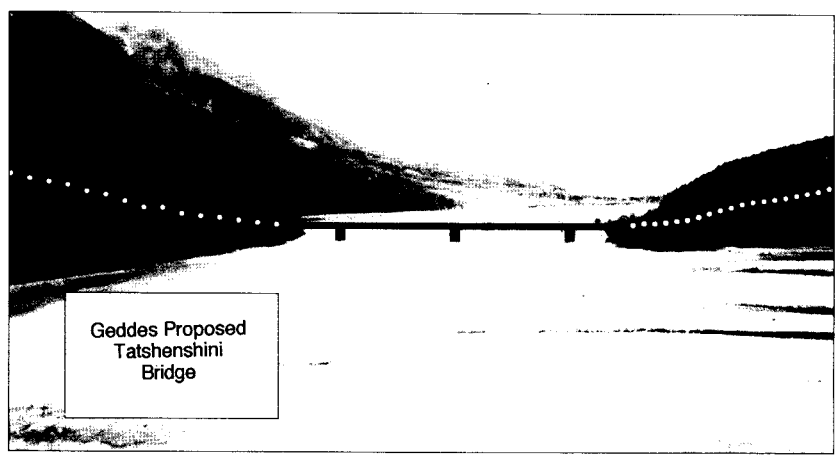


Photo: Geddes

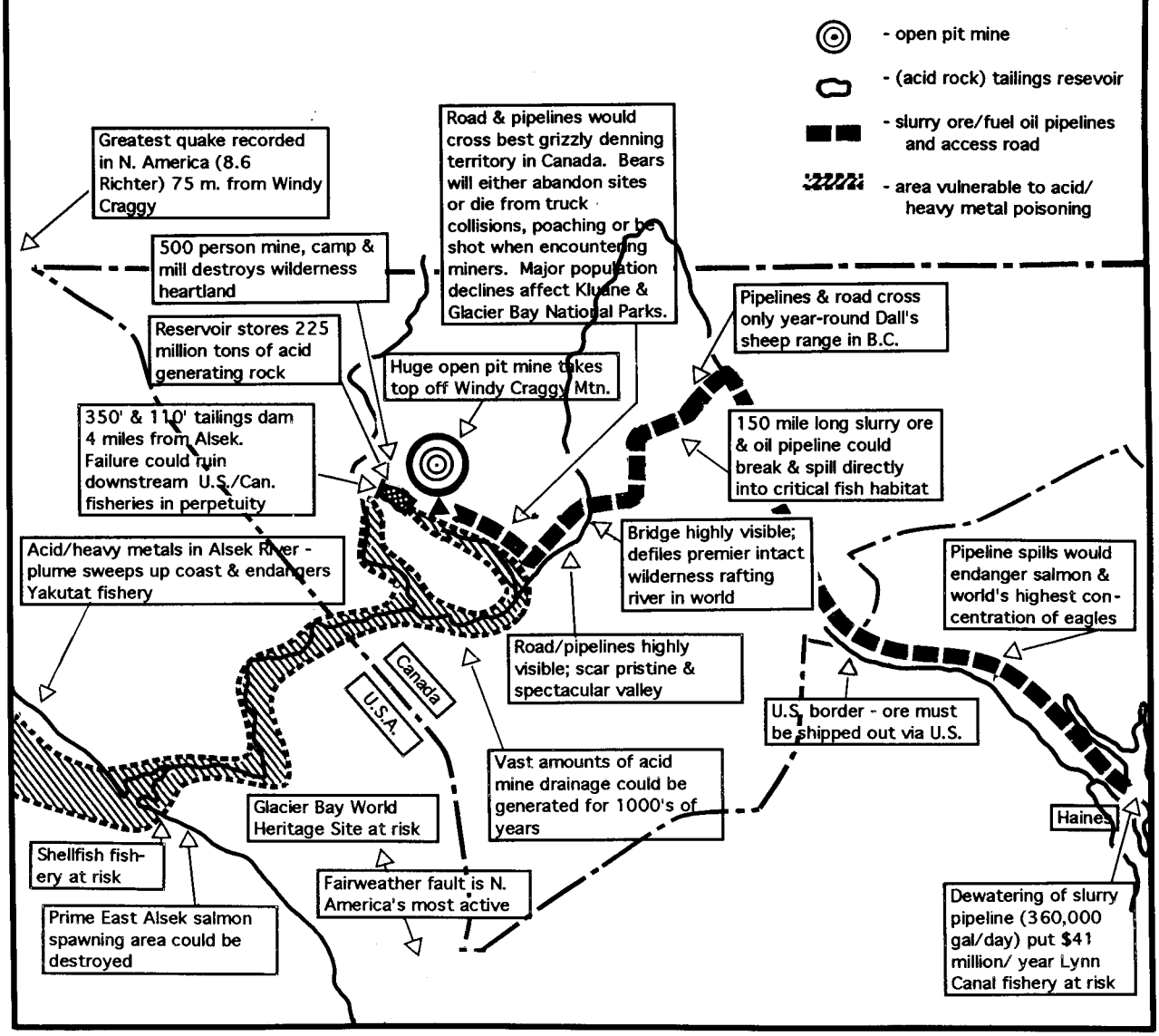
Impacts to the Tatshenshini Could be Devastating

The immense risk of the Windy Craggy scheme have been extensively documented by U.S., Canadian and B.C. agencies. As the B.C. Ministry of Mines itself says:

"The risk of serious environmental damage is high at this project, considering the large size and complexity of the proposed mine, the remote location, the severe weather and extreme topography, all combined with the potential for AMD... It is clear that there is a serious lack of understanding (by Geddes) of the actual potential for AMD from the pits, both during and following mine operations. This makes it impossible to design appropriate means of collection and method of treatment for pit effluent." [34]

Geddes says: "Windy Craggy development would require only one-tenth of one percent of the Haines Triangle." [35]

Impacts of the Windy Craggy Project



U.S. Opposition

"The requirement (exists) to secure approvals of facilities situated in the U.S. The pipeline and port facilities would open up the scope of full U.S. environmental review. This requirement effectively gives the U.S. a veto over mine development approval, as an alternative port facility on Canadian waters is not a practical option..."
CORE Report, Vol.1, p.99

"U.S. jurisdictions hold a virtual veto on the mining proposal."
CORE Report [36]

WHAT THE AMERICANS ARE SAYING

"The size of the Geddes project, its remoteness and harsh climate of the locale, when combined with fish and wildlife resources of acknowledged world-class economic, recreational and ecological significance creates a potential of ultimately massive environmental loss...Such loss cannot be restored once damaged...We recommend it not be permitted."
Nevin Holmberg, Fish and Wildlife Service, Juneau, AK., U.S. Dept. of Interior

"It does not appear that the environment and engineering problems associated with this project can be resolved with existing technology...We believe the long-term environmental degradation likely to result from the proposed Windy Craggy mine outweighs any economic gains that may accrue."
Steven Pennoyer, Director, Alaska Region National Marine Fisheries Service, U.S. Dept. of Commerce

"Windy Craggy's proposed man-made lake which will hide the mine tailings is an imminent lake of genocide to the Yakutat Tlingit people of the Gulf Coast of Alaska."
Caroline C. Powell, Chairman Yak-Tat Kwaan Inc., Mar. 5/92

"On October 20, 1992 the Haines Borough Assembly voted to protect the Alsek and Tatshenshini Rivers."
Resolution, Oct. 29/92

"...the City Council of the City of Yakutat voices strong opposition to the Windy Craggy Project."
Resolution 91-11

Geddes says: "We can not guarantee the ety of the fishery, near the ore terminal in Haines." [37]

Photo: Pat O'Hara

The largest concentration of eagles in the world—3500 birds at the Chilkat Eagle Preserve north of Haines, Alaska—would be jeopardized by fish kills in the event of slurry pipeline ruptures.

Windy Craggy Would Contravene International Treaties

"Each party to this Convention undertakes not to take any deliberate measures which might damage directly or indirectly the natural heritage situated on the territory of other Parties to this Convention."

World Heritage Convention, 1972

The permitting of Windy Craggy would be in direct contravention to four existing international treaties.

1. The World Heritage Convention
2. The U.S. - Canada Boundary Waters Treaty
3. The Pacific Salmon Treaty
4. The Migratory Birds Convention

As CORE says: **"Events leading to impacts on salmon could be expected to have severe consequences...[and] could lead to suits under international law..."** [38]

The B.C. CORE Report also states: "In December 1992, the World Heritage Committee of UNESCO named Glacier Bay National Park a World Heritage Site - a designation intended to recognize 'outstanding universal value to mankind'. Glacier Bay National Park borders the Tatshenshini/Alsek area to the south and west and contains within its borders the lower Alsek River, into which the Tatshenshini flows a few miles east of the international border. As a signer of the World Heritage Convention, Canada is obliged not to take any deliberate measures which might damage directly or indirectly the 'natural heritage' of the Site." [39]

"The World Heritage site designation will likely drive the need to satisfy American interest that there is no prospect for damage to habitat of salmon and other marine life along the Alsek River... this assurance is not possible." [40]

A CLEAR PRECEDENT EXISTS

In 1988 (pursuant to the Boundary Waters Treaty) the International Joint Committee recommended that the Cabin Creek Coal Mine being proposed in southeastern BC on the Flathead River not be permitted due to the impact this project would have on transboundary sports fisheries (worth $800,000/year) and upon the integrity of the then-nominated World Heritage Site of Glacier National Park in Montana. This mine was not built.

By comparison the Windy Craggy's overall project impact on a designated World Heritage Site and fisheries totaling $50 million per year would be 60 times greater than Cabin Creek. [41]

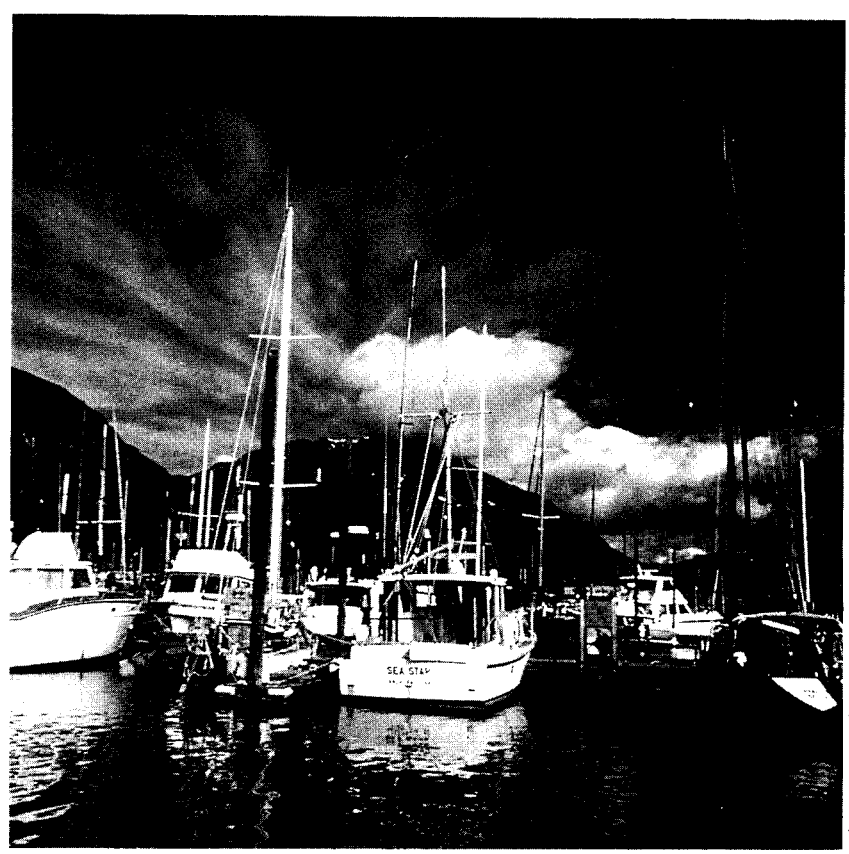


Photo: Ric Careless

The U.S.–Canada Boundary Waters Treaty says "Waters flowing across the boundary shall not be polluted on either side to the injury of health or property of the other." Because of its risks, permitting Windy Craggy would surely contravene this treaty.

Is a Mine Promotion Scheme Placing Tatshenshini At Risk?

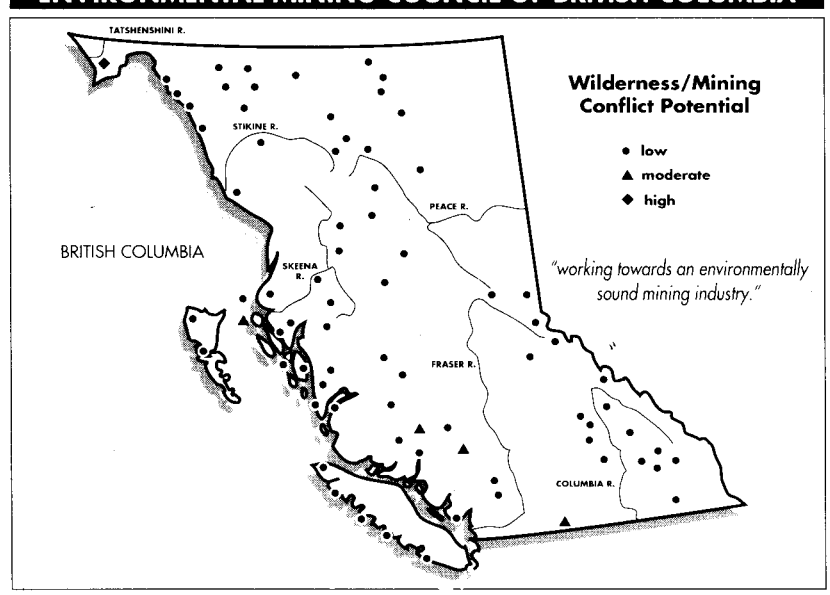
Photo: Bristol Foster

During winter 1991, the heavy alpine snows at Windy craggy collapsed six of Geddes seven buildings, caved in the mine portal and destroyed the glacier access road. This only heightens the apprehension that a technical failure of this project by Geddes could lead to distaster.

In looking at the Geddes' proposal, one can only wonder if the world-class Tatshenshini is being put at risk by a mining promotion scheme. Consider what Geddes itself says in its Rights Offering (July 24/92):

"Geddes has no producing properties and, consequently, no positive cash flow or earnings history. A final feasibility study for the commercial development of the Windy Craggy Project has not been completed and, accordingly, it is not certain that the mine can be developed into a commercially viable operation." [12]

ENVIRONMENTAL MINING COUNCIL OF BRITISH COLUMBIA



WINDY CRAGGY: THE EXCEPTION, NOT THE RULE.

Mapping analysis undertaken by the Environmental Mining Council of B.C., a network of conservation organizations representing 75,000 individuals, indicates that overall mining/environmental conflict is much less than believed. The large majority of protected areas proposed for B.C. are in low conflict with mineral deposits. The massive, perpetual transboundary environmental hazards of Windy Craggy on this area of such international preservation importance makes for an exceptional situation. By contrast, there are many win-win opportunities elsewhere in British Columbia.

A Choice Must Be Made

The B.C. Government's CORE Commission makes it clear: mining and wilderness can not co-exist at Tatshenshini. The future for the Tatshenshini involves making a choice: world-class wilderness or a potentially devastating open pit mine.

To prolong the already exhaustive review of Windy Craggy will only result in major Canadian and U.S. opposition - at the highest levels, and ongoing embarrassment internationally for British Columbia and Canada. And likely to no avail.

Windy Craggy, from all the agency reviews, appears to be fatally flawed. The technology simply does not exist to guarantee a safe mine. Major transboundary fisheries and globally critical preservation values would be permanently endangered. Given the complex and costly agency review processes, sooner or later the proposal will surely be killed. The question is not if, but when. The longer it takes, the more cost to the government, the mining industry, the environment, and the taxpayer.

Preserving Tatshenshini now will link together and complete the largest international preservation area - and World Heritage Sites - on the planet as a "Global Biodiversity Reserve." It will ensure the long-term survival of grizzlies on our continent, safeguard fisheries, protect the rare glacier bear and preserve forever some of the most spectacular scenery on Earth.

In choosing to preserve Tatshenshini, what a legacy we bestow upon humanity! Now...and for all time.

Photo: Art Wolfe

"Tatshenshini is an area of tremendous biological diversity and overwhelming natural beauty, which should be protected and preserved for future generations."

Vice President Al Gore, Dec. 14/1992

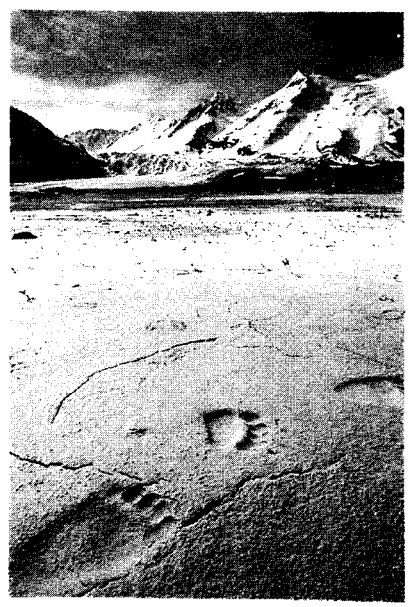


Photo: Art Wolfe

PRESERVATION MAXIMIZES BENEFITS TO BRITISH COLUMBIA

The cost/benefit analysis of the options as outlined by CORE concluded:

- "The overall expected value of the mining alternative (to the Province) is estimated at minus $360 million."
  CORE Report [13]
- "The expected return (to the Province) from selecting the preservation alternative is $410 million."
  CORE Report [14]

Down through the ages grizzlies have walked the sandbars of Tatshenshini. The choice we make today will determine whether future generations have the chance to thrill to the pristine wonders of North America's wildest river.

Sources

1 Resolution passed at 18th IUCN Assembly; Perth Australia; Dec. 1990
2 CORE Tatshenshini-Alsek Land Use Report, Vol. 1, Pg. 26 & 29
3 Tatshenshini-Alsek Wilderness Study: J.S. Peepre and Associates, July 1992, Pg. 18
4 The Conservation Significance of Bears and their Habitat in The Tatshenshini River Valley: S. Herrero, A. Holcroft, R. Roth & L. Wiggins, Pg. 26
5 CORE Report, Vol. 1, Pg. 29
6 Resolution passed at 18th IUCN Assembly; Perth Australia; Dec. 1990
7 Gerald Harper, President, Geddes Resources Ltd., May/90
8 Geddes Resources Ltd., Windy Craggy Report: Pg. 18
9 U.S. Bureau of Mines, Robert Kleinman
10 Errington, J.C. and K.D. Ferguson: "Acid Mine Drainage in B.C. Today and Tomorrow", Proceedings Acid Mine Drainage Seminar, Halifax 1987 Pg.67-88
11 Worldwatch Institute: Mining the Earth. Vol. 109, P 18
12 University of California Mine Waste Study Report, 1988
13 CORE Report, Vol. 2, Pg. 5-61
14 CORE Report, Vol. 1 pg. 59
15 CORE Report, Vol. 2, Pg. 3-2
16 CORE Report, Vol. 1, Pg. 67
17 CORE Report, Vol. 1, Pg. 76
18 CORE Report, Vol. 2, Pg. 65
19 CORE Report, Vol. 1, Pg. 76
20 CORE Report, Vol. 2, Pg. 5-5
21 CORE Report, Vol. 2, Pg. 2-13
22 Geddes Resources Ltd., Windy Craggy Report Pg. 20
23 CORE Report, Vol. 1, Pg. 76
24 United Fishermen of Alaska: Resolution 92-2
25 CORE Report, Vol. 1, Pg. 98
26 CORE Report, Vol. 2, Pg. 2-6
27 CORE Report, Vol. 1, Pg. 67
28 Keith Somerville, Geddes Resources, Haines' Public Meeting Nov. 1991
29 Herrero Study: Pg. 29
30 Herrero Study: Pg. 3
31 Herrero Study: Pg. 28
32 Geddes Resources Ltd., Windy Craggy Report: Pg. 22
33 Geddes Resources Ltd., Windy Craggy Report: Pg. 22
34 BC Ministry of Energy, Mines and Petroleum Resources, Mar. 26/91
35 Geddes Resources Ltd., Windy Craggy Report: Pg. 9
36 CORE Report, Vol. 1, Pg. 5
37 G. Harper, President, Geddes Resources Ltd., Windy Craggy Tour, Nov. 1991
38 CORE Report, Vol. 1, Pg. 99
39 CORE Report, Vol. 1, Pg. 16
40 CORE Report, Vol. 1, Pg. 106
41 See: Impacts of Proposed Coal Mine in the Flathead River Basin, Dec. 1988, International Joint Commission
42 Geddes Resources Ltd., Rights Offering, July 24/92
43 CORE Report, Vol. 2, Pg. 59
44 CORE Report, Vol. 2, Pg. 55

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TATSHENSHINI
Wild

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