

# Reconciliation, Indigenous lands & surveying

University of Calgary  
March 31, 2017

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# Reduced to 1 slide

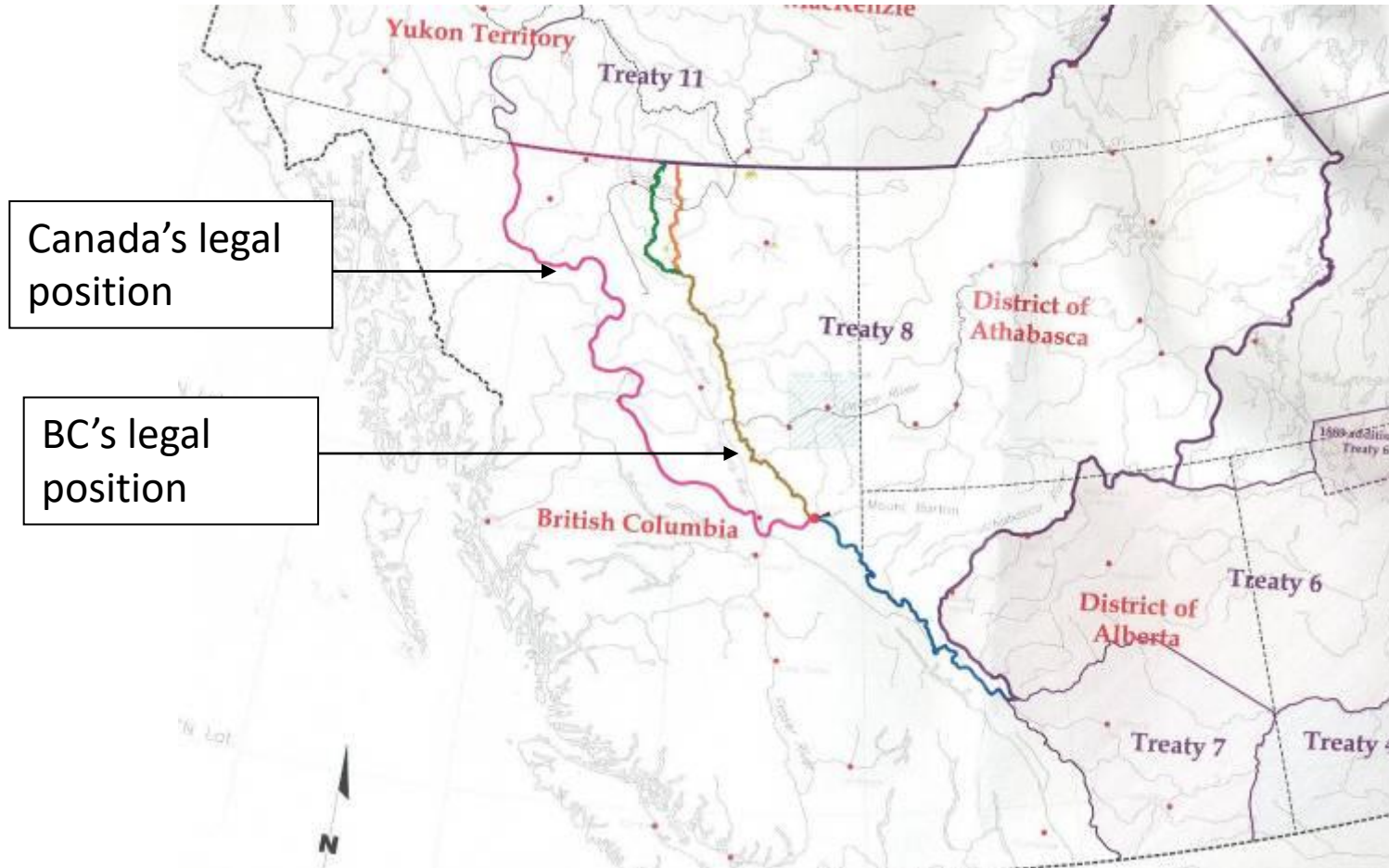
Reconciliation = Respecting all parcels (e.g. Aboriginal title) and boundaries (e.g. FIG fit-for-purpose):

- Canadians must “repudiate concepts used to justify sovereignty over Indigenous lands” and adopt UNDRIP.
  - *Truth & Reconciliation Commission (2015)* – Call to action #45
- “Land as an animate being, relative, food provider, teacher of law and governance to whom we are accountable.”
  - Daigle. Spatial politics of ... Indigenous self-determination. *The Canadian Geographer* (2016).

# Part 1: Surveying as an institution

- Infrastructure
- Innovation
- Ideas
- Ideals
- Individuals
- Imagination
- Indigenous lands

# Treaty 8 westerly boundary



# Three shout-outs

- Surveyors are “highly intelligent men [and women] who are gifted astronomically, mathematically, and logarithmically”
- “As professionals, you are expected to exhibit a higher standard of intelligence than the person on the street”
- Surveyors are “agents of change”

# Two judgments - 2016

PEI CA: “A surveyor acts in a quasi-judicial capacity ... is treated as an expert and accorded deference ... acting in the capacity of the state.”

BC CA: “Surveyors adjudicate ... Surveyors must approach their work with a judicial mind ... Their duty of impartiality is owed to society at large.”

# Territoriality



# Royal Proclamation of 1763

- It was “just and reasonable” that Indigenous peoples not be molested in possession of land.
- Canada (Quebec) could not survey:
  - Beyond the “bounds of their government;” or
  - Upon lands which had not been ceded to or purchased by the Crown.



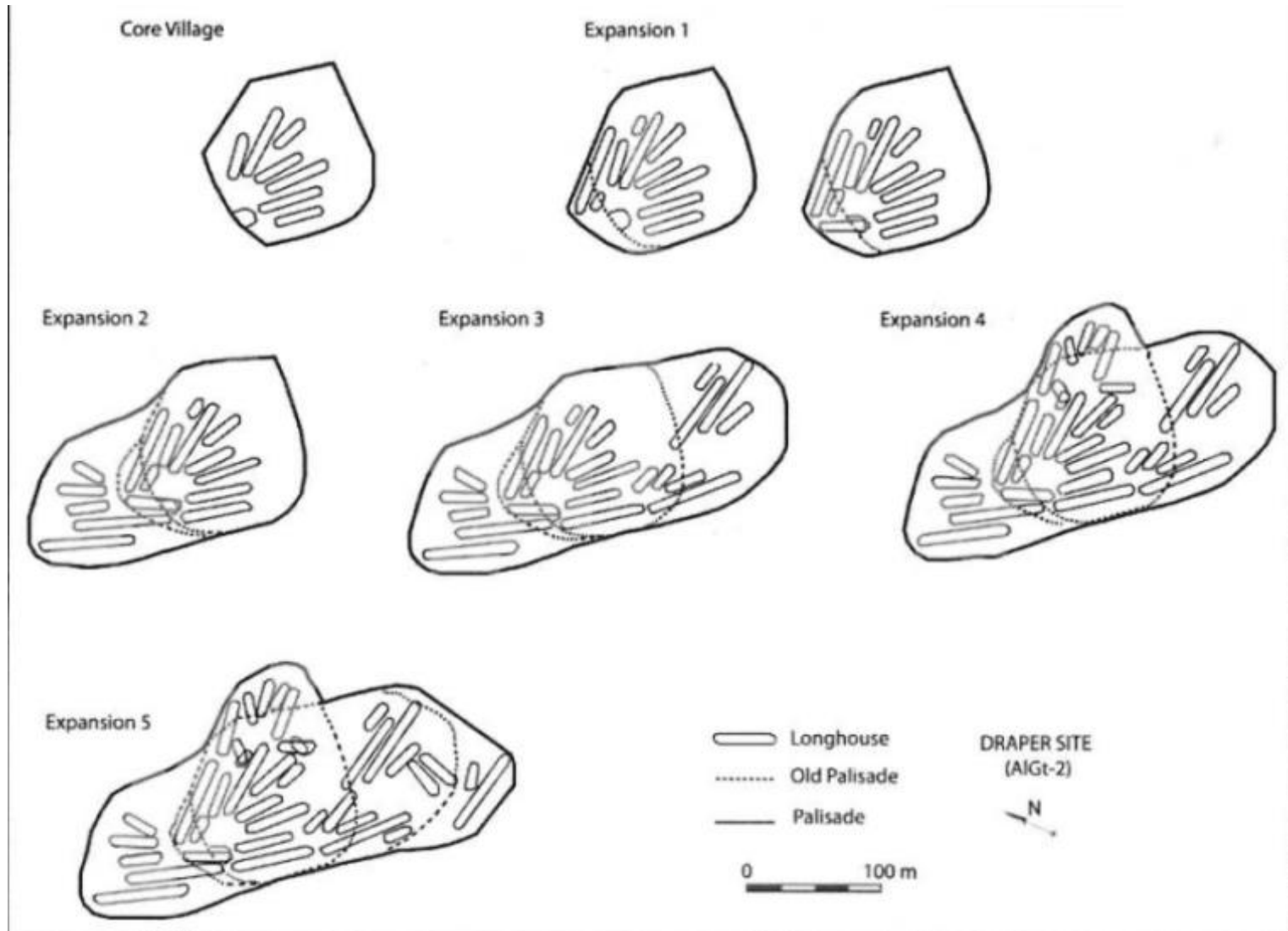
# Durham Report of 1839

- If land “is so carelessly surveyed that the boundaries of property are incorrectly defined” there “is a store of mischievous litigation.”
- “Without accurate surveys of public lands there can be no security of property in land, no certainty as to the position of boundaries marked out in maps or named in title deeds.”

# Vignette 1: Indigenous parcels & bounds

- 1631: “Very exact and punctual in the bounds of their lands ... I have known them to make bargain and sale for a small piece of land.”
- 1700’s: Inuu of Quebec demarcated parcels of 4 sq leagues (32 sq km) for trapping purposes
- 1850: *Robinson-Huron Treaty* – Whitefish Lake First Nation clearly defined its parcel

# Huron: Draper Village (1475)



# PLAN OF THE WHITE FISH LAKE

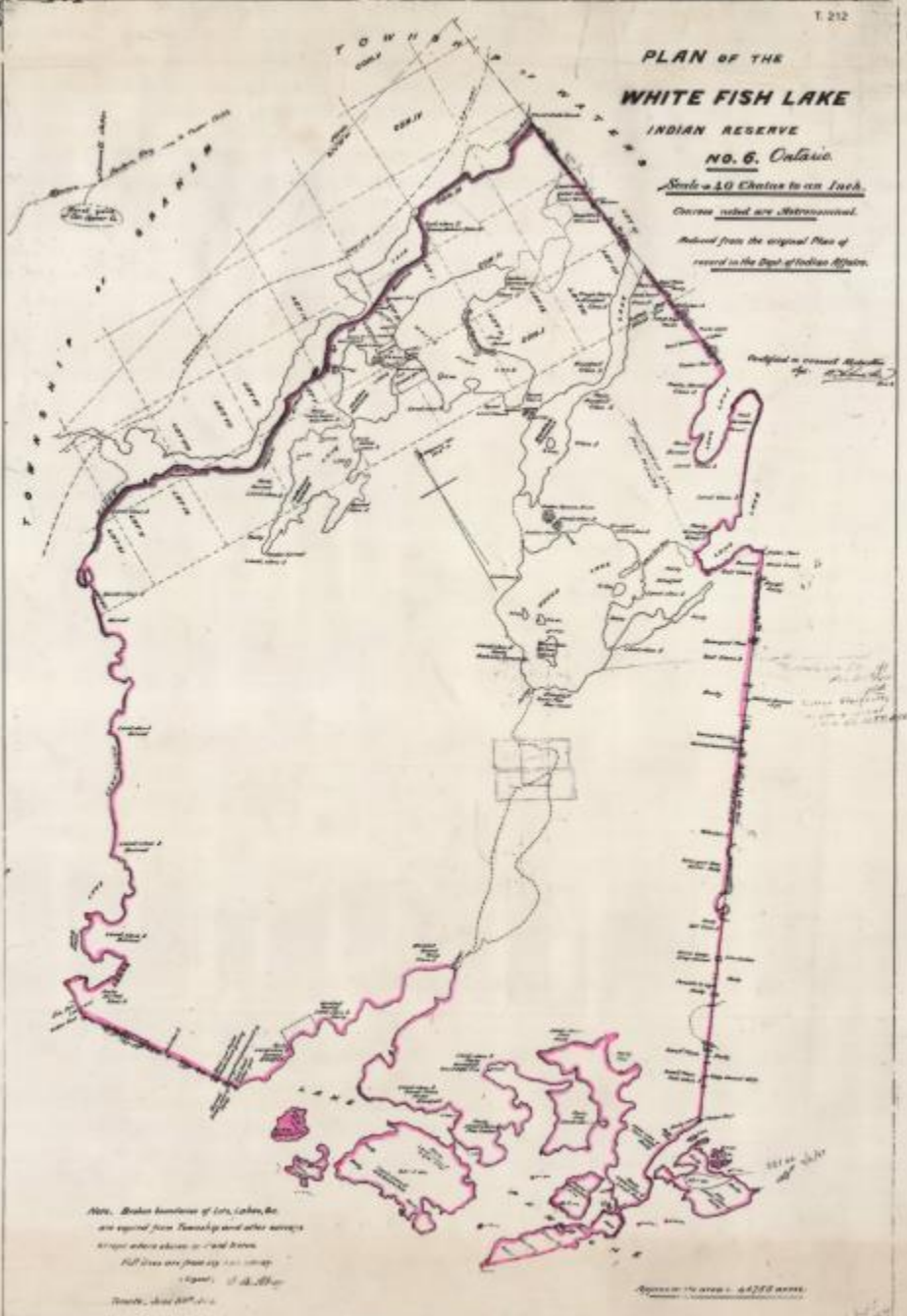
INDIAN RESERVE

NO. 6, Ontario

Scale = 40 Chains to an Inch

Contours noted are Astronomical.

Adapted from the original Plan of record in the Dept. of Indian Affairs.



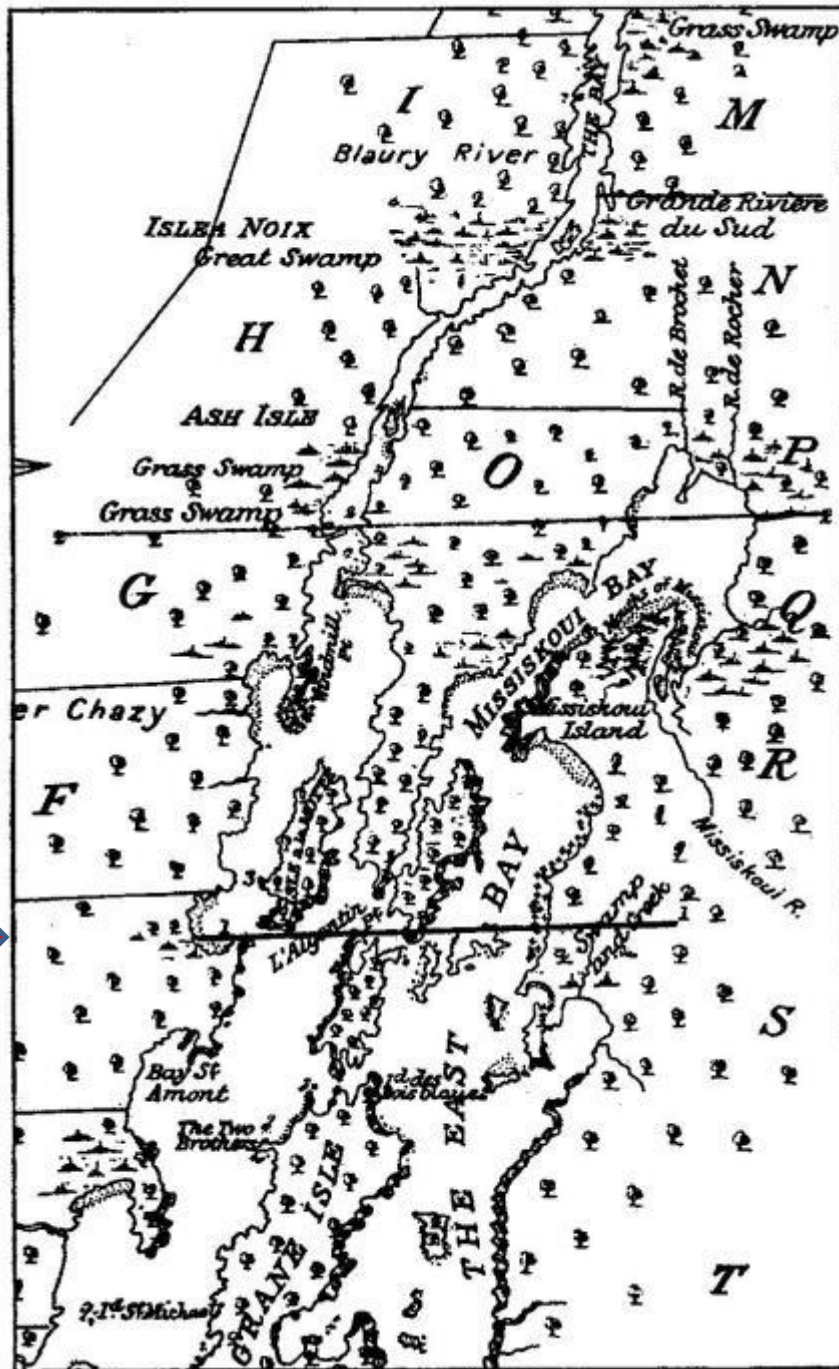
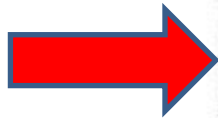
Note: Broken boundaries of lots, lakes, &c. are copied from Township and other surveys except where shown in red lines. All lines are from original survey. (Signed) J. D. B. 1880

Area of the area = 44750 acres.

TOP-  
LICE  
513  
1513

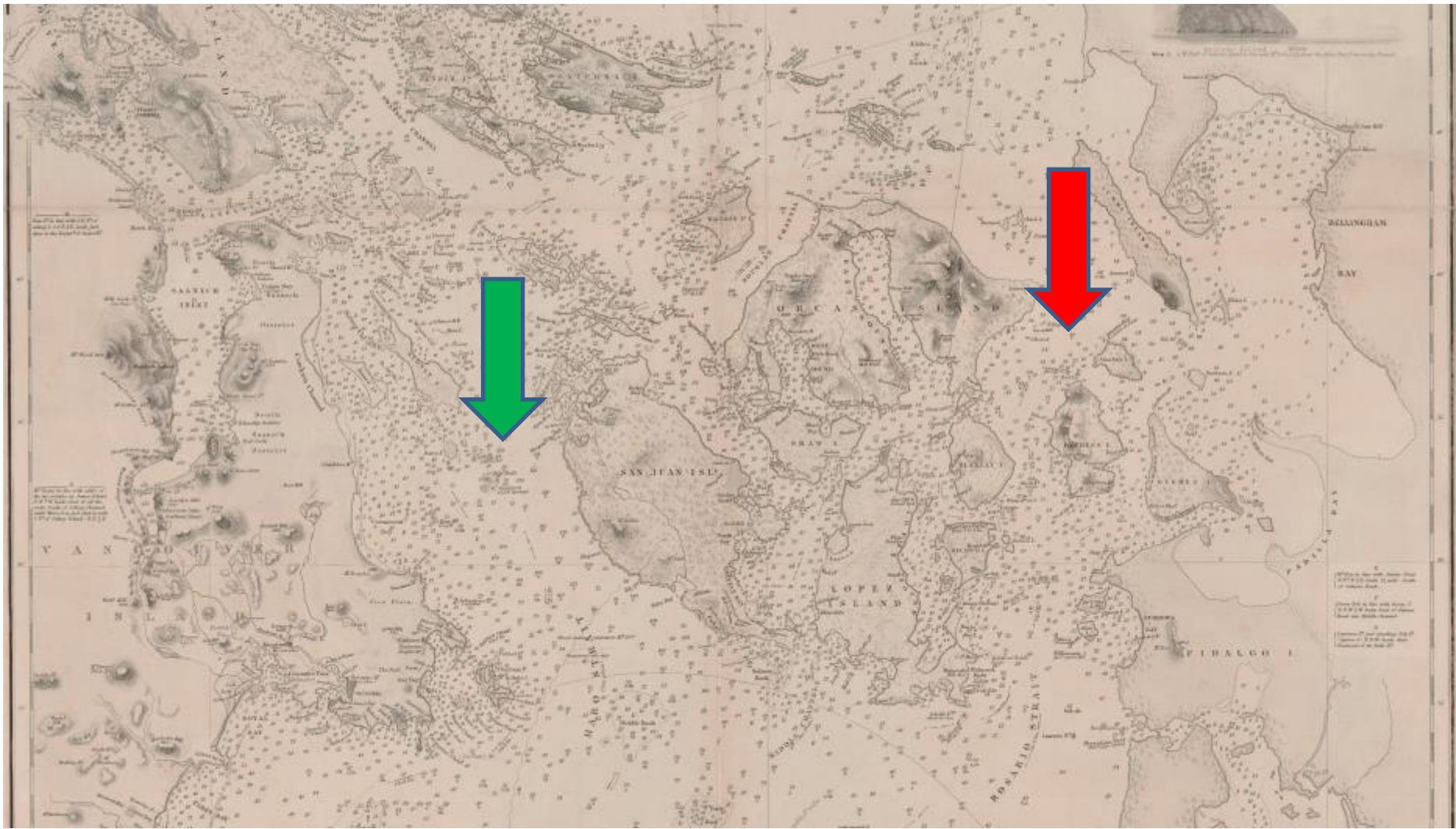
# Vignette 2: Merits of poor equipment

- Canada-USA boundary “inconvenient to the point of freakishness.”
- 1614: New Netherlands Co granted the right to trade between 40<sup>th</sup> and 45<sup>th</sup> parallels
- 1763: South bound of Quebec at 45<sup>th</sup> parallel
- 1766 survey: “Unique in the history of boundary disputes”



# Vignette 3: Resolving conflicts

- 1846 *Oregon Treaty*: Southerly through the middle of the channel that separates the continent from Vancouver's Island
- Haro Strait (west) vs Rosario Strait (east)
- 1855: Battle for the Sheep
- 1859-1871: Pig War
  
- 1872: Emperor of Germany + 3 fact-finders = legal principles + objective facts



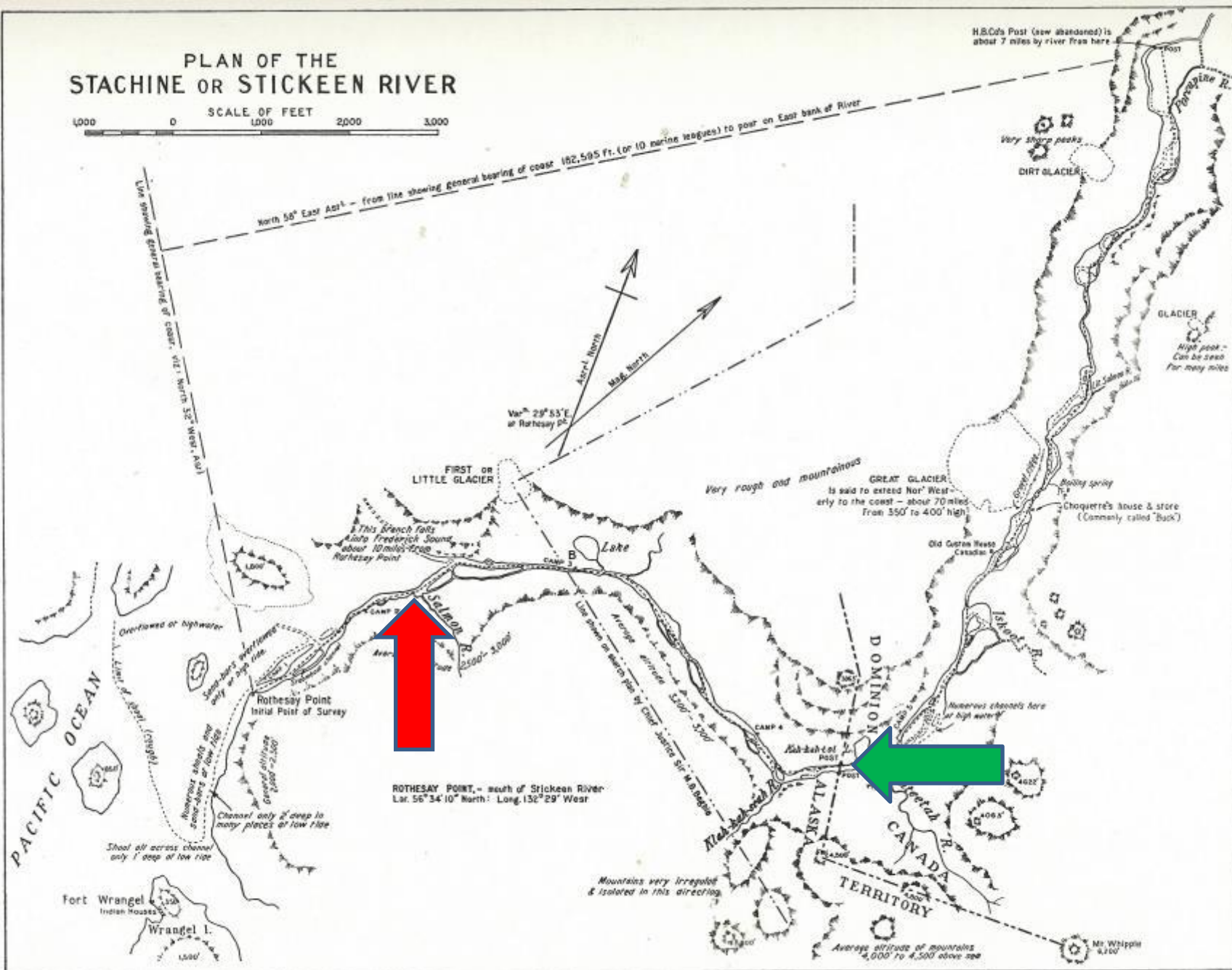


# Vignette 4: Let the man go free

- 1825 Russia-Britain Agreement: 54-40N, then up Portland Canal to 56<sup>th</sup>, then parallel with coast along summit (10 leagues inland) to 141<sup>st</sup>
- 1867: Russia transferred Alaska to USA for \$7.2M
- 1876: Peter Martin assaulted a policeman
- Where? East (BC) or west of bound (Alaska)?

# PLAN OF THE STACHINE OR STICKEEN RIVER

SCALE OF FEET  
 1000 0 1000 2000 3000



Copy of Joseph Hunter's plan of Stikine River, June 30, 1877.

# Part 2: Indigenous lands

- s.91(24): Parliament has authority over “Indians, and lands reserved for Indians.”
- s.35: Aboriginal & treaty rights “recognized & affirmed”
- *Indian Act (ILR); First Nation Lands Management Act*
- *Canada Lands Surveys Act (CLSR) = Reserves*
- SCC decisions – Honour of Crown, Aboriginal title, fiduciary duty, minimal impairment

575 First Nations = 3,100 IR\* = 35,524 sq km\*



# Much variation across communities



**Six Nations Reserve (18,000 ha - 10,000 people)**



**Sand Point Reserve (987 ha - 0 people)**

# Possession of Reserve

Title to Reserves is held in trust by Canada for the benefit of First Nation:

- Right to possess parcel distinct from title to parcel (*Tyendinaga Mohawk Council v Brant*, 2014)
- Leases of IR must adhere to FN policies & plans (*Boyer v R*, 1986).

# Parcel: Area of land (CLSR) to which rights apply (ILR)



No. ....  
File 127/33-11D-17-19

DEPARTMENT OF INDIAN AFFAIRS & NORTHERN DEVELOPMENT

~~DEPARTMENT OF CITIZENSHIP AND IMMIGRATION~~

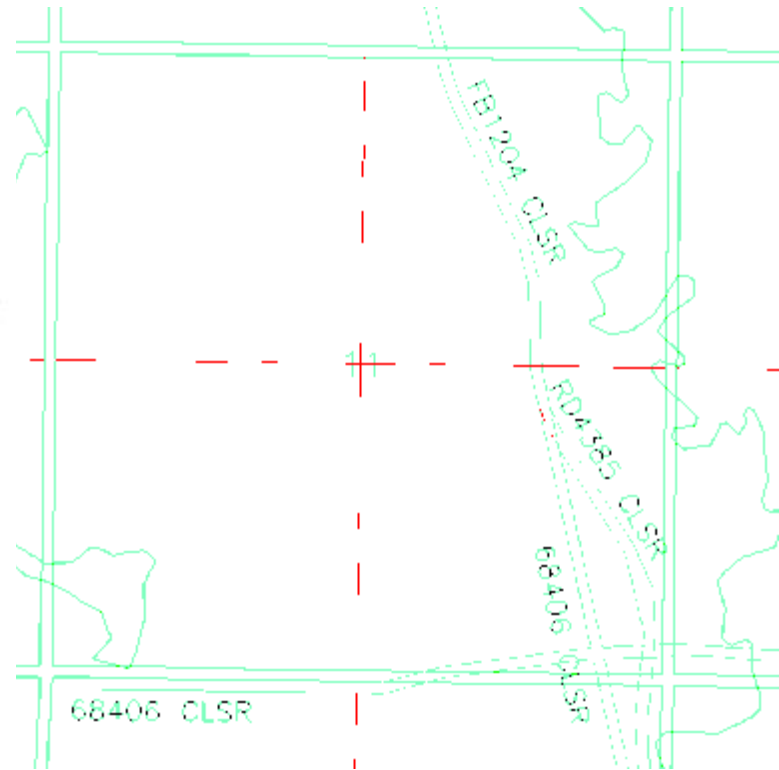
## CERTIFICATE OF POSSESSION

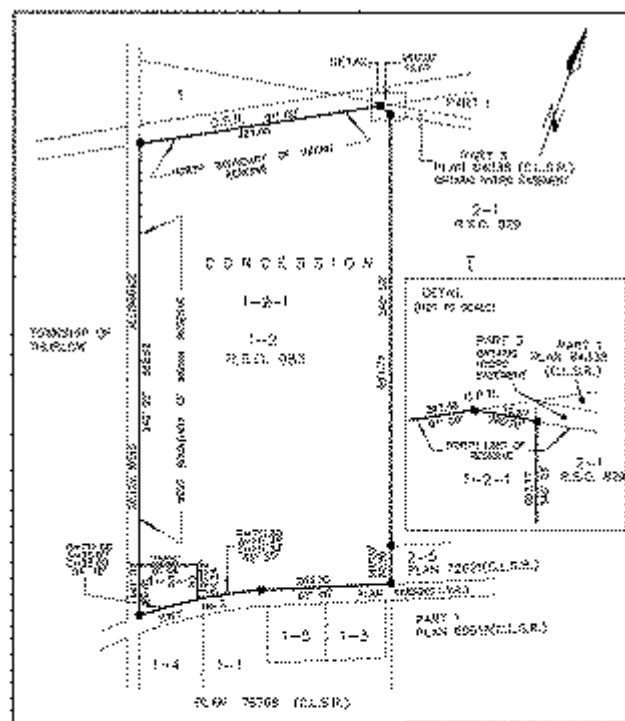
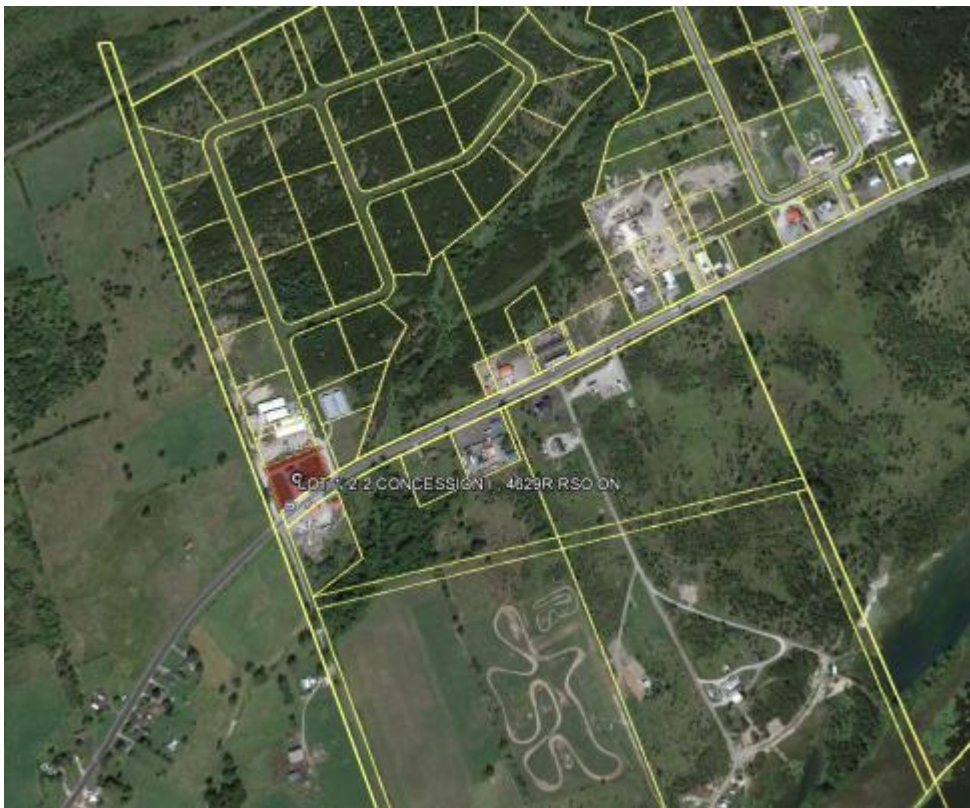
Under Section 20, THE INDIAN ACT

This is to certify that Agnes Shannacappo No. 110

.....  
.....  
of the Rolling River ..... Band of Indians, in the  
Province of Manitoba ..... is entitled to  
possession of:

ALL AND SINGULAR that certain parcel or tract of land being the whole  
of the southwest Quarter of Section 11, Township 17, Range 19, west of  
the Principal Meridian, Rolling River Indian Reserve No. 67, in the  
Province of Manitoba, shown on Plan of Record No. 4384, Canada Lands  
Surveys Records, Ottawa. \_\_\_\_\_





METRIC MEASUREMENTS ON THIS PLAN ARE IN METERS AND MAY BE REFERRED TO BY QUANTITIES OF 0.3042

PARCEL	DISPOSAL
1-2-1	2-1 R.S.O. 4629
1-2-2	2-1 R.S.O. 4629
1-2-3	2-1 R.S.O. 4629
1-2-4	2-1 R.S.O. 4629

REGISTRATION PLAN OF  
 LOTS 1-2-1 AND 1-2-2, (FORMERLY 1-2) CONCESSION 1,  
 TYENDINAGA INDIAN RESERVE No. 36  
 TOWNSHIP OF TYENDINAGA, COUNTY OF HASTINGS  
 PROVINCE OF ONTARIO

Dated on this 22nd day of June 1993 I, the undersigned, Clerk of the Court, do hereby certify that the above plan is a true and correct copy of the original plan as filed in my office. 1993 Clerk of the Court	I, the undersigned, Surveyor, do hereby certify that the above plan is a true and correct copy of the original plan as filed in my office. 1993 Surveyor	I, the undersigned, Registrar, do hereby certify that the above plan is a true and correct copy of the original plan as filed in my office. 1993 Registrar
--	---	---

REGISTRATION NO. 06217 FILE 06217 R.S.O. 4629 R



# Crown's fiduciary duty: Reserves

Prior: Mediate between FN & others

After: Protect FN interests from invasion/destruction

*(Guerin v The Queen, 1984)*

Surrenders: Prevent exploitive bargains

*(Musqueam v Board of Review, 2016)*



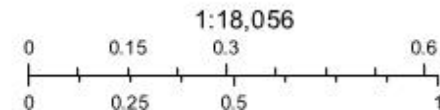
# Musqueam 2 Indian Reserve

Showing Shaughnessy Golf and Country Club lease



2016-10-21

- Indian Reserve Boundary
- BCR 18 (2)
- Designated Land
- Band Land

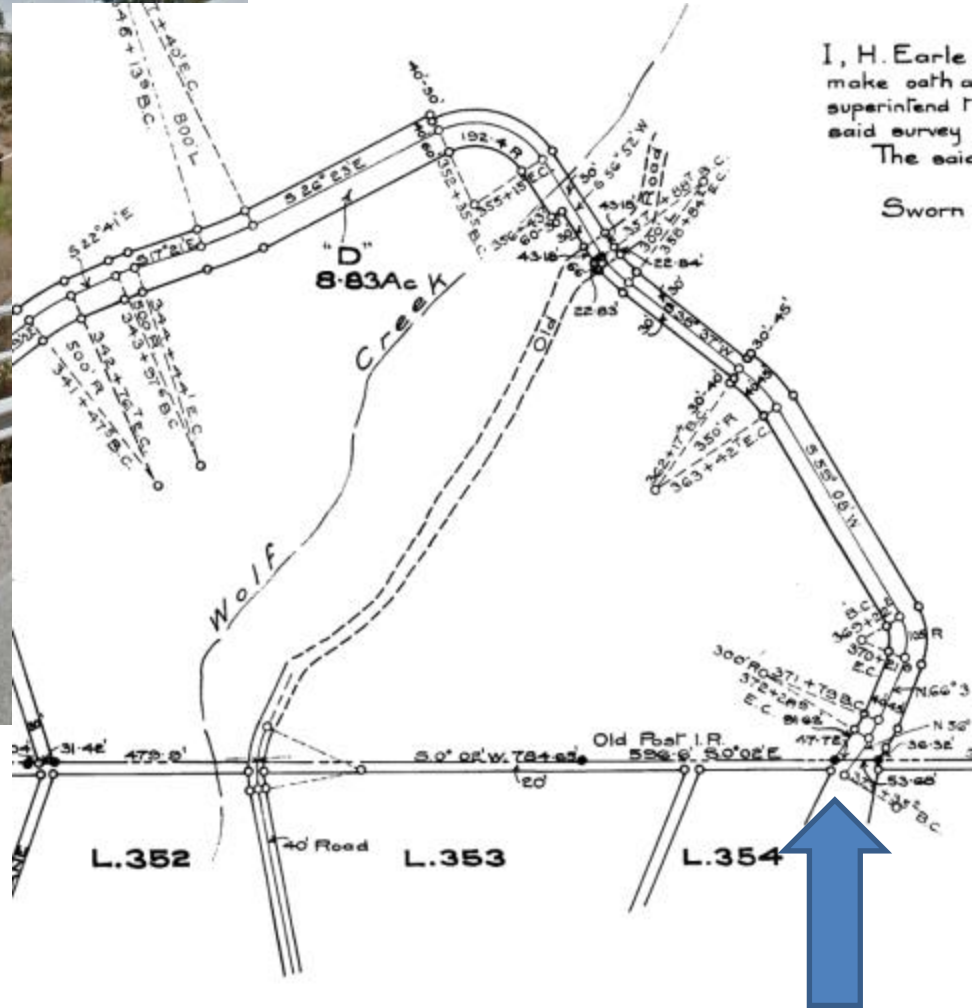


# Minimal impairment

- Crown can take land from Reserve as public duty
- 1925: Irrigation canal built (56 ac)
- 1957 OIC: “The whole of those rights of way”

BUT: Crown to take “only minimum interest required” to ensure “minimal impairment of use & enjoyment of Indian lands” (*Osoyoos v Oliver*, 2002)



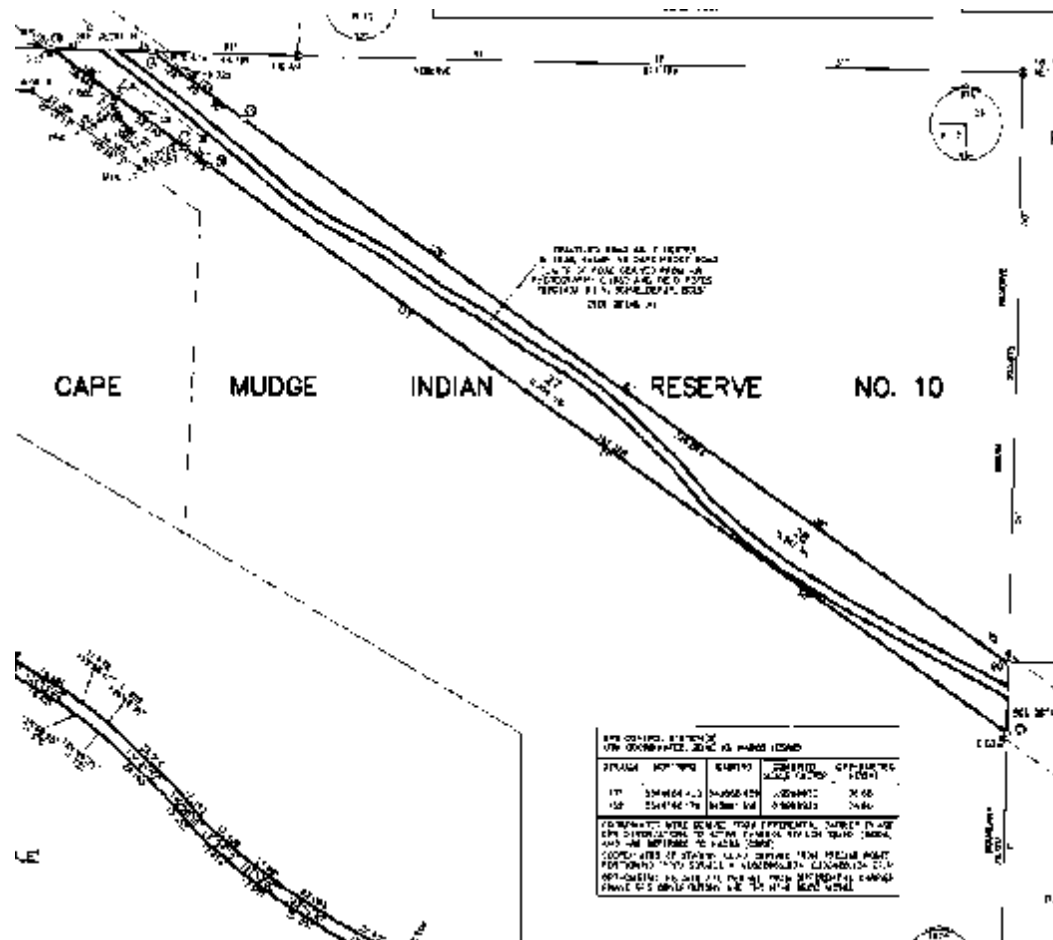


# *First Nation Land Management Act*

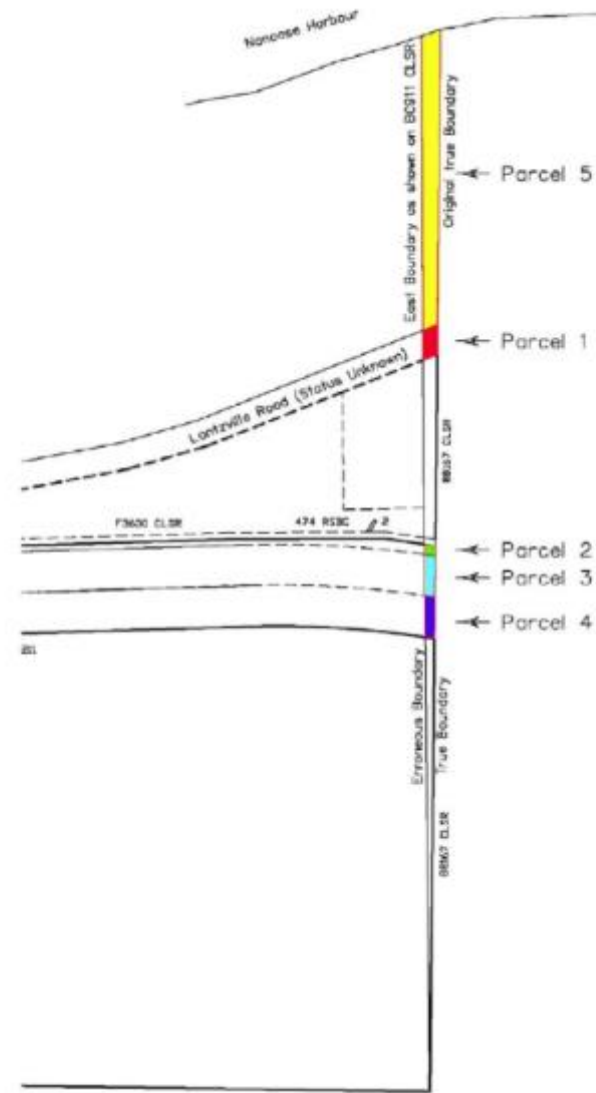
6(1) A First Nation that wishes to establish a land management regime ... shall adopt a land code:

A description of the land that is to be subject to the land code that the **Surveyor General may prepare ...** or any other description that is ... sufficient to identify those lands.

# Cape Mudge FN: Travelled road



# Nanoose FN: Encroachment





# Sioux Valley Dakota: Watercourse shift



# Indigenous Land Title Proposal (ILTP): FN-driven & opt-in





# Consolidated Registry Framework

## Indigenous Land Title Registrar

A single-location, online registry capable of accommodating the registration of all land related transactions affecting all types of Indigenous lands in Canada

### Indigenous Land Title Registry

- Torrens Registry
- Own rules, regulations, processes
- Utilizes Canada Lands Survey System

### Indigenous Land Title Sub-Registry

- Three Deeds Registries
- Own rules, regulations, processes
- Utilize Canada Lands Survey System

ILRS  
Sub-Section

FNLRS  
Sub-Section

SFFNLR  
Sub-Section

### Undefined Transition Process

- Registry Modernization  
Regulation to be developed  
with Canada

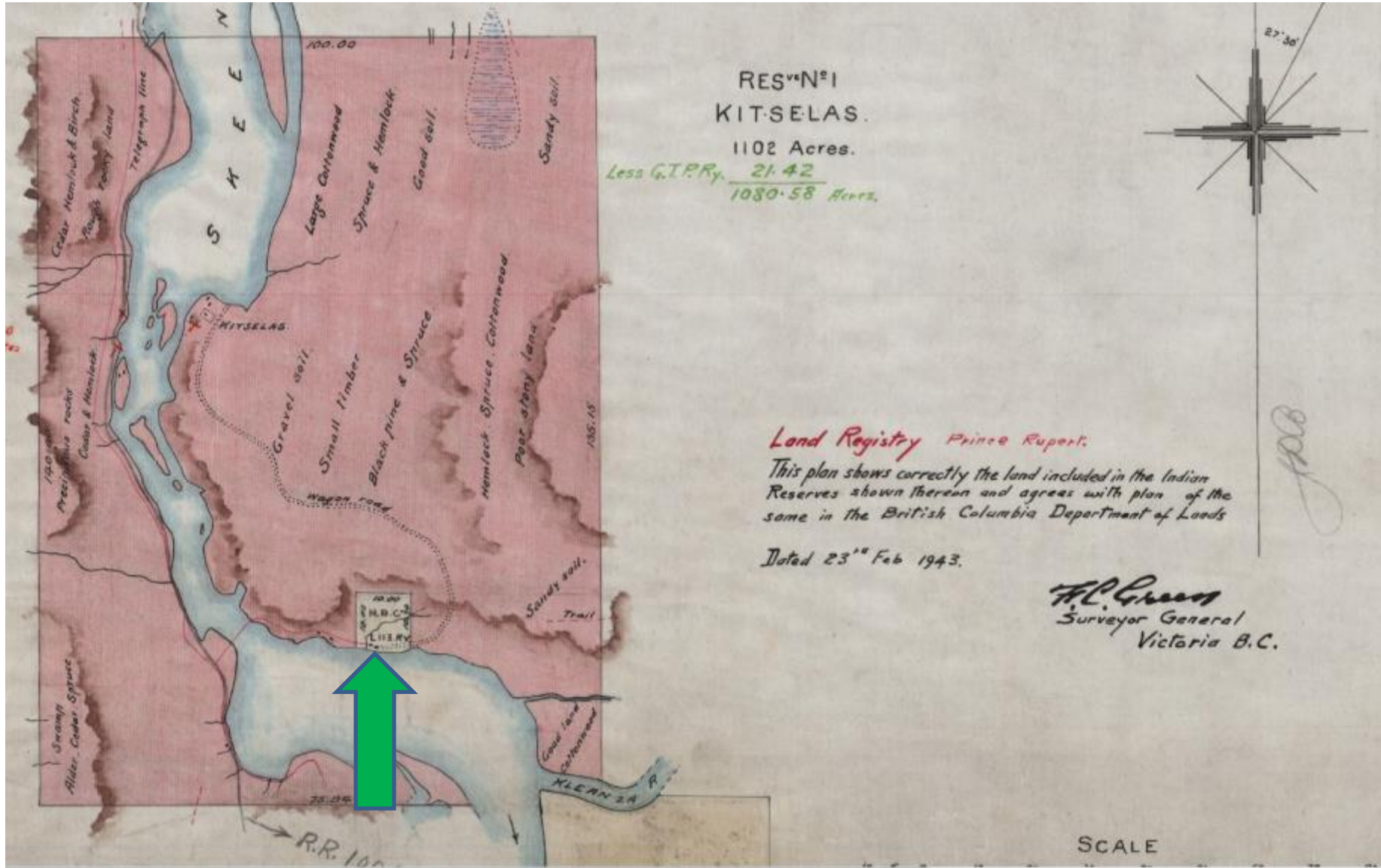
ILRS

FNLRS

SGFNLR

Existing INAC Land Registries

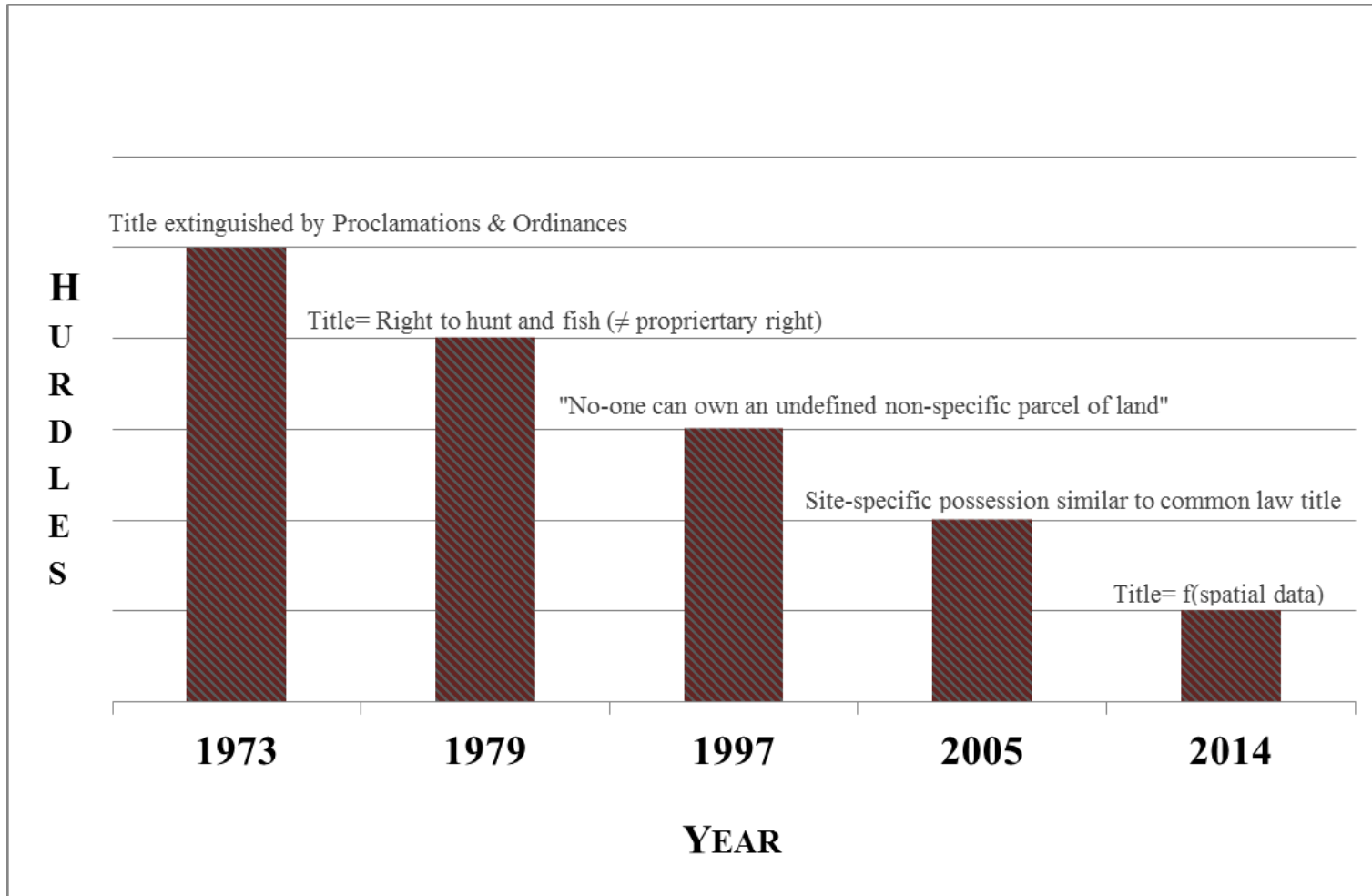
# Specific Claim: *R v Kitselas FN* (2014)



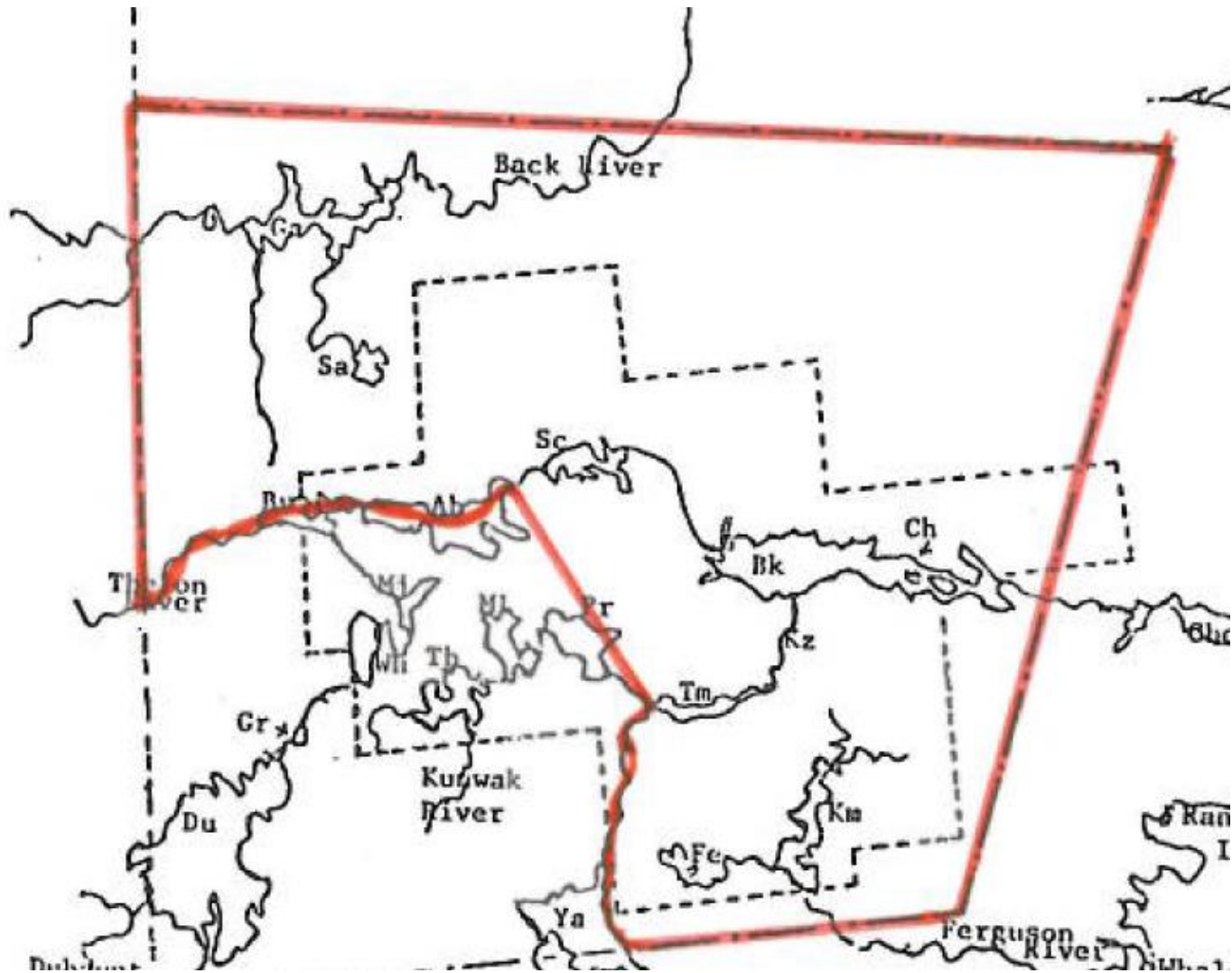
# Aboriginal title: Three-part test

- Was land occupied at time of Crown sovereignty?
- Was occupation exclusive?
- Has occupation been continuous?

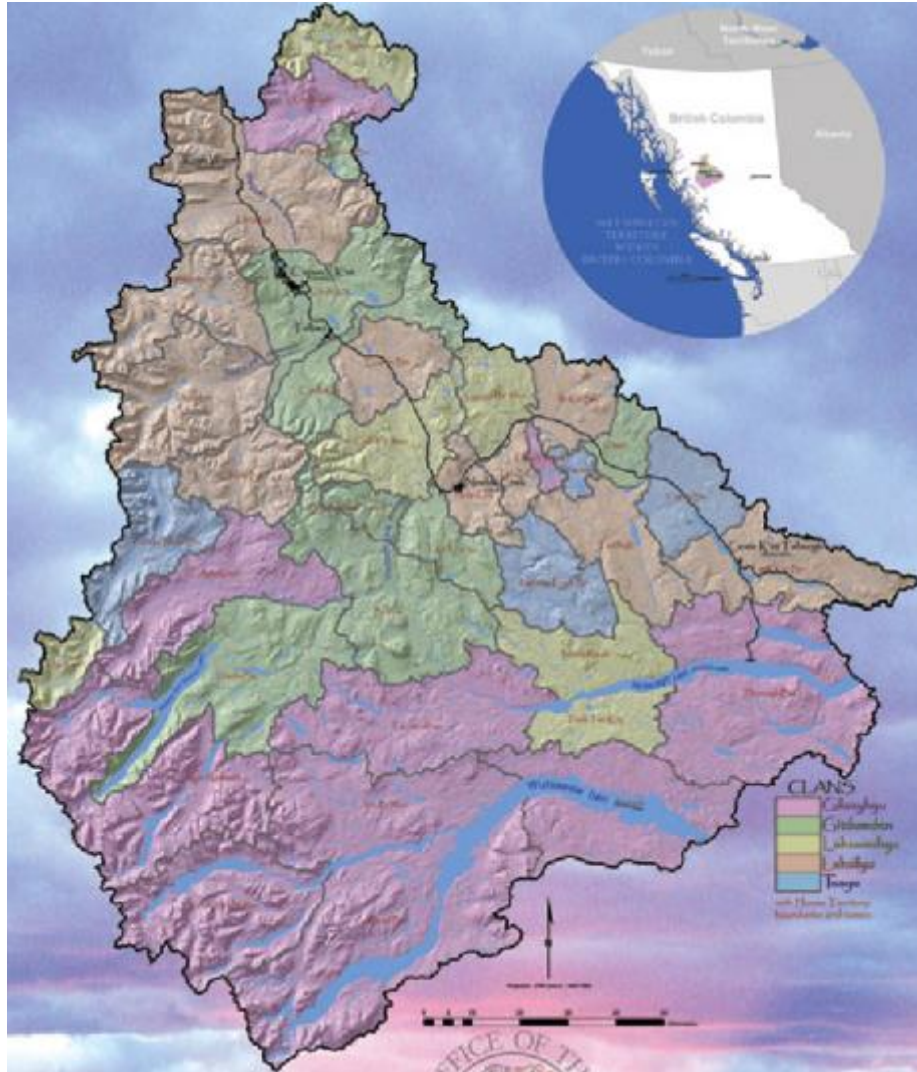
# Evolution of Aboriginal title



# *Baker Lake (1979) = Right to use*

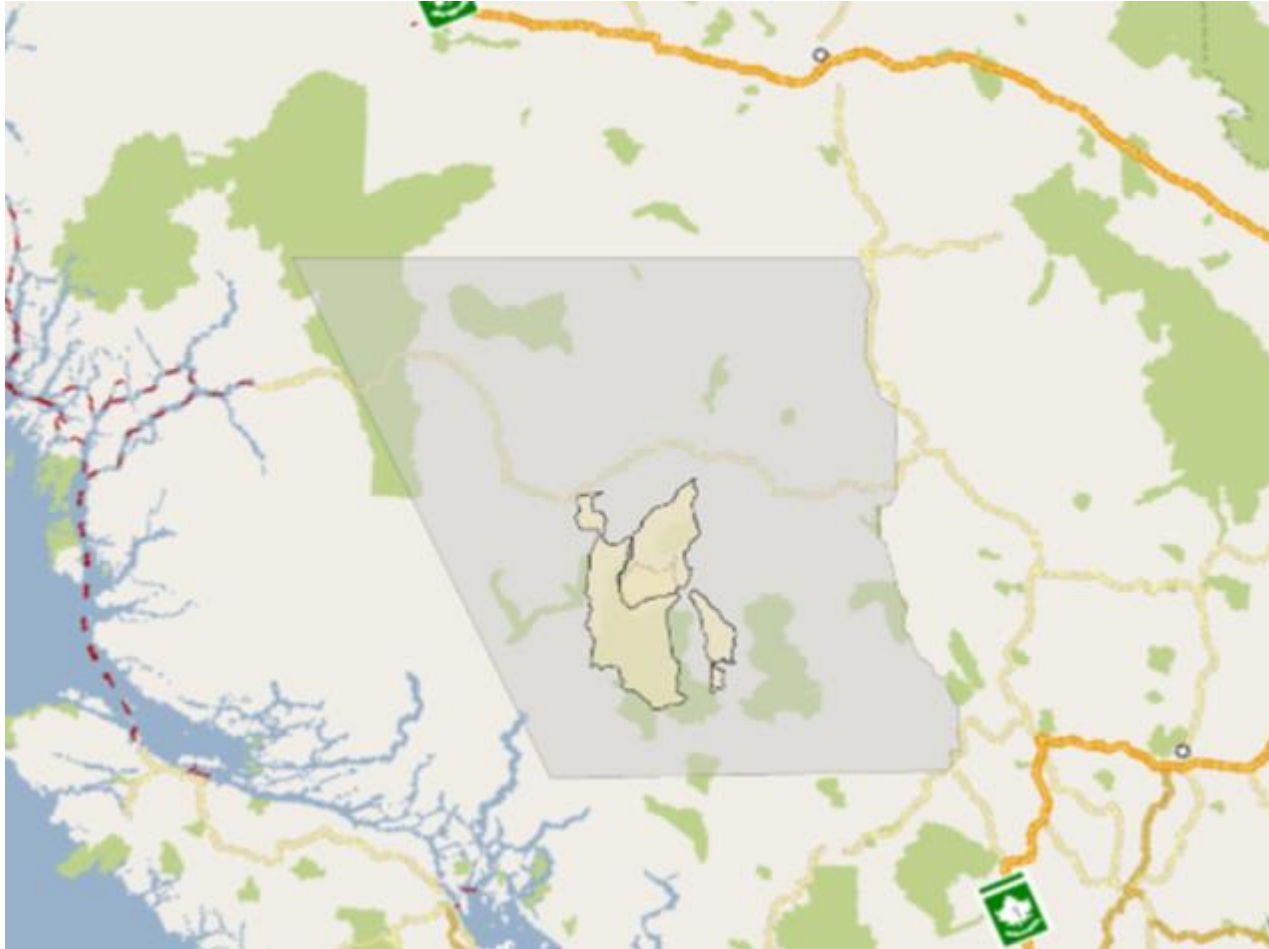


Wet'suwet'en (1997) = 20,000 km sq



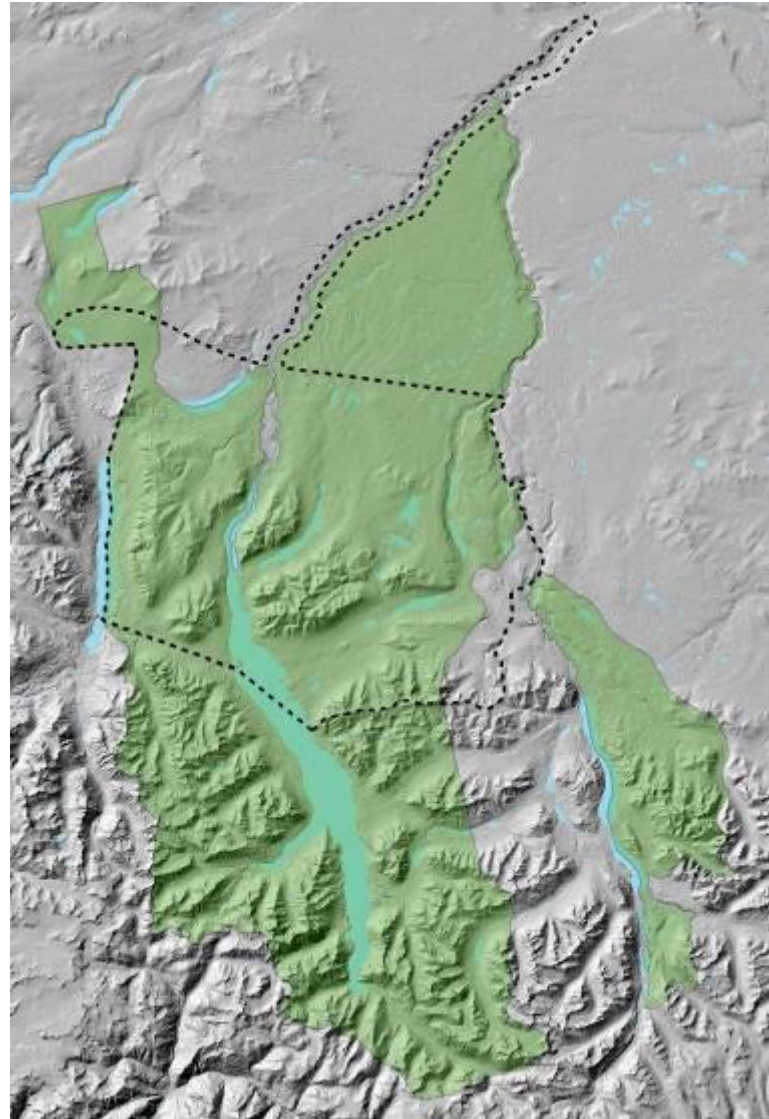


*Tsilhqot'in v BC (2014) = 88,000 sq km*

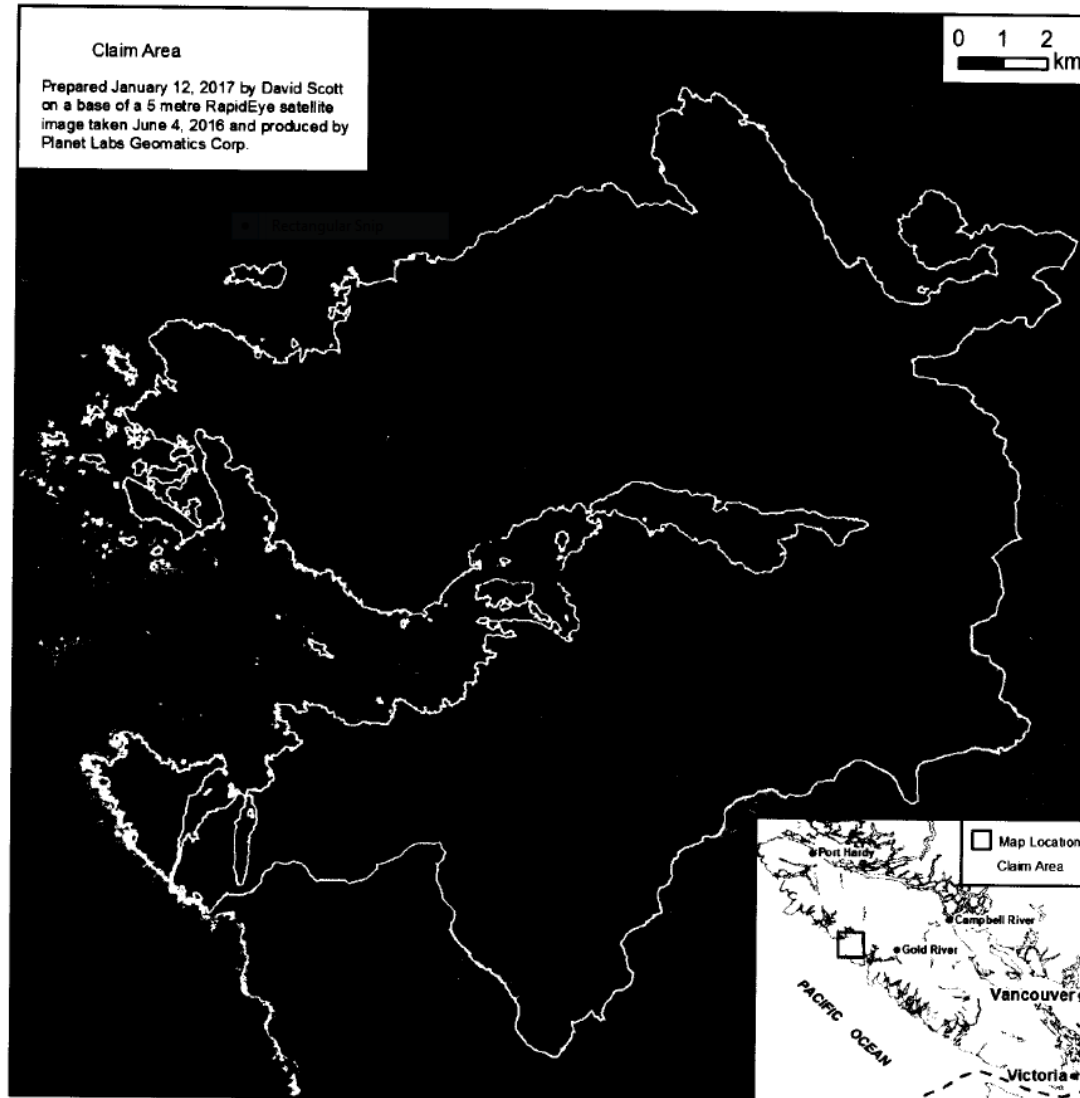


Green:  
Area claimed  
(4,200 sq km)  
5% of traditional territory

Dashed:  
Area affirmed  
(1,900 sq km)  
Sites in/out



# *Nuchatlaht v BC (2017) = 200 sq km*



## **Bounds of Claim Area**

1. Commencing on Nootka Island at Tahsis Narrows south of Mozino Point at 126° 40' 25.34" W, 49° 51' 25.16" N at **0 metre** elevation.
2. Thence trending generally southsouthwest, west of Tahsis Inlet, approx. 700 metres to height of land at **371 metres**
3. Thence trending generally westsouthwest, west of Tahsis Inlet, approx. 780 metres to height of land at **455 metres**
4. Thence trending generally southeast then generally westsouthwest, west of Tahsis Inlet, approx. 1,255 metres to height of land at **246 metres**
5. Thence trending generally westsouthwest, west of Tahsis Inlet, approx. 2,200 metres to height of land at **562 metres**
6. Thence trending generally westsouthwest then southeast and south, west of Tahsis Inlet at the headwaters of creeks flowing west into Inner Basin, approx 7,470 metres to height of land at **752 metres**
7. Thence trending generally southsouthwest, west of Tahsis Inlet at the headwaters of creeks flowing west into Inner Basin, approx 2,800 metres to a ridge of land at **845 metres**
8. Thence trending generally southsoutheast, west of Tahsis Inlet at the headwaters of creeks flowing west into Inner Basin, approx 3,240 metres to height of land at **768 metres**
9. Thence trending generally westsouthwest, west of Tahsis Inlet at the headwaters of creeks flowing north into Inner Basin, approximately 5,630 metres to height of land at **849 metres**
10. Thence trending generally southwest, at the headwaters of Laurie Creek flowing into Mary Basin and east of Ewart Lake, approximately 11,885 metres to height of land at **289 metres**
11. Thence trending generally northwest, west of Ewart Lake, approximately 6,300 metres to height of land at **628 metres**
12. Thence trending west, south of Nuchatlitz Inlet at the headwaters of creeks flowing north into Nuchatlitz Inlet, approximately 4,385 metres to height of land at **412 metres**
13. Thence trending southwest, south of a lagoon on the south part of Louie Bay, in Nuchatlitz Inlet, approximately 1,390 metres to height of land at **111 metres**
14. Thence trending southwest approximately 605 metres to Pacific shore of Nootka Island at 126° 56' 32.3" W, 49° 43' 5.62" N at **0 metre** elevation.
15. Thence approximately 138 kilometers of shoreline to the point of commencement at in Tahsis Narrows.

The claim area includes all islands to the west of the lands described herein to a distance of 2 kilometres, including but not limited to islands in Louie Bay, Nuchatlitz Inlet, Mary Basin, Inner Basin, the east shore of Gillam Channel and the south shore of Esperanza Inlet.

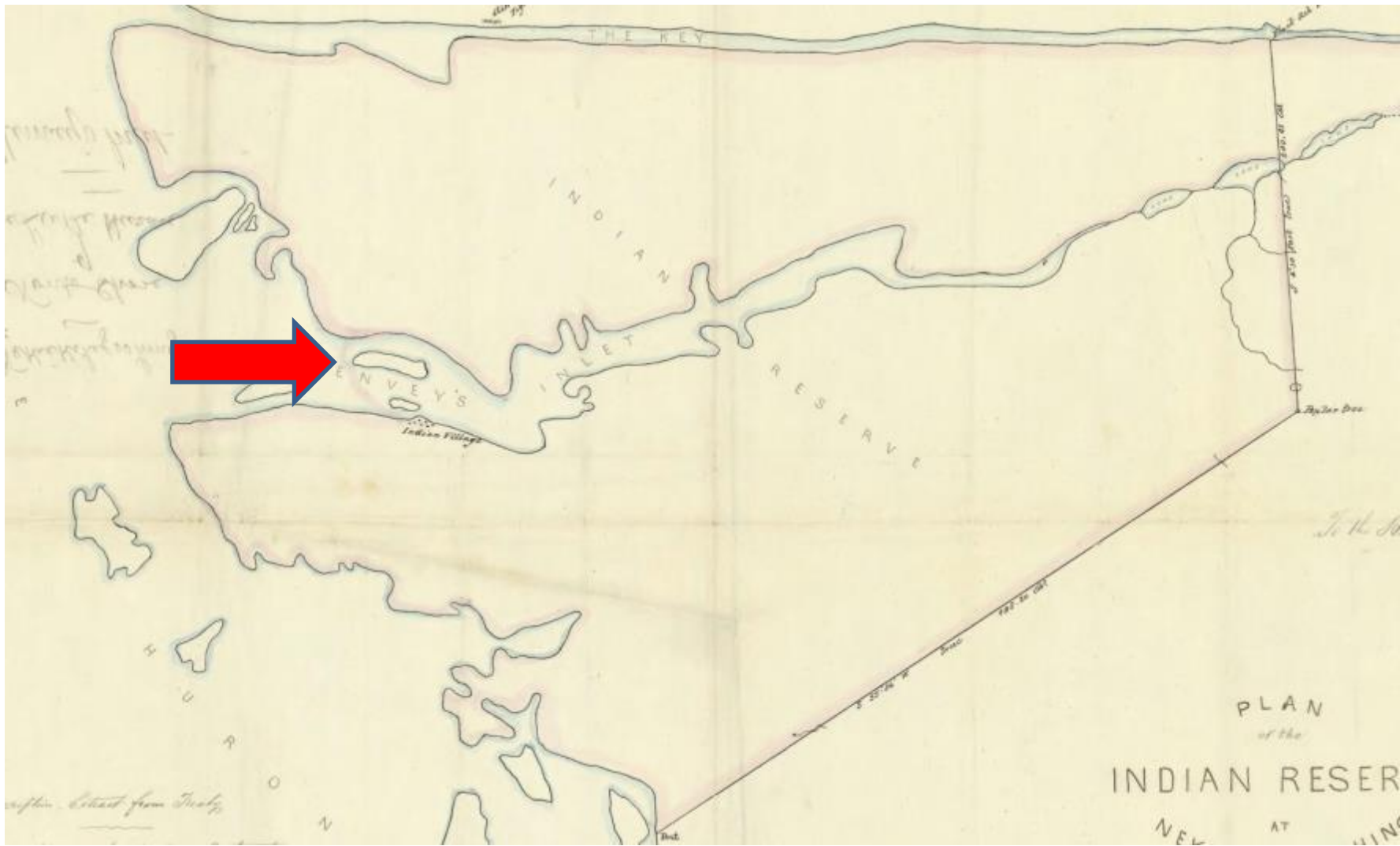
## **Sources:**

# Part 3: Seven case studies

- Inlet in/out of IR?
- Incorrectly surveying IR bound
- Incorrectly defining IR surrender
- Non-survey of IR bound
- Lake in/out of IR?
- Parcel fabric renewal
- Socio-economic effects of informality

# Case study 1: Henvey's Inlet IR





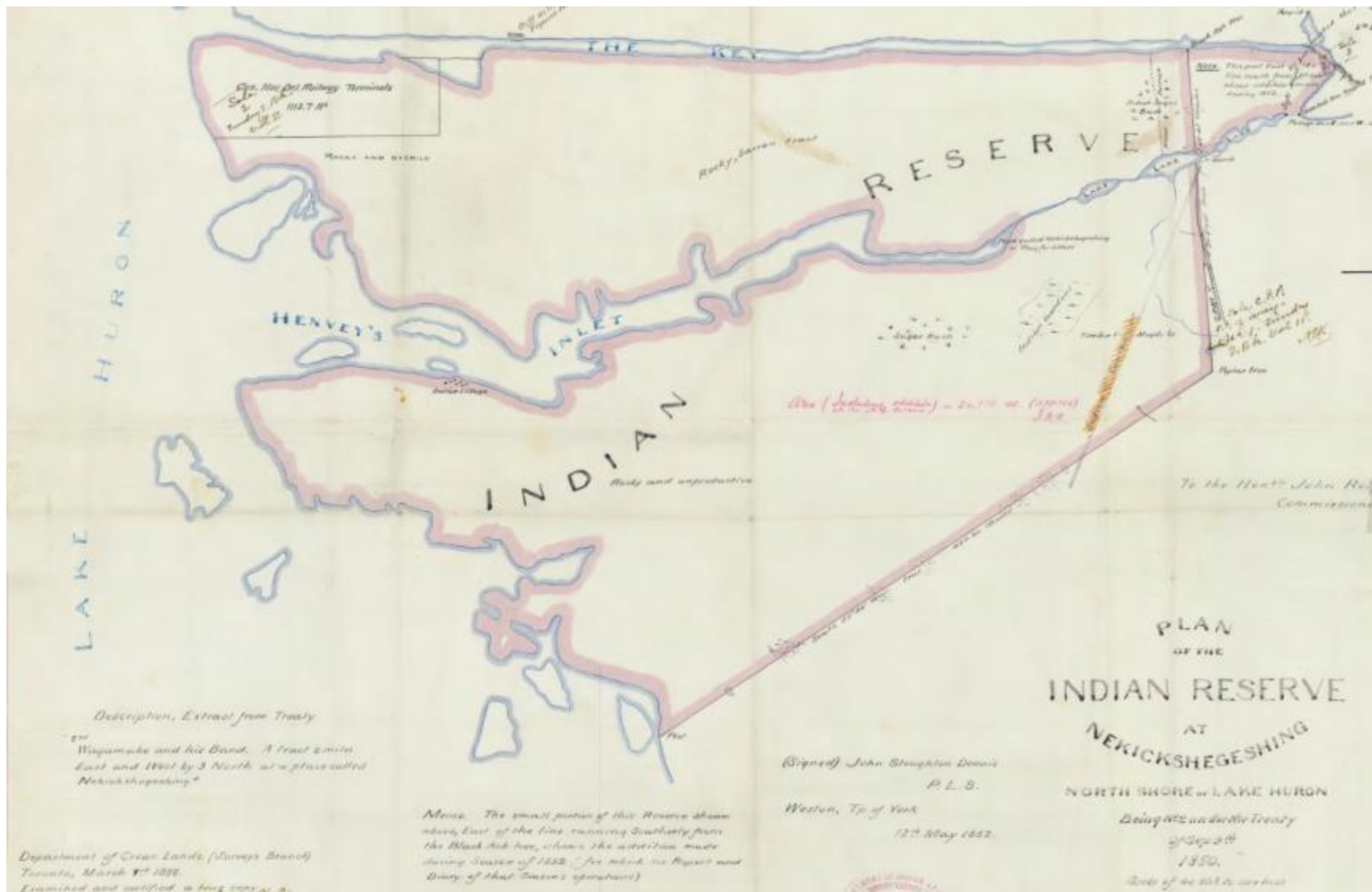
PLAN  
of the  
INDIAN RESERVE  
NEW AT HING

# Dennis' report:

- “... their Reserve was up at or near the head of the Bay on the south side of which their village is situated.”
- “The Bay I identified as Henvey’s Inlet ...”
- “... and after some talking he proposed another outline (the black line on sketch) ...”



2. — Chief Waganakee and Band. A Tract commencing at a post planted on the North East Shore of Lake Arvon about five miles South East of Henvey's inlet, thence following the said Shore of the said Lake Northward crossing said Henry's inlet to the Channel or deep bay called the Key, thence following the



around this reserve and crossing the inlet by rapidity in drawing, but I do not see how the other plan, dated 12th of May, 1852, could have been represented as crossing Hanvey Inlet and including the two islands north of the Indian Village when they are clearly and unmistakably left out by Col. Dennis when coloring with a flat wash yellow the mainland.

Yours truly,

*Ashby White*  
Assistant Commissioner.

*J D McLean*

J D McLean Esq.,

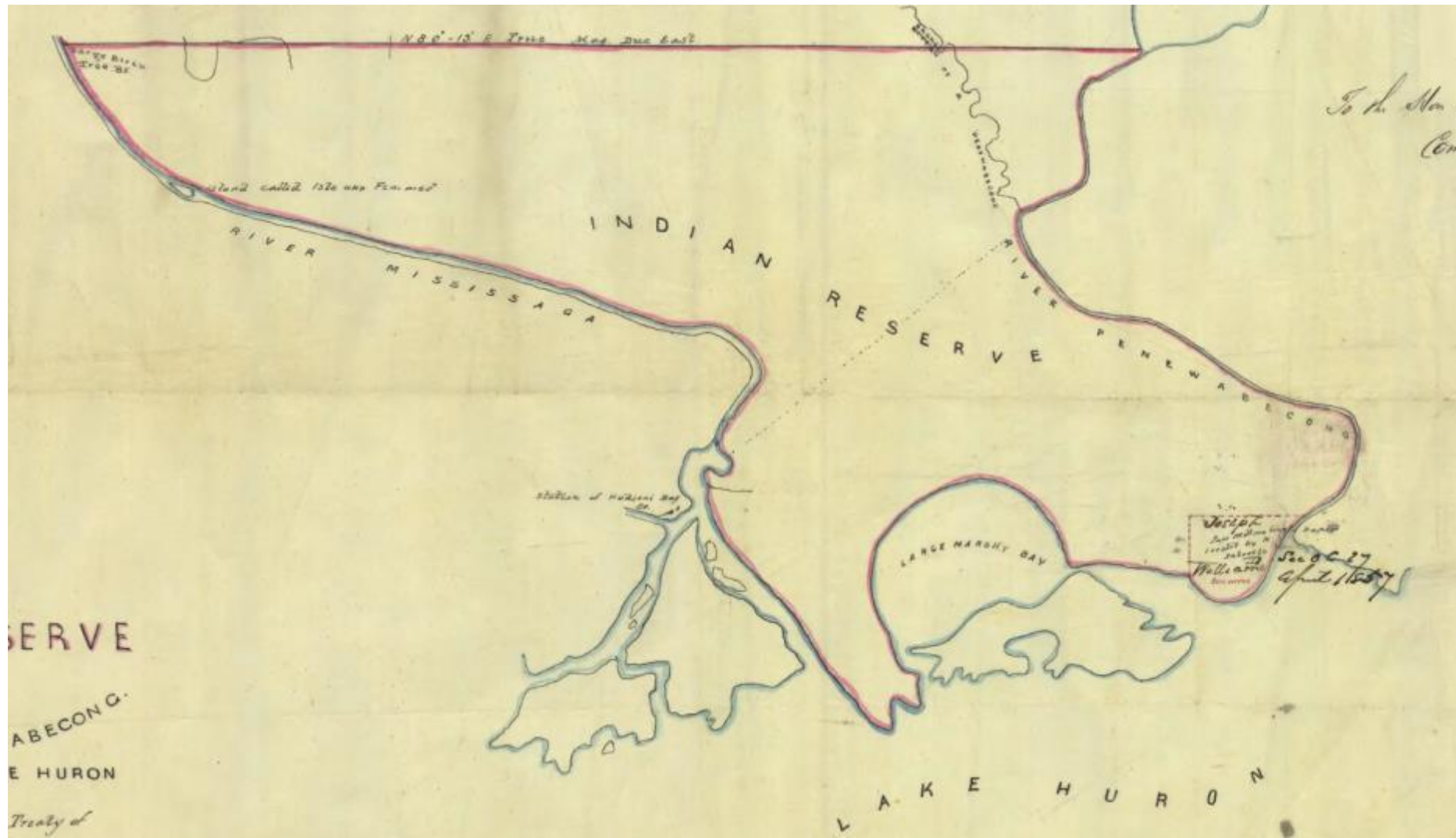
Secretary,

Department of Indian Affairs,

Ottawa, Ont.

## Case study 2: Mississagi IR 8

- 1850 Treaty reserved “the land contained between the River Mississaga and the River Penebewabecong, up to the first rapids.”
- Parcel was defined (i.e. bounded)
- Survey marks the bounds on ground & shows the bounds on plan

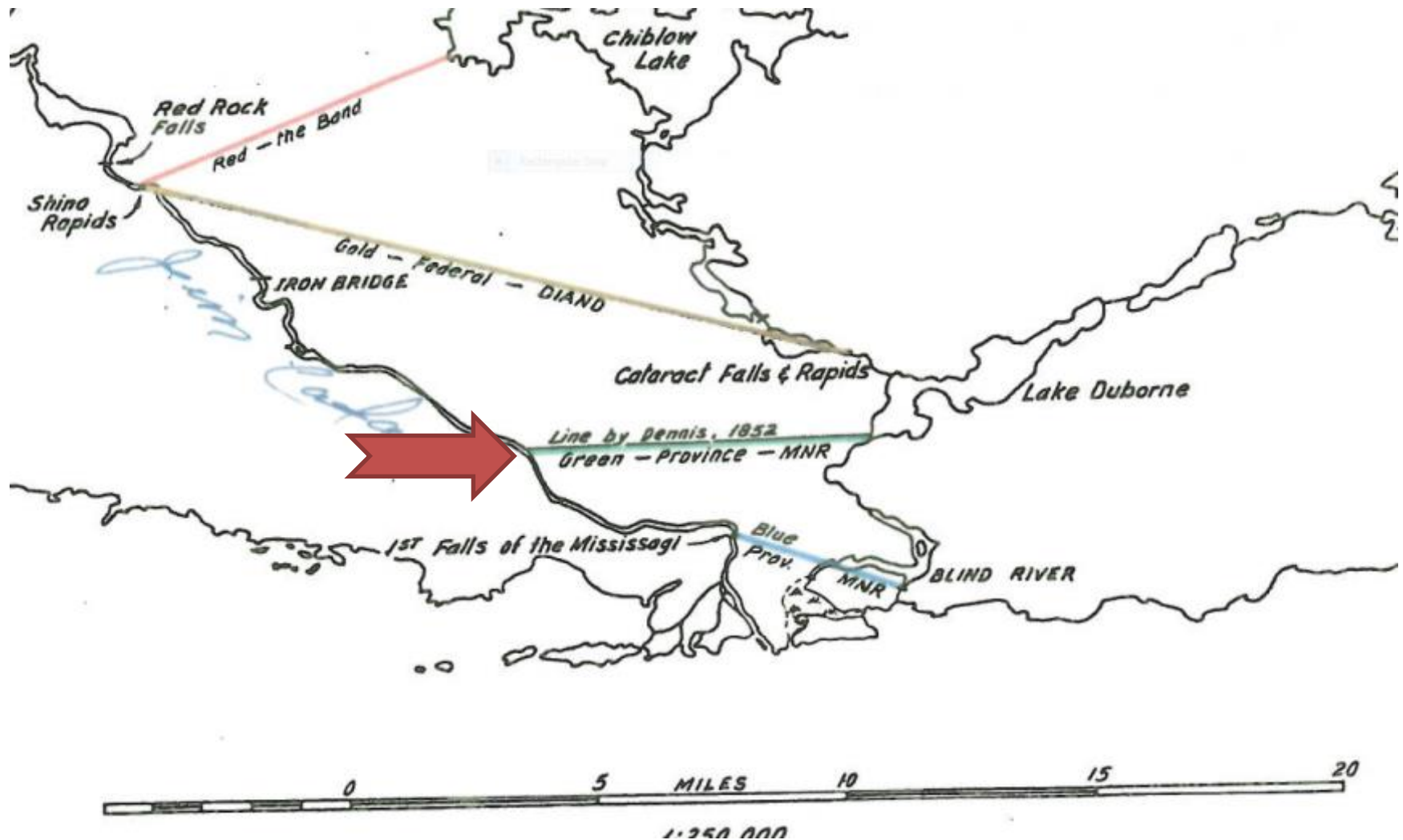


To the Hon.  
Com.

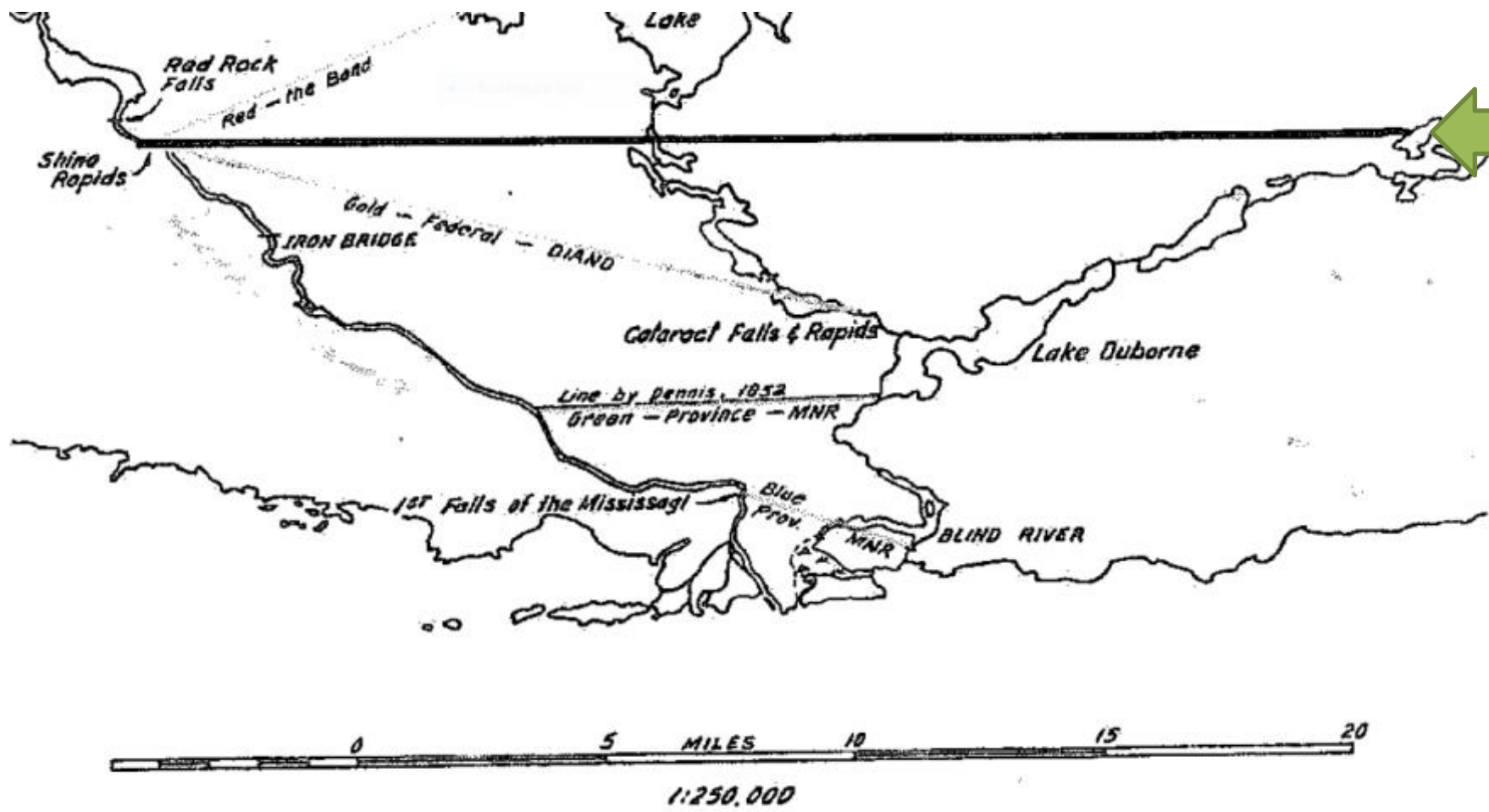
RESERVE  
ABECONG.  
LAKES HURON  
Treaty of

Sept  
27  
4/1/1857  
W. H. Wallis

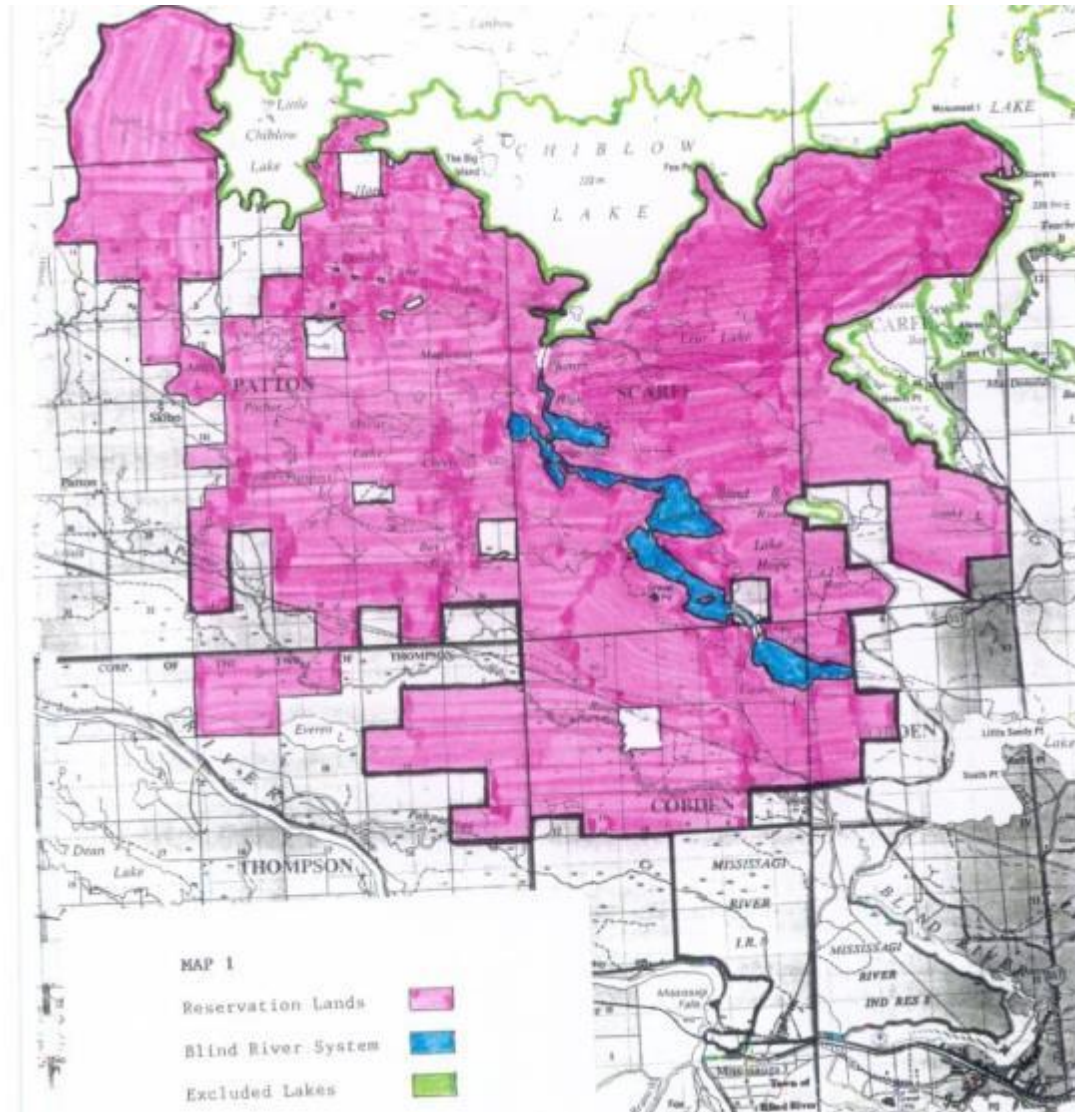
# Sadly, survey did not reflect definition



# OIC: 1994-1109 (Settlement) & 2010-426 (ATR)



# Addition-to-Reserve (ATR)



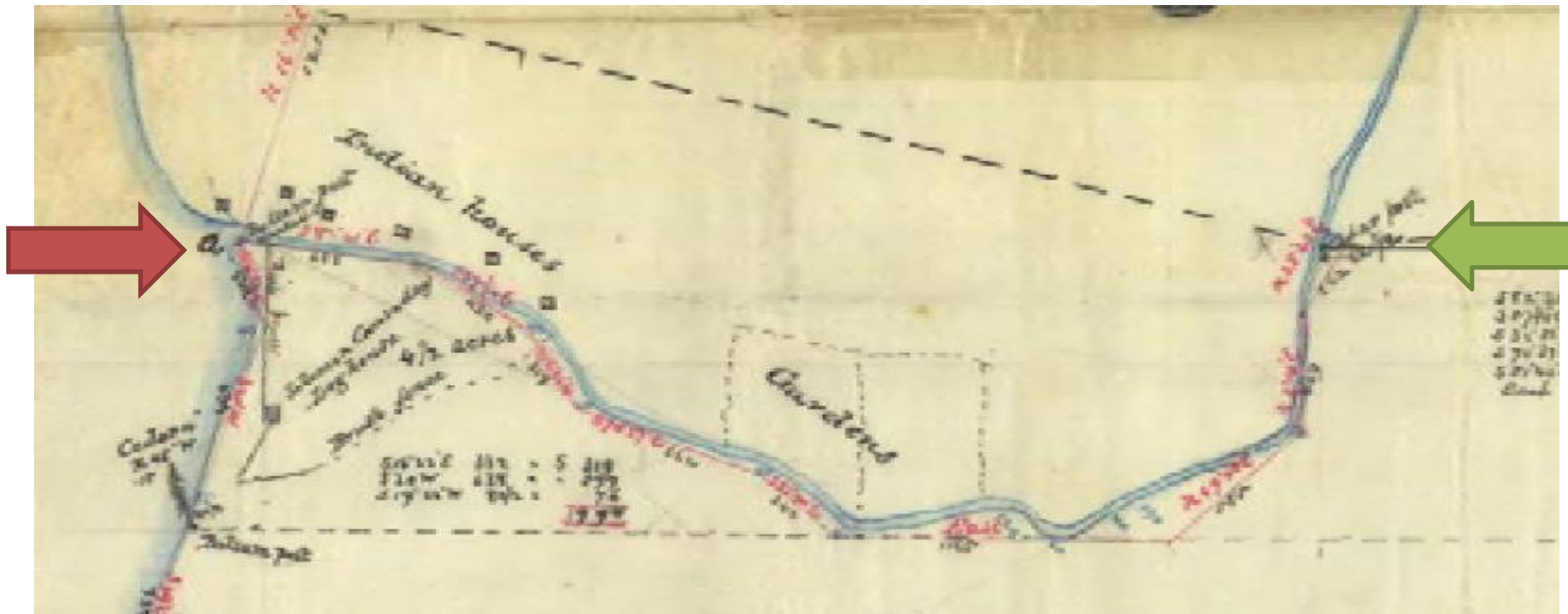


# Case study 3: Mississagi IR 8

- Parcel “lying south of a line drawn due east from the mouth of the Creek which empties into the Mississauga River on the left bank of the said river.”
- No ambiguity in definition: Mouth of creek was known; direction of line was clear.

# To be rectified

Intention to only surrender land used by squatters;  
not land occupied by FN houses, gardens, cemetery



# Case study 4: Goldstream IR 13

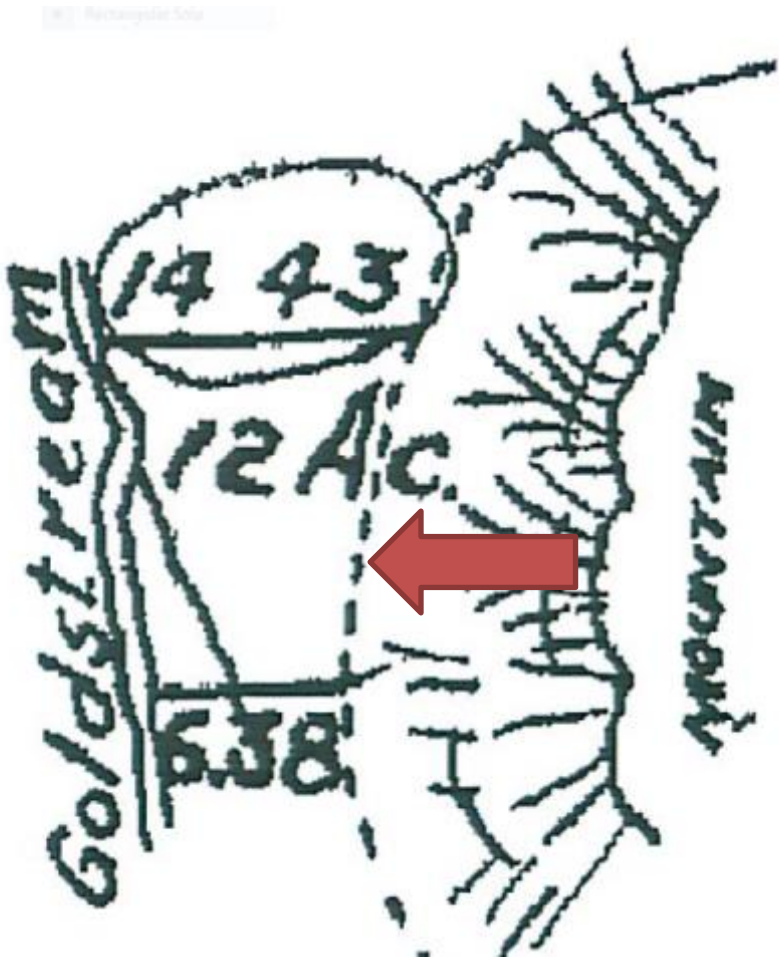
- 1877 Joint Reserve Commission reserved  
“from a point on the right bank of Goldstream [River] true east ... 15.00 thence true north 15.00 thence true west to shore, thence up the right bank of river to initial point.”
- Area = 23 ac
- East boundary = 15 ch east of river



Reserve



Sadly, survey did not reflect definition

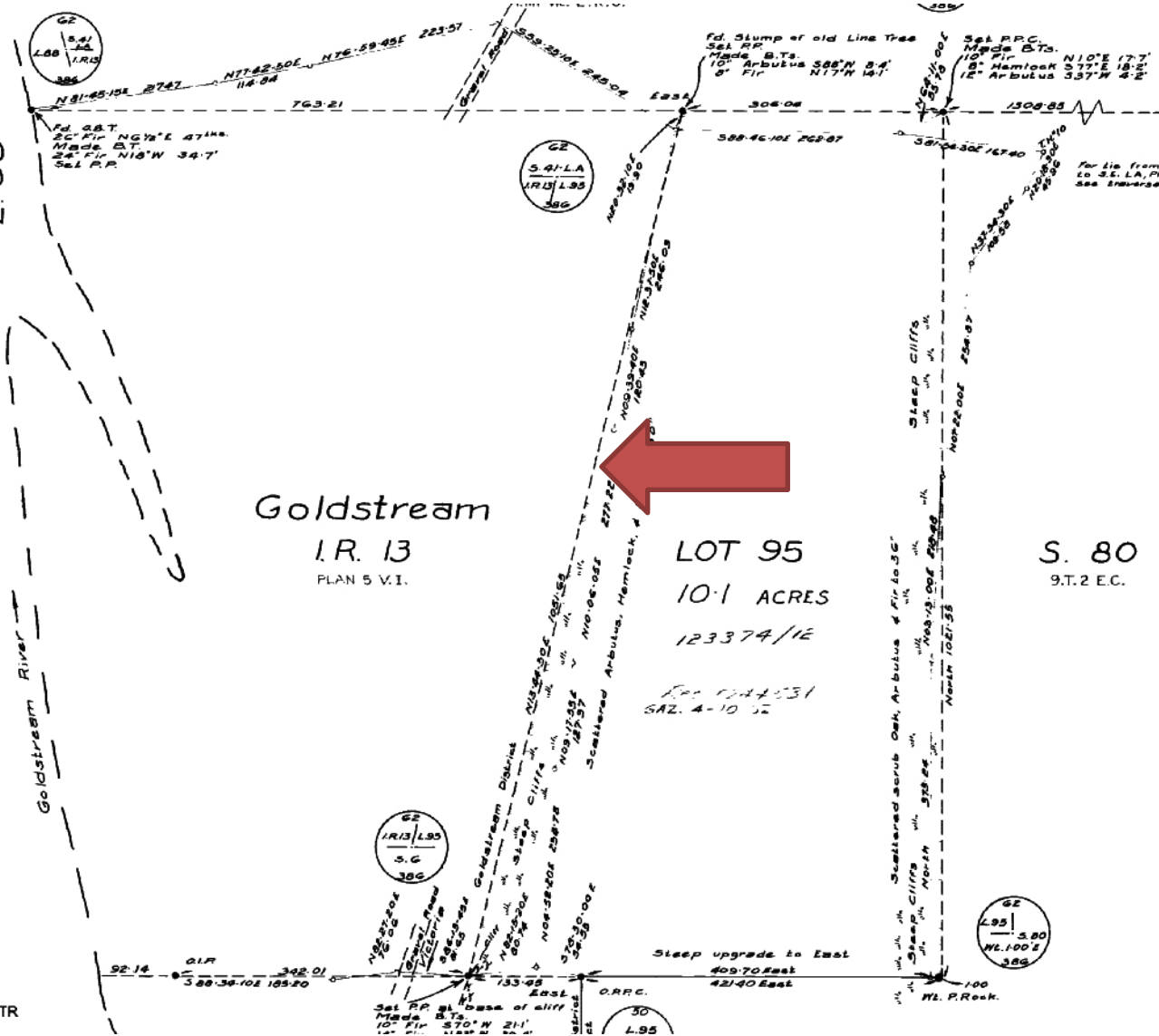


88  
IE CLSR

L. 2010  
Jate

ream IR 13 ATR

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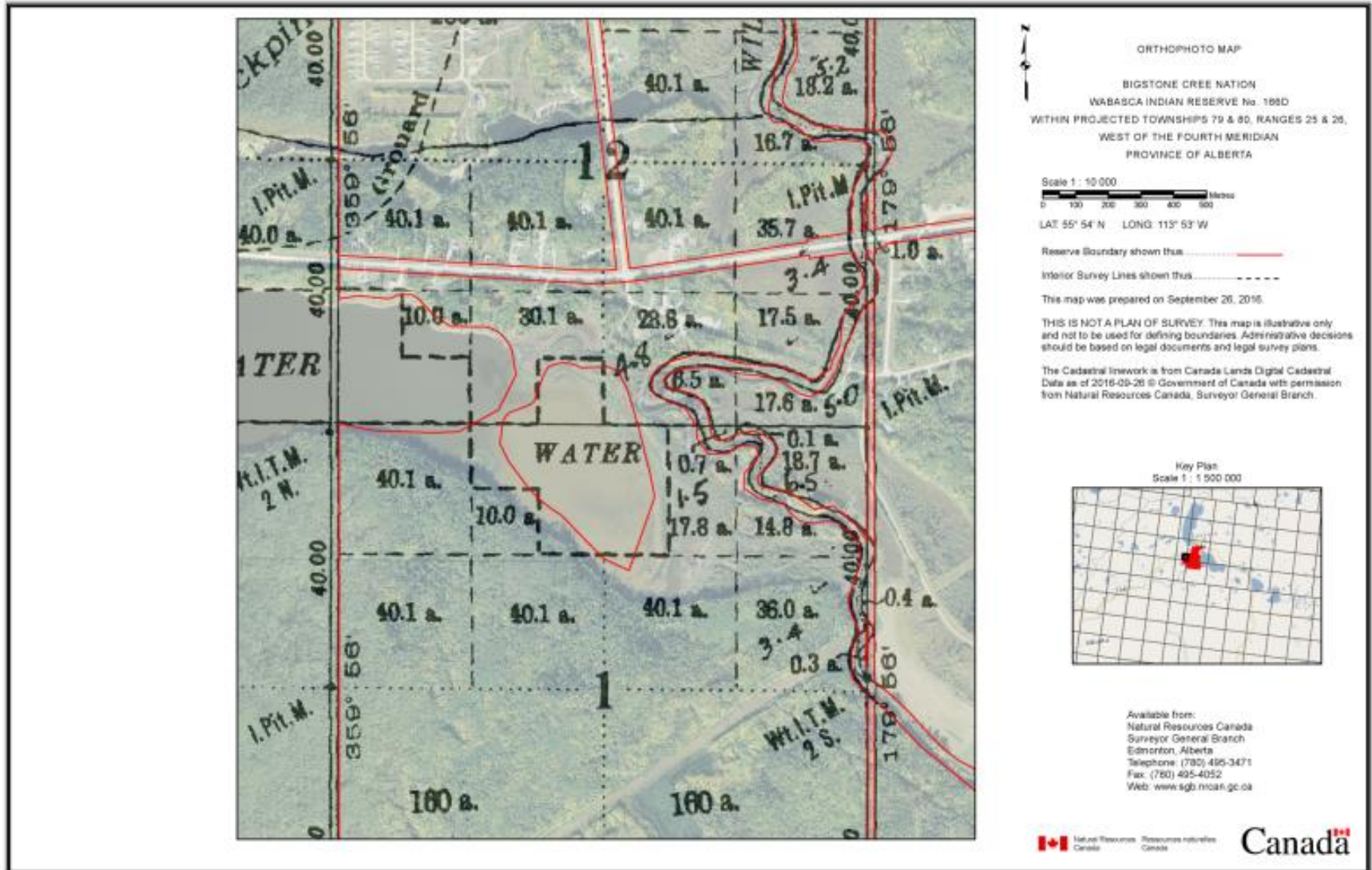
Goldstream

I.R. 13  
PLAN 5 V.I.

LOT 95  
10.1 ACRES  
123374/1E

S. 80  
9.2.2 E.C.

# Case study 5: Wabasca IR

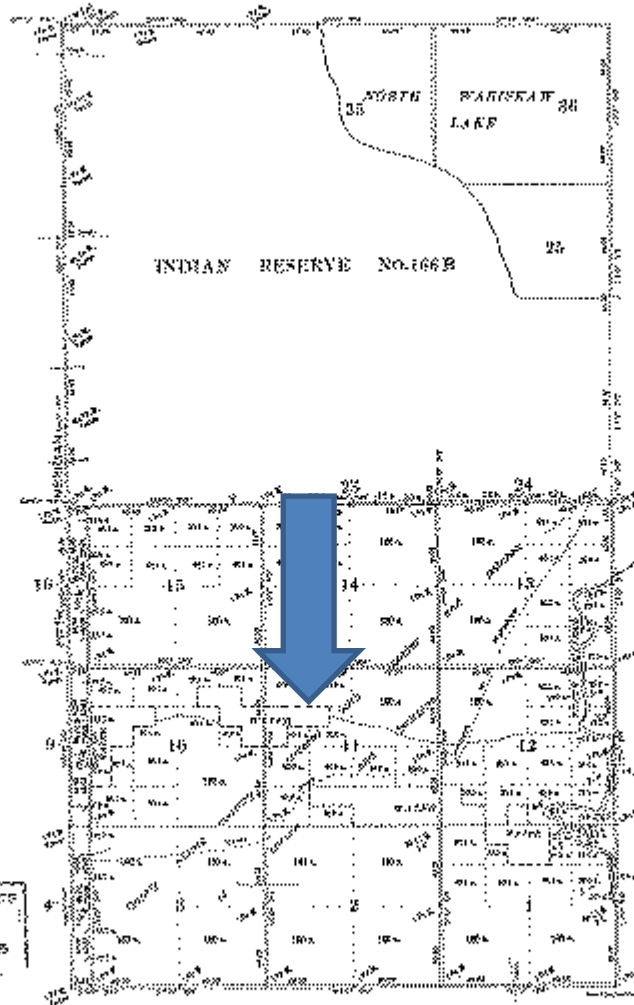


ALBERTA

Plan of Township 80, Range 26, West of the Fourth Meridian

STAT. SECTION

SCALE AS SHOWN TO THE WEST



CANADA LAND RECORDS OFFICE  
52283  
19 MAR 1965

Compiled from original surveys by

- J. H. Boyles, . . . . . 1878, . . . 1898, September, 1907
- E. P. Schuch, . . . . . 1878, . . . 1898 February, 1911
- H. C. Cameron, . . . . . 1878, . . . 1898 June, 1911

Department of the Interior, Ottawa, 13th July, 1919.

Approved and Directed,

*Chittle*  
Surveyor General.

NOTE: The subdivisions of quarter sections shown upon this plan are legal subdivisions and contain no legal force. The same are to be shown upon separate sections from the original subdivision through the center of the township. When the quarter sections are shown, they shall be shown only upon maps. The same shall be shown only upon maps. The same shall be shown only upon maps. The same shall be shown only upon maps.







THIS CERTIFICATE IS VALID ONLY IF THE INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT AS STATED AND IS SUBJECT TO THE PROVISIONS OF THE ACTS AND REGULATIONS IN FORCE AT THE DATE OF ISSUANCE.



Number of copies prepared ..... 2  
 Date of issue ..... FEB 19 1952  
 Office ..... 1300 - 4th St. S.E. - ALA  
 J. H. DODD  
 Registrar

# Duplicate Certificate of Title

Case or Parcel Number ..... Refer Book No. ....

North Alberta Land Registration District

This is to Certify that HER MAJESTY THE QUEEN

IN THE RIGHT OF CANADA AS REPRESENTED BY THE MINISTER OF CLIFFERSHIP  
 AND IMMIGRATION

is now the owner of an estate in fee simple  
 of and in



THE SOUTH HALF AND ALL THOSE PORTIONS OF THE NORTH HALF OF SECTION ONE (1) TOWNSHIP EIGHTY (80) RANGE TWENTY EIGHT (28) WEST OF THE FOURTH MERIDIAN IN THE PROVINCE OF ALBERTA DOMINION OF CANADA, NOT COVERED BY ANY WATER AND LYING ON BOTH SIDES OF THE WILLOW RIVER, AS SHOWN ON A PLAN OF NUMBER OF THE SAID TOWNSHIP SHOWN AT OTTAWA ON THE 17TH DAY OF JULY A.D. 1939, CONTAINING IN THE NORTH EAST QUARTER ONE HUNDRED AND TWENTY EIGHT AND NINE TENTHS (128.9) ACRES, IN THE NORTH WEST QUARTER ONE HUNDRED AND THIRTY AND THREE TENTHS (130.3) ACRES, IN THE SOUTHWEST THREE HUNDRED AND TWENTY (320) ACRES ALL MORE OR LESS.

THE LAND HEREBY DESCRIBED COMPREHENDING TOGETHER ONE HUNDRED AND SEVENTY NINE AND TWO TENTHS (179.2) ACRES MORE OR LESS, RESERVING UNTO HER MAJESTY ALL MINES AND MINERALS TOGETHER WITH FULL POWER TO WORK THE SAME.

subject to the annotations, liens and interests notified by memorandum underwritten or endorsed hereon, or which may hereafter be made in the register.

In Witness Whereof I have hereunto subscribed my name and affixed my official seal this ..... EIGHTEENTH ..... day of ..... FEBRUARY ..... A.D. 1952.

J. H. DODD Registrar  
 North Alberta Land Registration District  
 P.O. Address: C/S R.F. BATTLE, ESQ., 10167-100 ST. S., EDMONTON, ALTA.

OVER

7/5

Dept. of Citizenship & Immigration  
OTTAWA  
JUL 4 1958  
Deputy Minister's Office

P.C. 1958-931  
PRIVY COUNCIL  
CANADA

Dept. of Citizenship & Immigration  
OTTAWA  
JUL 4 1958  
MINISTER'S OFFICE



AT THE GOVERNMENT HOUSE AT OTTAWA

12:15-17

FRIDAY, the 4th Day of JULY, 1958

PRESENT:

HIS EXCELLENCY

HIS GOVERNOR GENERAL IN COUNCIL:

His Excellency the Governor General in Council, on the recommendation of the Minister of Citizenship and Immigration, pursuant to the Indian Act, is pleased hereby to set apart the lands hereinafter described for the use and benefit of the Webasca Band of Indians of the Province of Alberta, to be designated as Webasca Indian Reserve No. 166D:

Description

- (1) The whole of Sections 27, 28, 29, 32, 33 and Fractional Sections 30, 31 and 34 and part of the West half of Section 35; all in Township 79, Range 25, West of the 4th Meridian, and including the mineral rights underlying the waters of Willow River traversing said Sections 30 and 31.
- (2) The whole of Sections 4, 5, 8, 9, 16, 17, 21 and Fractional Sections 3, 6, 7, 10, 20, 28 and part of the Northwest quarter of Section 22 and part of the Southwest quarter of Section 27; all in Township 80, Range 25, West of the 4th Meridian, and including the mineral rights underlying the waters of Willow River traversing said Sections 6, 7 and 20.
- (3) The whole of Section 36-79-26 W4N.
- (4) Fractional Sections 1 and 12 in Township 80, Range 26, West of 4th Meridian, and including the mineral rights underlying the waters of Willow River traversing the said two sections.



The land herein described containing 14,432.7 acres.

Certified to be a true copy.

*[Handwritten Signature]*

Chief of the Privy Council

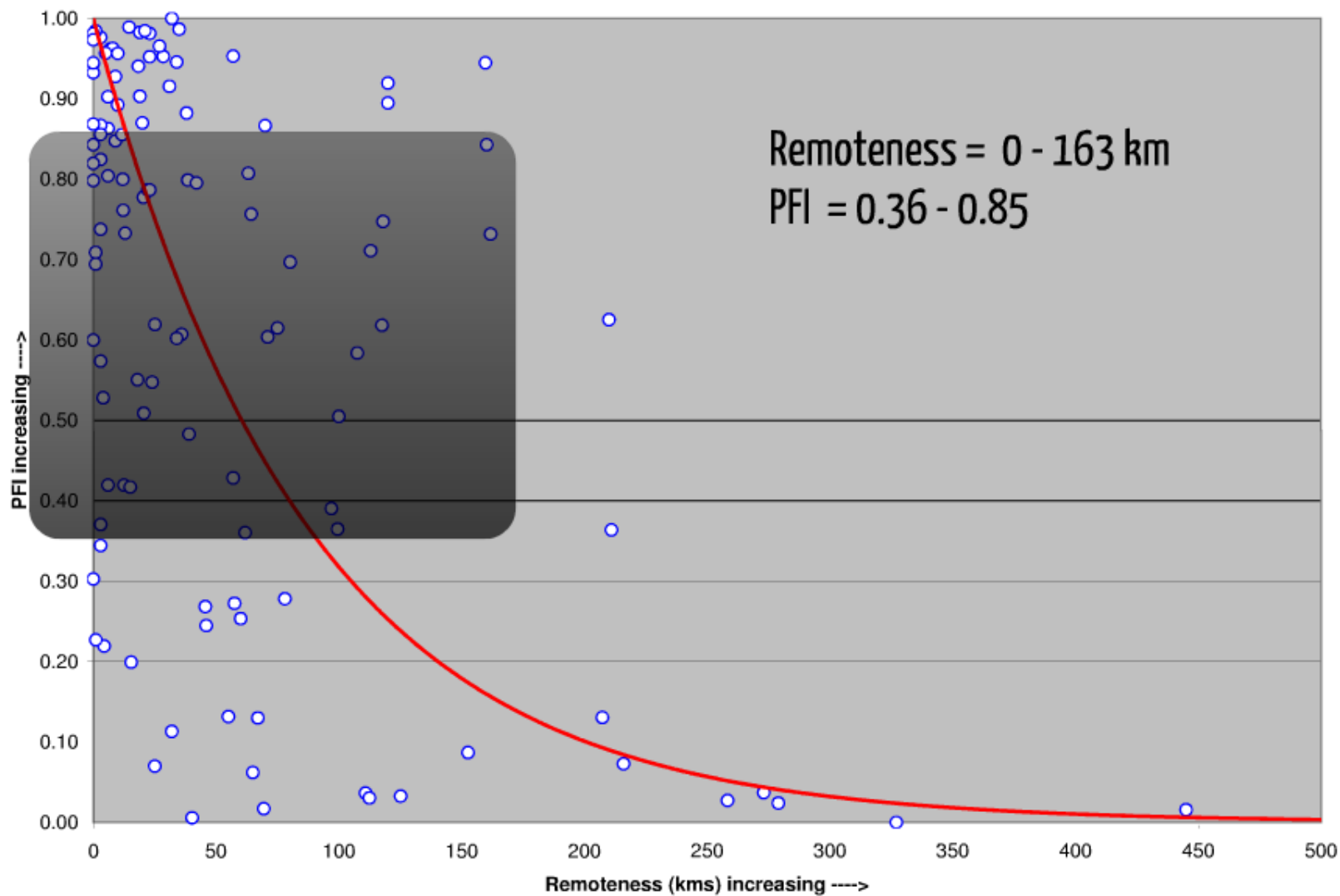
# Case study 6: Parcel Fabric

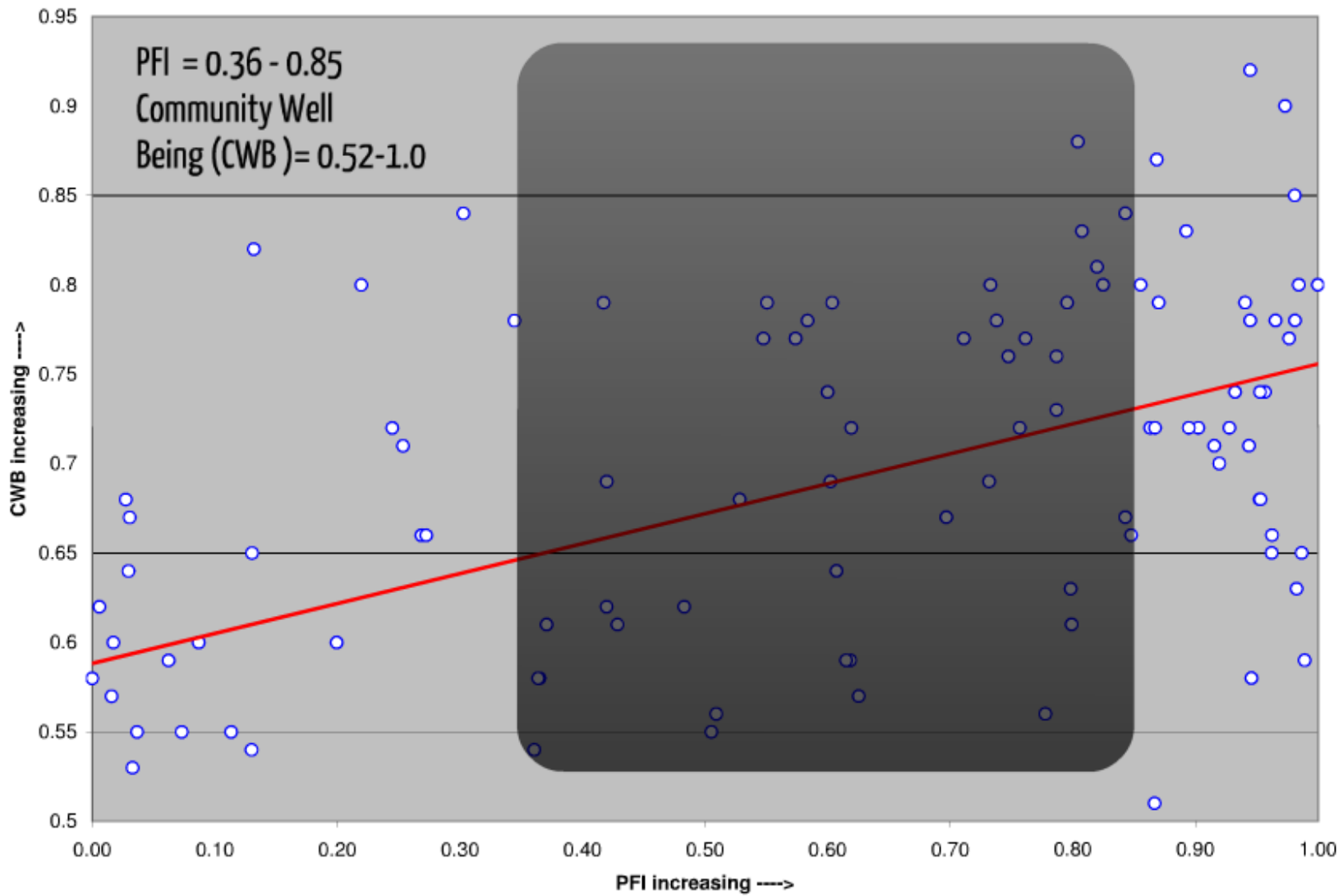
(as-surveyed vs as-built)



$$PFI = \frac{TNI + VP + \frac{1}{2} OGP - (IOB + INP + IUM)}{TNI + VP + \frac{1}{2} OGP}$$







# Good fabric

- Hurons Wendake 7A (QC)
  - Improvements (TNI) = 611
  - Vacant parcels (VP) = 25
  - Improvements on boundaries (IOB) = 12

$$PFI = \frac{611 + 25 + \frac{1}{2}(0) - (12 + 0 + 0)}{611 + 25 + \frac{1}{2}(0)}$$

$$PFI = 0.98$$

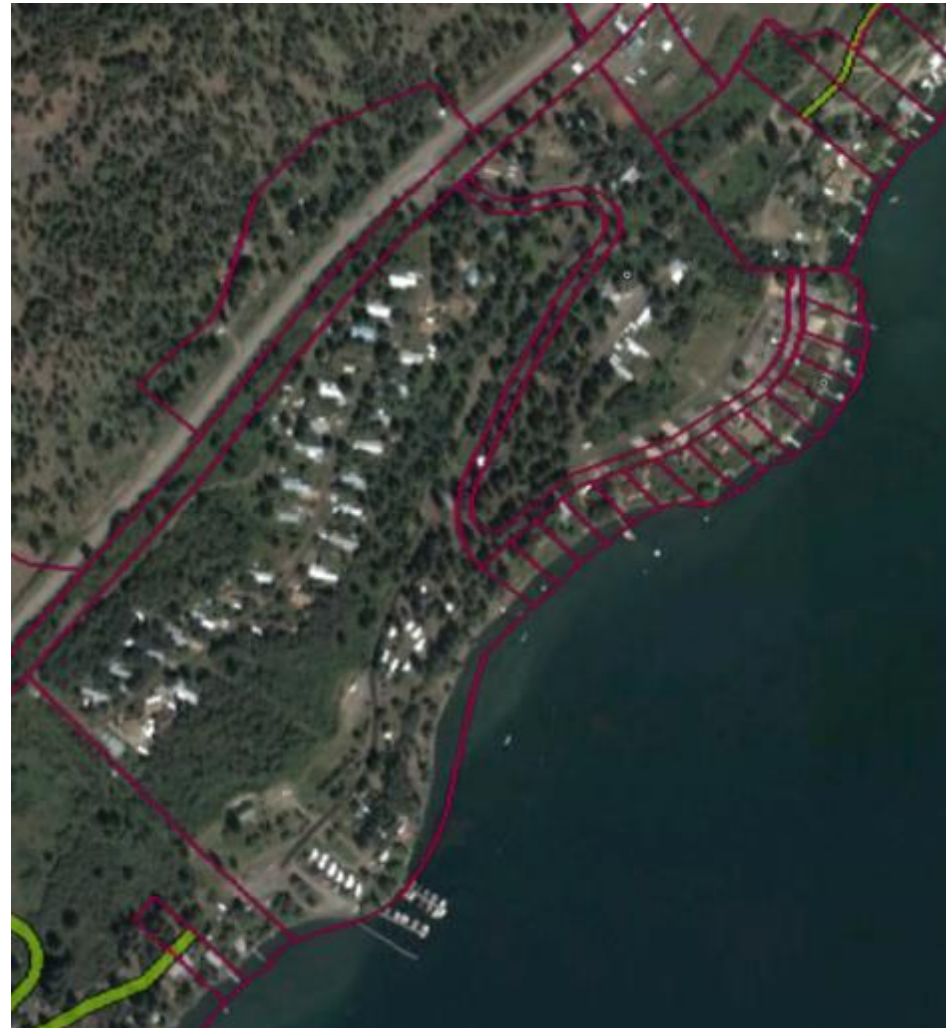


# Medium fabric

- Okanagan IR 1 (BC)
  - Improvements (TNI) = 2203
  - Vacant parcels (VP) = 56
  - Improvements on boundaries (IOB) = 41
  - Improvements with no parcels (INP) = 498

$$PFI = \frac{2203 + 56 + \frac{1}{2}(0) - (41 + 498 + 0)}{2203 + 56 + \frac{1}{2}(0)}$$

$$PFI = 0.76$$





# Uashat IR (Quebec)



- The First Nation had created many of its own parcels
- Informal survey (monuments & plans) of block corners



- Informal parcels integrated (some bounds shifted to accommodate occupation);
- Formal parcels surveyed

# Brokenhead FN (MB): Occupation



Mount Currie is running a sophisticated GIS with their own property mapping



# 4 Findings:

- Many coherent informal parcels (some mapped; many fenced; most bounded)
- Reconciling formal/informal parcels is at community discretion (social process = much negotiation)
- First Nations drive renewal =  $f(\text{political will, lands capacity, development pressure, planning tools})$
- Crown can reduce disconnect between ground (informal) & registry (formal).

# Case study 7 – Effects of informality



# In theory: Ricardo, Coase, Demsetz

- Formal land tenure:
  - Increases incentives to invest
  - Increases bargaining efficiency
  - Lowers transaction costs
  - Lowers costs of defense
  - Allows collateralization



## Indigenous Land Titles



First Nations  
Tax Commission  
Commission de la  
fiscalité des premières  
nations

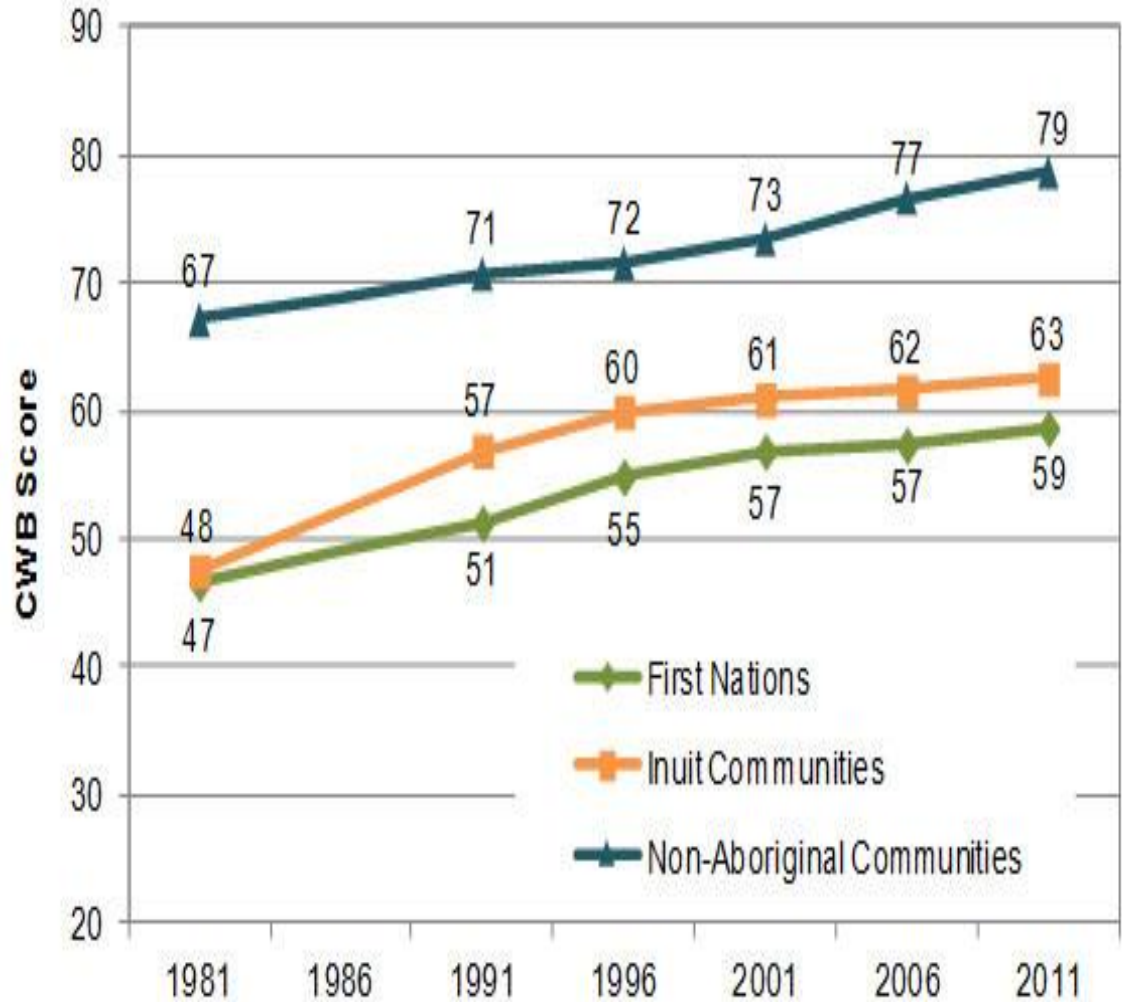
# In practice: Results of titling

- Peru:
  - increased labour force participation
- Argentina:
  - more infrastructure investment
  - reduced fertility rate
  - smaller household size
  - higher educational outcomes
- Collateralization?
- Reversion to informality?



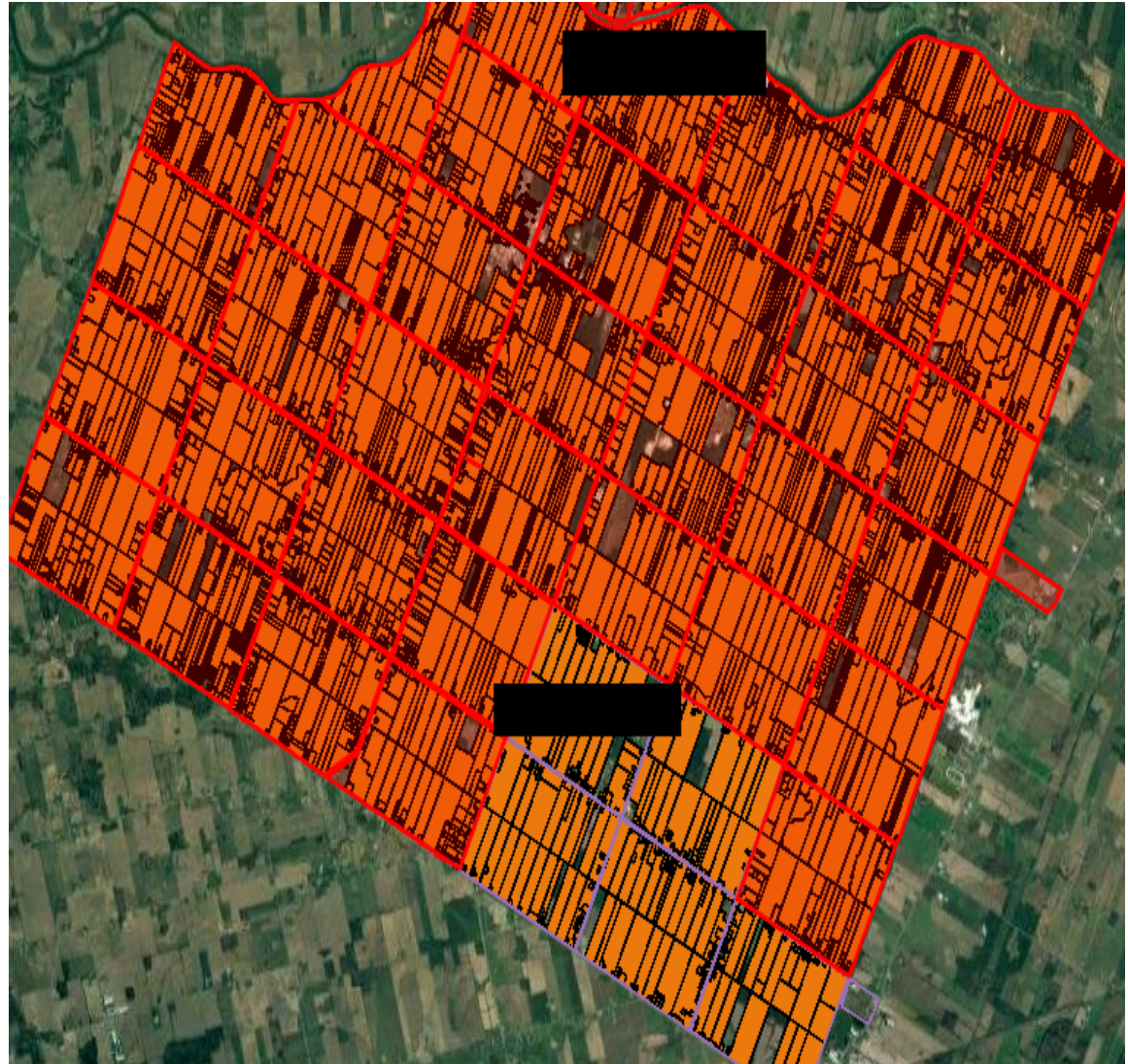
# Community Well-Being

- Components:
  - Income
  - Education
  - Labour Force Activity
  - Housing
- First Nations = heterogeneous



# Land tenure on FN Reserves

- Formal (INAC):  
Certificates of  
possession,  
leases
- Informal (not  
INAC):  
Quantum  
unmeasured

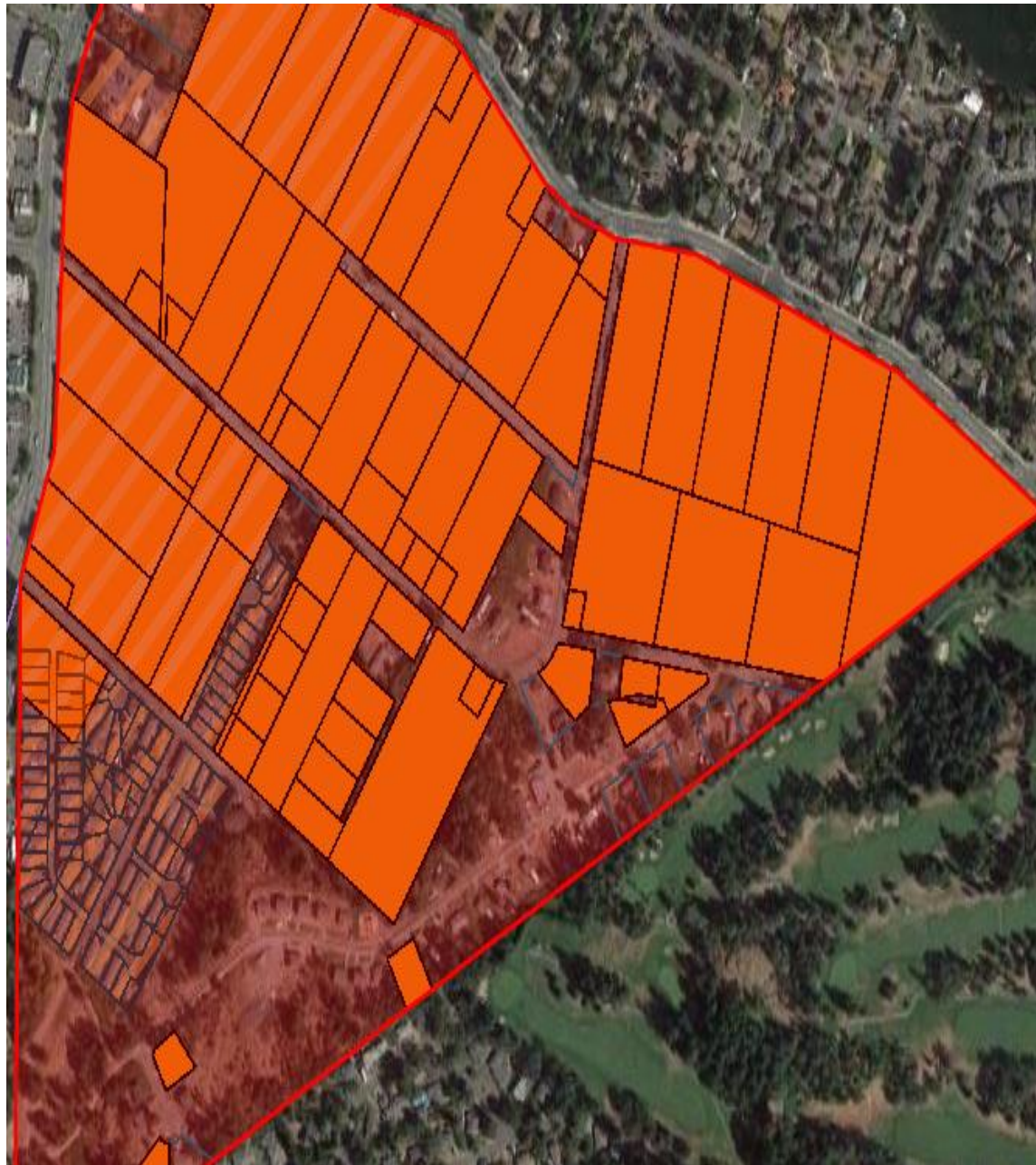


# Research question

- Does informality hinder socio-economic development (CWB) in British Columbia and Ontario?
  - 95 Reserves in BC and 74 in ON have CWB data
  - 34 Reserves in BC and 44 in ON have data for Income, LFA, Education, Housing

# Measuring informality

- Census: total dwellings = (formal + informal)
- Indian Lands Registry: formal
- Imagery: informal
- Informality ratio = (informal/total)



# Variables

## Dependent

- Community Well-Being

## Independent

- Informality
- Reserve population
- Reserve area
- Distance to service centre
- Distance to urban centre (pop. over 50,000)
- Global Non-Response rate (GNR)

# The model

- OLS:

$$CWB_i = \alpha + \beta \text{informality}_i + X_i' \theta + u_i$$

- Seemingly Unrelated Regression:

$$\text{Income}_i = \alpha + \beta \text{informality}_i + X_i' \theta + u_i$$

$$\text{Education}_i = \alpha + \beta \text{informality}_i + X_i' \theta + u_i$$

$$\text{Housing}_i = \alpha + \beta \text{informality}_i + X_i' \theta + u_i$$

$$\text{LFA}_i = \alpha + \beta \text{informality}_i + X_i' \theta + u_i$$

# Summary stats

- Overall: total housing count = 23,614
- Informal = 55.1%
  - 56% in Ontario (with 11,917 houses *in toto*)
  - 55% in BC (with 11,697 houses *in toto*)

# Summary stats: 95 IR in BC & 74 in ON\*

	Average	Max	Min
<b>CWB</b>	61, 63*	82, 75*	45, 38*
<b>Population</b>	337, 448*	2604, 2592*	70, 68*
<b>GNR</b>	0.20, 0.19*	0.50, 0.48*	0.02, 0.01*
<b>Area (ha)</b>	1246, 5222*	13283, 42614*	10, 13.4*
<b>S Centre (km)</b>	149, 161*	691, 600*	1, 7.4*
<b>City (km)</b>	273, 262*	886, 600*	1, 7.4*
<b>% informal</b>	75, 72*	100, 100*	2.55, 5*



# Summary stats: 34 IR in BC & 44 in ON\*

	Average	Max	Min
CWB	61, 62*	82, 75*	45, 45*
Income	62, 61*	94, 78*	45, 42*
Education	40, 38*	60, 55*	22, 12*
Housing	76, 75*	96, 94*	53, 47*
LF Activity	67, 73*	81, 87*	47, 56*
Population	662, 662*	2604, 2592*	259, 260*
GNR	0.24, 0.20*	0.50, 0.48*	0.05, 0.07*
Area (ha)	1805, 6797*	13283, 42614*	13, 13
S Centre (km)	163, 180*	691, 600*	1, 7.4*
City (km)	278, 258*	818, 600*	1, 7.4*
% Informal	66, 64*	100, 100*	2.55, 5*

# Results (p1)

- Informal housing significantly reduces CWB!
- 10% increase of informality decreases CWB by:
  - 0.90 points in British Columbia
  - 0.83 points in Ontario
- Thought experiment for an IR in BC:
  - At time 1, 100% informal
  - At time 2, 100% formal
  - Change in CWB = 9 points!

# Results (p2): Components of CWB

## British Columbia

- Significant at 0.05 level:
  - Income
  - LFA
  - Housing
- Significant at 0.07 level:
  - Education

## Ontario

- Significant at 0.05 level:
  - Income
  - Education
  - LFA
- Significant at 0.16 level:
  - Housing

# Part 4: Conclusion

Indigenous peoples have long used parcels and bounds:

“First Nations people have always had an acute sense of where we are in the world. We navigated throughout our territories guided by our stories, landmarks, waters and the heavens. Present-day mapping geospatial tools will help guide us in the future as adaptability has always been our strongest asset.”

– Graeme Sandy, National Aboriginal Lands Managers Association

# Reconciling Canadians with the land

- Survey partnerships with FN (e.g. Wikwemikong FN)
- Applied land management skills (e.g. Tulo Centre)
- Third-party fact-finding (e.g. Mississauga FN)
- Mediation between Crowns (e.g. Nanoose FN)
- Boundary Tribunal for Aboriginal title (e.g. Tsilhqot'in)
- Parcel fabric renewal (e.g. Uashat FN)
- Specific Claims Tribunal (e.g. Kitselas FN)
- ILR modernization
- Post-modern land titles registry (e.g. ILTI)



Rectangular Snip

# Tulo Centre of Indigenous Economics

Proposal: Building First Nation Lands  
Management Capacity – *Certificate in  
First Nation Applied Lands Management*  
March 2017

# Honour of the Crown

- Relationship founded on good faith, trust, cooperation, openness, fairness, consultation and reasonableness

*(Roger Earl of Rutland's case, 1608)*

- Rooted in persuading Indigenous peoples that their rights were best protected by the Crown

*(Haida Nation v BC, 2004)*