Witsuwit’en perspectives on climate change in the Bulkley R. area (British Columbia)

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Widzin Kwah (Bulkley R.), looking upstream (south) at Telkwa BC
Project description

- 3-year project on "Athabaskan Personal Histories of Climate Change in Alaska and Canada" (NSF DEL-0651853)
  - Deg Xinag (Alaska)
  - Tsek’ene (B.C.)
  - Witsuwit’en (B.C.)

- Currently starting year 2

- Progress report on Witsuwit’en part of project
  - Methods
  - Results to date
  - Next steps
Witsuwit’en

- One dialect of Babine-Witsuwit’en language
- 2002 census: about 180 speakers of Witsuwit’en dialect
- Youngest speakers aged late 50s
Babine-Witsuwit’en communities

Witsuwit’en dialect

Bulkley R., a tributary of the Skeena R.

http://en.wikipedia.org/wiki/Bulkley_Valley
Bulkley Valley
effect of mountain pine beetles
Why is British Columbia in the midst of a mountain pine beetle epidemic?

- A FAQ on B.C. Ministry of Forests and Range website
- Answer
  - Forests of mature lodgepole pine are prime habitat for the mountain pine beetle. The beetle also thrives under warm weather conditions. The interior of British Columbia has an abundance of mature lodgepole pine, and has experienced several consecutive mild winters and drought-like summers. Beetle populations in many parts of interior B.C. have increased to epidemic levels as a result.

[http://www.for.gov.bc.ca/hfp/mountain_pine_beetle/faq.htm #2]
Smithers

- Largest town in area
- Airport with 2x-3x daily flights from Vancouver
- Population about 6000
  - http://www.tourismsmithers.com/html/about.htm#stats
- (Movie *Eight Below* was filmed on Hudson Bay Mt.)
Hudson Bay Mt. from the NE
Note the (receding) glacier.
Project methods

Near Houston, looking south
The Office of the Wet’suwet’en was created as a central office for the Wet’suwet’en Nation. The Office offers many services throughout the Nation focusing on the main areas of Lands and Resources (including Fisheries), Human and Social Services and Treaty Negotiations.

Meeting with Office of the Wet’suwet’en staff

- Prior to Witsuwit’en narrative recordings
- Staff recommended by Vi Gellenbeck, Kyah Wiget Education Society
  - David De Wit, Natural Resources Manager
  - Stefan Schug, Biologist
- Explained purpose of project
- Archiving plan
- Advice on questions to ask
Biologist Schug

- Suggested some very specific questions; e.g.
  - any observed changes to moose ticks?
  - any observed differences about when cottonwood leaves come out?

- Warnings
  - People who know the language may have stopped going out into the bush for subsistence, therefore possibly lack firsthand knowledge of current conditions.
  - How to separate effects of climate change from other effects, such as resource depletion due to overharvesting of timber?
Interviews

- “Semi-structured” interviews
- Native speaker interviewers
  - Lillian Morris
  - Violet Gellenbeck

Wit questions about climate change_rev.doc
Speakers interviewed so far

- Terrace
  - Lucy Verigin
- New Hazelton
  - Alfred Joseph
  - Margaret Austin
- Moricetown
  - Henry Alfred
  - Sue Alfred
  - Sam Wilson
  - Stanley Morris
  - Katherine Arsenault
  - Roy Morris
  - Steven Tommy
  - Lucy Namox
  - Clarence Dennis
  - Alex Dennis
  - Bill Mitchell
- Smithers
  - Mabel Forsythe
  - Christine Buchholz
- Houston
  - Russell Tiljoe
Interviews

- So far
  - 16 hours, 36 mins. of interviews
  - 17 speakers interviewed (all but 2 by Lillian Morris)
  - 4.5 speakers transcribed and translated
  - (How to speed up the process? Currently
    - Bilingual speaker translates sentences
    - Sharon transcribes, translates word by word
    - Review of “problematic” passages)
Working on transcripts
Results to date

Telkwa range, viewed from hill from SE of Smithers
Witsuwit’en views on climate change

- Based on transcribed and translated interviews from
  - Dan Michell
  - Roy Morris
  - Mabel Forsythe
  - Lucy Namox
Some of the environmental changes mentioned

- Winters are not as cold now as previously
- Salmon runs are declining
- Eel runs are non-existent now
- Certain migratory birds (swans, cranes) are declining
- Moose are very scarce
Some comments about winter

- Dan Michell
  (interviewed by Lillian Morris November 2007)
'Ey k'ay hozk'its disni nde' Mosquito Flat nyen sbep i'in fall camp hozdlì'.
'My late father had a fall camp across from Mosquito Flat.'

Tin ditiyh car bī hiyk'it lhē' nikwiz.
'When the ice would freeze they would go across by car.'

Tin tabī ditay lhēkh.
'The ice got really thick.'
LM:  
Lhë' nenditin?  
'It froze across?'

DM:  Mi' 
    yes

LM:  
'Iwhde' nts'ëwh yis k'it?  
'What year back then?'

DM:  uh,  
1947 'iwhiyegh de' 'awetsic so' tin wilhëkh.  
'Around 1947 the ice was still very [solid].'
LM:
K'ay so' hots'in'a 'et 'iwewist'ën' hozlï'.
'Now it doesn't get like that.'

DM:
K'ay 'awet 3 years yi'ey ice fishing winï
tent hist'iy bi'iwesdzin.
'The last three years I haven't used a tent when ice fishing.'

(laughs)
Lucy Namox
(interviewed by Lillian Morris November 2007)
LM:
Dik nînyikh de', so' c'ik'enis hozk'its?
‘When you were growing up, how cold was it?’

LN:  60 below
'Et hok'as so' mbï 'ats niwesye', c'ide’.
‘When it got that cold no one went outside a long time ago.’

LM:
'Iwhde' nts'ëwh yis k'it?
‘What year was that?’

LN:  I think around 1940. That's cold.

'Et ts'i k'enisit hozk'its.
‘It was very cold.’
At 60 below the trees and ground would crackle loud.

We had to stay in the house. We were not allowed to go out.

The cold spell would last two days to one week.

Everyone stayed home, no one went outside.
LM:
K'ay diwh widïzilh 'et mbe deondzin? Wighulïts 'oondzin?
‘How does this time of the year seem to you? Is it different?’

LN:
K'ay diwh widïzilh so'ggec.
‘Now it’s not like that.’

Tabï ulïts'in'a niwhëwdïzilh hozli'.
‘Everything is different from way back then.’

'Et wik'ininïiniclhdzit.
‘I am keeping track of that.’
LM:
Nts'ëwh tsëh nekic, 'awedïwh lic ulït dik'is weuslït?
‘When the snow first fell did it melt right away or not?’

LN:
C'ide', newilhtiych 'et start wilhëkh, netakilh witsëh,
‘A long time ago, the rain came first, before it snowed.’

November... 5th 'iwhiyegh lic 'iwit'iyh, yin hitin.
‘On November 5th the ground would freeze.’
15 'iwhiyegh 'et, 'et 'awet noonïkic c'ide', November 15.
‘November 15 it started to snow back then.’

Yin ts'iyewh hitin wik'ëtl'ats 'et k'idze noonïkic.
‘After the ground froze then it started to snow.’

Tl'a 'et 'awet ulïts'i 'it'iyh so' newewisdlït so’.
‘The snow would stay for good. It did not melt.’
K'ay 'iwit'iw nekic tl'a kwa newilhtiyh.
‘Now it snows and it rains again.’

‘Indziwh yis welew nedlekh.
‘The snow just disappears.’

K'ay dzïn 'et ulïts'in'a widïzilh.
‘Now it's different.’
Roy Morris

(interviewed by Lillian Morris November 2007)

LM: Roy---

RM: K'ay net 'awet net wi'izë wi'ats kwile' yis k'it 'et 'iwhiyegh winiclh'ën 'et 'awet change hooninli'.

'I have looked at this for twenty-five years and it's starting to change.'
"Ey dicin tah nî'ts'ît'ën' winiclh'ën.
'I looked at things when we worked out in the bush.‘

K'ay kwa 'iwit'ah newilhtiyh,
November month.
'Now it is raining in November.'

October 'akw'is to niwhënghen.
'We just about got drowned in October.’
Mabel Forsythe

(interviewed by Sharon Hargus, November 2007)
Tabi de' hozk'its. Khït, ‘awet November 1st 'iwhiyiw 'et 'awet hok'is.
‘It used to be very cold a long time ago. Around November 1st it used to be very cold.’

'Et 'awet cin tah 'it'ën so' hibibe bighewewilne'.
‘The work in the bush was easy during the cold spell.’

Yizlhiy bi'aat'ah ties, tie hiyditëlhgguh.
‘My brothers used a team of horses to haul the ties.’

...
SH:
*Tl’a deoldzikh 50 below 'indzin?* ‘And how long did it stay 50 below?’

MF:
*C'olilh wits'in wilikhtah zeh newnídzih dzusliyez.* ‘Sometimes towards spring time the weather would get a little warmer.’

*Tl'a tabi c'olilh March 'iwhiyiw 'et weh 'awetsic hozk'its.* ‘Around March back then it was still cold.’

*K'ay, k'ay diwhiyiw tah ulîts'in'a ggec 'oondzin.* ‘Now it is altogether different around here.’

*K'ay *'oondzin* middle of November *'awetsic newilhtiyh tl'ëde' lats.* ‘Now last night it was raining outside in the middle of November.’

(laughs)
Are the winters really getting warmer?

- Environment Canada
  - Downloadable monthly weather data for Smithers (or Telkwa)
  - Last 85 years, 2008-1923
  - http://www.climate.weatheroffice.ec.gc.ca/climateData/canada_e.html
The short answer

- For data available 1922-2008
- Smithers airport weather station
- September-February
  - no significant changes in average monthly temperature
- March-August
  - average monthly temperature is significantly warmer
- November-February have most variable average monthly temperature
Mean Jan temp, 1923-2008

Celsius

year

not significant

not statistically significant
Mean Mar temp, 1923-2008

F[1,84] = 5.384, p = .0227
Mean Apr temp, 1923-2008

Celsius

year

F[1,84] = 11.200, p = .0012
Mean May temp, 1923-2008

Celsius

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F[1,84] = 9.089, p = .0034
Mean Jun temp, 1923-2007

F[1, 83] = 9.325, p = .0030
Mean Jul temp, 1923-2007

\[ F[1, 83] = 18.735, \ p < .0001 \]
Mean Aug temp, 1923-2007

F[1,83] = 11.691, p = .0010
Mean Sep temp, 1923-2007

Celsius

not significant
Mean Oct temp, 1923-2007

not significant
Mean Nov temp, 1923-2007

Celsius

year

not significant
Mean Dec temp, 1923-2007

Celsius

year

not significant
Next steps for this project

- Continue transcribing and translating
- Record more speakers
- Follow up interviews with recorded speakers
- Possibly distribute collection of transcripts locally to speakers
- More detailed examination of Smithers-Telkwa weather data (daily rather than monthly) to continue to try to corroborate speakers’ impressions of winter warming
Misiyah

Moricetown canyon
Thanks to

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