Tundra Science and Culture Camp

July 28 – August 6, 2012

Daring Lake, Northwest Territories

ANNUAL REPORT

Northwest Territories Environment and Natural Resources

Background

Daring Lake and the Tundra Ecosystem Research Station (TERS) are located 300km north of Yellowknife, in the Southern Arctic Ecozone, and 50 km northeast of the tree line. The Station was established in 1994 by the Department of Environment and Natural Resources (ENR) as a multi-purpose facility whose primary goal is to facilitate long-term research and monitoring of the tundra ecosystem.

The Station also supports conservation education programs including ENR's Tundra Science and Culture Camp (TSCC). Initiated in 1995, the TSCC provides students with an interdisciplinary exposure to arctic ecology, natural history, human history and Dene traditional knowledge. Participants work closely with scientists, environmental educators, university researchers and Dene elders. The focus is on learning about the land from both scientific and Dene perspectives in a cross-cultural setting.

Students learn about wildlife ecology, ornithology, plant ecology, aquatic ecology, geology, archaeology and human history. They get hands-on experience with field techniques in these disciplines. Dene Elders teach traditional skills, cultural practices and their ways of knowing the land.

In addition to classroom and field sessions, time is provided for students to conduct their own small-scale research project in an area of special interest. Participants also learn about decision-making, resource management and development issues in this diamond mining region of the Northwest Territories.

There are opportunities for recreational activities such as swimming, fishing, wildlife viewing, photography, storytelling, games, crafts, art, music and simply spending time with friends both old and new!

Processes

A maximum of 16 students are selected annually from NWT high schools. Numbers are limited by the capacity of the facility and seats on the floatplanes. Preference is given to students who have completed Science 10 or equivalent so they have a general understanding of scientific concepts prior to camp. Up to three teachers from participating school boards are also given the opportunity to attend and maintain a legacy of the camp in the school system.

Student application forms are distributed to high schools in early April. Forms are submitted to the school and the school recommends applicants to the program coordinators by mid-May. Accepted participants are notified by early June and more program information is provided then.

The camp is heavily subsidized by grants, contributions and in-kind support from the GNWT Departments of Environment and Natural Resources (ENR), Education, Culture and Employment (ECE) and Industry, Tourism and Investment (ITI) along with Aboriginal and Northern Development Canada (AANDC) and participating school boards.

To cover a portion of the costs of return air transportation from Yellowknife to Daring Lake, meals, and accommodation at the Research Station, each participant is required to pay a registration fee. In 2012, the cost to each participant was $300, a $50.00 increase from the previous year's fee. The increase recognized rising fuel and supply prices, and the fact it was the first increase since the camp's inception. Student fees cover roughly 10% of the direct costs of running the camp.

Fees are paid in a variety of ways. Some parents provide funds while some students fundraise. In the past, the Tłı̨chǫ Community Services Agency (TCSA) has covered the cost for participating Tłı̨chǫ students including covering travel to Yellowknife if required. This generous tradition continued in 2012 with four Tłı̨chǫ students sponsored by the TCSA. Also in 2012, we waived one student's registration because of the circumstances surrounding the short notice received.

Camp Promotion

Due to low teacher applications in 2011, more intensive efforts were made to promote to teachers in 2012. Posters (Appendix A) were created and distributed to a variety of sources including several not tapped into in previous years.

- Traditional: Learnnet (NWT Teachers distribution list)
- Traditional: Employment, Education and Culture (Steve Daniel)
- New: Northwest Territories Teachers Association (Colleen Eckert)
- New: Aurora College (Evening instructors [Karen Horne])
- New: Aurora College (School of Education [Dave Porter])

Traditionally, Public Education Specialists travel to schools in Yellowknife and Behchoko to present to students. This year, four previous Science Camp attendees assisted with school presentations:

- Chief Jimmy Bruneau (Behchoko) - Kelvin Kotchilea, Behchoko ENR officer
- Sir John Franklin (Yellowknife) – students, Emily Smith and Hannah Clarke
- St. Patrick's (Yellowknife) – student, Matty Skinner

Electronic and hardcopy posters are also circulated throughout the territory via ECE's Learnnet email system, school principals and science teachers. We rely on science teachers in the communities as

they are a direct link to students with Science 10. Many act as liaisons between ENR, parents and students.

Camp Attendance

Student applicants were up for 2012. Sixteen students from four communities were accepted to the 2012 camp.

A standby list was established because experience has taught that a few withdrawals are to be expected. Students in the past have encountered medical, personal or work commitments. As in previous years, several students withdrew in 2012 for various reasons. Standby students were then invited to attend; however, because of timing, many had made other plans. Three last minute withdrawals left two empty spaces.

Camp coordinators found two potential students from a parallel application process for another event. ENR's Environment Division was concurrently screening youth to attend a Youth Eco Forum in the Yukon. TSC and Environment staff worked together and invited, on very short notice, two youth who were screened out of the Eco Forum process.

With only two days notice, one participant from Norman Wells accepted our offer and found funding for her flight from the K'asho Got'ine band in Fort Good Hope.

In the end, 14 students and one teacher from 5 different communities were in attendance:

- 8 from Yellowknife
- 2 from Hay River
- 1 from Behchoko
- 2 from Whati
- 1 from Norman Wells
- 1 teacher from Yellowknife

Camp Staff and Instructors

A total of 34 people were at the Tundra Ecological Research Station during the 2012 Science Camp. In addition to the 15 students, there were:

- 11 camp staff/instructors (including 3 Tłı̨chǫ elders)
- 2 youth participants;
- 4 university researchers;
- 1 university researcher/ instructor; and
- 1 Tundra Ecological Research Station manager.

Staff provide both formal and informal learning opportunities for the students. This ranged from classroom and outdoor programming to evening sharing circles and learning activities such as a geology time line and atlatl throwing.

University students, using the facility as a research station, gave TSCC students the opportunity to participate in on-going climate change monitoring programs and to learn from these researchers about their “real life” studies. In addition, the TSCC students were able to talk informally with university students about education, careers and climate change. Occasionally, we are able to use the talent and expertise of graduate students

as actual session instructors. As such, the university students provided important role models for our high school students.

Staff/instructors had varied backgrounds and provided a full spectrum of experiences to the students:

- Tom Andrews
  (Archaeologist – ECE, Prince of Wales Northern Heritage Centre)
- Diane Baldwin
  (Geologist - NWT Geoscience Office)
- Nimisha Bastedo
  (Camp Cook)
- Karin Clark
  (Biologist - Wek'eezhii Renewable Resources Board)
- Brenda Hans
  (Assistant Camp Cook)
- Dora Nitsiza
  (Tłı̨chǫ Elder)
- Joachim Obst
  (Contract Ecologist/Ornithology Specialist)
- Michele Rabesca
  (Tłı̨chǫ Elder)
- Bernadette Rabesca
  (Tłı̨chǫ Elder)
- Sarah Desrosiers
  (University researcher/plant biologist)
- Tasha Stephenson
  (Biologist – Public Education Specialist, ENR)
- Stephanie Yuill
  (Camp Coordinator – Public Education Specialist, ENR)

Schedule/Programming

Before camp, students attended a mandatory ½ -day orientation session the Saturday morning before the planes departed. Included in orientation was:

- Introduction of staff/instructors (via photos)
- Introduction of each other through ice breakers
- Camp rules, logistics
- Bear safety
- Equipment check
- Participant expectations
- Camp scheduling

At camp, students were divided into small groups and attended half-day instructional sessions. Each session included time spent in the classroom and in the field with relevant experts in archaeology, ornithology, botany, geology and wildlife biology. All experts incorporated both hands-on and outdoor components in each session. Often, other staff would accompany the main instructor to provide inter-disciplinary insights.

While camp programming doesn't vary greatly, each year attempts are made to take advantage of opportunities that arise. This year, Sarah Desrosiers, a graduate student from the University of British Columbia was able to assist with the plant ecology programming, act as a mentor for students and introduce a Berry Productivity Monitoring program she is working on.

Also this year, we were able to take advantage of Tasha Stephenson's expertise. While currently a Public Education Specialist with ENR, Tasha's background is with fisheries and fish biology. Hence, we were able to offer students' sessions on fish biology.

As in the past, three Tłı̨chǫ elders were involved in cultural programs. A nimba (tipi) was assembled by students under the watchful eye of Michele Rabesca. Several cultural activities and programs were held in the nimba.

The detailed camp schedule appears in Appendix B. Below are highlights from selected activities.

- Walking barefoot through a bog and feeling permafrost on the bottom of their feet;
- Learning to use a spotting scope and viewing nesting red-throated loons;
- Learning how to, and how not to, pick mushrooms;
- Learning to fire off a bear banger;
- Throwing an atlatl, a reproduction of an ancient spearthrower;
- Checking traps as part of the small mammal monitoring program;
- Chipping a stone tool out of obsidian;
- Erecting the nimba and experiencing cultural life inside;
- Making a rattle out of willow and caribou hide; and,
- Walking a beach seine through the lake in an attempt to catch something; and
- Exploring 2.7 billion year-old bedrock.

Aside from attending programs, students were responsible for various chores. They were divided into chore groups and rotated tasks throughout the week and never repeated the same chore twice in a row. In the morning, groups washed breakfast dishes, took daily weather readings, cleaned latrines or assisted with the small mammal study by counting animals caught along a trap line (part of a coordinated survey across the NWT). Chore groups were also responsible for washing lunch and dinner dishes.

Social activities depend upon the composition of the camp. As always, swimming was an integral part of each day. Hand games were popular with students and two nights were spent in friendly competition. This year saw increased participation by the university students who participated in a number of activities, including hand games.

Art and creativity surfaced as the surprise activities this year. A number of students were exceptional artists and

incorporated their artwork into projects and collections. Spare time was spent working on these masterpieces (Appendix C). A great deal of spare time was also spent finishing up artistic endeavours such as rattles and obsidian/stone tool pieces. With two back to back birthdays at camp this year, music could be heard as the guitarist and fiddlers tuned their instruments in preparation for celebratory serenading.

Swimming, as always, was an activity enjoyed by all, despite the cold water temperatures. And a small, but very dedicated group of camp also partook in fishing as often as possible.

Student Collections

During the first seven days of the camp, students were exposed to a number of different fields of Western science and a number of traditional practices. This exposure culminated with two student-lead activities: a collection fair and a student project presentation.

Students were informed of both activities at the beginning of camp. Information was reinforced throughout the week (particularly during the all-day, instructor-led hike) so students could take every opportunity to collect the necessary specimens/ samples.

Students were expected to choose their own areas of interest for both activities for it to be interesting and relevant to them. To help them focus and prepare their research and presentations, students were given hand-outs from previous years with examples of what, and how, things were done in the past (Appendix D).

On the final Friday evening, students set up displays of their collections as staff, instructors and other students circulated and asked questions.

Collections were as varied as always but very creatively displayed.

- One student collected samples and photos of scat. As part of his display, he drew a humorous picture of someone in an outhouse d wondering about animal poop.

- One student collected scientific instruments. He created a quiz to match the name/purpose of the instrument with the actual instrument.

- One student collected berries, made stains out of them and then painted pictures with the different stains.

- One student drew/took pictures of clouds. He displayed his pictures but created a game where you had to guess not only the type of cloud but also its height in the atmosphere.

- One student collected bird feathers and creatively displayed them on a paper bird she made.

- One student collected plants to make tea with and provided an interactive, taste-testing display.

- One student took advantage of a giant paper caribou Tom Andrews brought to camp for the atlatl demonstration. Through photography, she collected evidence of caribou, printed the photos and displayed them on the actual paper caribou!

- Two students collected animal tracks and displayed the plaster castings they made.

- Three students collected tundra plants, pressed them, labelled them and created their own personal herbariums.

- Two students collected and identified rocks.

- One student looked at yellow-billed loons and sketched a loon as his display.

Student Projects

The last few days of camp were spent on the students' individual research projects. These projects enabled them to pursue an area of interest and present it in their own way. They could work individually or as a team, depending on the depth of research.

To help them focus and prepare their research and presentation, students were given two project outlines from previous years and an outline sheet to fill out (Appendices E and F). Students were also assigned an instructor to mentor them throughout their projects. The mentor acted as a resource for the students, answering questions or providing direction to other resources. Mentors also ensured students were on track with timing and encouraged students to start work or accompanied students in the field to collect the necessary samples or field data.

Students were made aware of the projects early and had ample time to prepare. Aside from the all-day hike and time during other classroom activities, almost three full days were available for research and preparation. Final presentations were held the early evening of the final full day.

Eleven projects were presented:

1. Traditional Hospital – two student 'doctors' presented different traditional medicines and how they can be used for different ailments.

2. Food Preferences of the Common Ground Squirrel ('Urban' versus Wild) – the student set out various foods near known squirrel haunts, recording what each squirrel ate in order to determine food preferences.

3. From Tarp to Tundra: Making Stone Tools and Comparing Lithic Scatters – two students made two stone tools, graphed their lithic scatter and compared it to an archaeological site found on the esker to see if they could determine what had been actually made on the esker.

4. Bird Plucking and Plumage – two students plucked a bird each and created a design with the feathers in order to determine the significance of the age of the bird to the appearance and size of the feathers.

5. Hand Game Signals – one student created a hand-sketched manual documenting different hand game signals.

6. Living on the Tundra Before Technology – the student interviewed elders and researched books and the Internet to determine how people survived on the tundra in the past.

7. Stains of the Tundra – youth collected plants, created dyes and dyed clothes in order to determine what plants made the best dyes and inks.

8. What Lichens Eat – student questioned whether lichens will vary on different rocks in different location.

9. Tundra Restaurant – two students put together a cooking show to illustrate what kinds of foods could be harvested from the tundra, accompanied by a cooking demonstration and taste testing.

10. Tundra Spa – two students collected sand from different beaches and gave volunteers foot scrubs to ascertain what particles made for the best foot scrubs.

11. Muskoxen on the Move – one student researched what could happen when muskoxen move into caribou tundra habitat.

12. From Cave Paintings to Calligraphy – the student examined which writing techniques worked best: inks, charcoal or dyes.

Traditional Knowledge

Traditional has always been a significant part of the camp; to the point it was decided to change the name of the camp from Tundra Science Camp to Tundra Science and Culture Camp.

From beginning to end, the three Tłı̨chǫ elders were involved in camp programming. Immediately after arrival and the camp orientation, elder Michele Rabesca led everyone through a Feeding the Water ceremony. At the very end of the camp, just before departure, Michele took us through a Feeding the Fire ceremony.

In between, students had opportunities to interact with, and learn from, the elders. Formal traditional knowledge sessions included Dene games, storytelling, rattle making, beading and caribou hide scraping. Informally, elders also acted as a resource for a number of students who used their knowledge for research projects.

The presence of the elders also provided invaluable bonding time. Students were often seen simply sitting with elders, chatting with them during meal times or picking berries during the all day-hike.

The Tłı̨chǫ language was promoted through the use of a word-of-the-day poster in the dining tent. Each day, two relevant words were written in both English and Tłı̨chǫ for all to see and learn. Many instructors also incorporated traditional knowledge into their sessions.

Budget

The Table 1 details the budget for TSCC for the students and staff in attendance for the 10 days. Note, this does not include salary costs for GNWT and WRRB instructors and staff nor does it include miscellaneous supplies.

Table 1: 2012 Tundra Science and Culture Camp Budget

Debits		**Expenses Incurred**
Air Charters	Caravan (Split) - Groceries	$1,500.00
	Twin Otter Groceries & Personnel	$4,536.00
	Twin Otter - Staff & Participants (4 @ $5,500)	$15,567.19
Food	Groceries	$2,776.52
Contracts	Cook	$4,000.00
	Contract instructor	$1,500.00
	Elders (3 @ $3,000)	$9,000.00
Total Cost		**$38,879.71**
Credits		**Credits Received**
Tuition	14 X $300 (Students and Teachers)	**$4,200**
GNWT Financial Contributions	ENR (Field Support)	$5,000.00
	ENR (Wildlife)	$15,679.71
	ECE (PWNHC/Education)	$9,000.00
	ITI (Geology)	$5,000.00
	Total GNWT Financial Contributions	**$34,679.71**
Total Credits	**Tuition and GNWT**	**$38,879.71**

Evaluations

The camp evaluation was updated this year in order to encourage students to provide more feedback on their experiences at camp. The evaluation included both open and closed questions. Students and student teachers were asked to fill out evaluation forms on the last day of camp.

Appendix G is the detailed and tallied summary of the student evaluations.

Camp staff and instructors also evaluated the program, as they do every year. While students were filling out their evaluations, staff and instructors met to debrief and assess the camp and provide recommendations on how to improve future programming. Below is a selection of critiques, ideas and comments from camp staff and instructors.

- The need for alternatives to traditional activities based on caribou. In the past two years, the hunt for caribou has been unsuccessful which impacts activities normally carried out by Tłı̨chǫ elders. Suggestions included:
    - Making willow bark nets for whitefish and fish drying;
    - Purchase stroud for more sewing projects; and
    - Purchase smoked hide to make moccasins.
- Electronics - have plastic box to store all electronic devices, install an Internet password protection.
- Equipment list – we need a thorough inventory of what is at camp and in Public Education storage.
- All day hike - we need to create map with directions and instructions; a radio for elders.
- Rejigging of sessions to ensure on time.

One recommendation fully supported by all camp staff and instructors during the meeting was to change the name of Tundra Science Camp to Tundra Science and Culture Camp. This recommendation was implemented immediately.

Conclusion

Group dynamics differentiate each Camp as each student brings something different to the experience. The 2012 camp was no different.

The blending of art, creativity, science and traditional knowledge was highlighted from a scholastic view. Students took their on-the-land learning and morphed it into extremely creative things. Eskers, yellow-billed loons and even scat were transformed into pieces of art. Music was heard echoing from the landscape. Even the tastes of the tundra provided tangible experiences. Students were able to take in the tundra and all it had to offer and absorb it in ways that facilitated their independent learning best.

The friendships that developed were also highlights of the camp. When a student was challenged for whatever reason, there was always a fellow student or staff person to provide support and assistance. When someone struggled with a concept, someone was there with guidance. When someone struggled physically, a helping hand was always extended. When two people had birthdays, all voices joined together in celebration.

Another highlight was the gift the tundra provided on our last night: the sight of a bull caribou passing by camp. All students raced up the esker to pause and witness this reminder of what the land is all about.

As always, the ten days concluded with tears of happiness and sorrow. Much fun was had throughout the camp and students were often seen smiling and heard laughing. This made saying goodbye hard for many students. One of the most important lessons students left camp with was that science, traditional knowledge, fun and friendship can all work together in harmony.

Appendix A – Promotional Poster for Teachers

Appendix B – Tundra Science Camp Schedule 2012

Saturday, July 28

Orientation Day/
Flights to Daring L.

9:00 am.- 12:00 pm.
*Meet at NUP, 2nd floor classroom (205)
-meet & greet
-bear safety (in)

1:30 and 2:00 pm.
Flights to Daring L.

4:00 pm.
Paying the Water
Camp Orientation
Bear Safety

6:00 pm. **Supper**

7:30 pm.
Evening activity
-Stephanie &Tasha

Opening Circle
- Stephanie & Steph

Staff Meeting

Sunday, July 29

8:00 am. Breaky/
Chores

9:30 am.
Reflection - Michele

10:00 am.
Group 1
Human History
-Tom

Group 2
Plants & Berries
-Karin & Sarah

1:00 pm. Lunch

2:00 pm.
Group 2
Human History
-Tom

Group 1
Plants & Berries
-Karin & Sarah

6:00 pm. Supper

7:30 pm.
Presentation (Tom)

Monday, July 30

8:00 am. Breaky/
Chores

9:30 am.
Group 1
Cultural Activities
-Dora, Michele, Bernadette

Group 2
Caribou Ecology
- Karin & Brenda

12:30 pm. Lunch

1:30 pm.
Group 2
Cultural Activities
-Dora, Michele, Bernadette

Group 1
Caribou Ecology
- Karin & Brenda

6:00 pm. Supper

7:30 pm.

Collections and Projects
-Stephanie

Co-management
-Karin & Steph

Tuesday, July 31

8:00 am. Breaky/
Chores

9:30 am.
Group 1
Aquatics, Insects & Fish
- Tasha

Group 2
Geology
-Diane

12:30 pm. Lunch

1:30 pm.
Group 2
Aquatics, Insects & Fish
- Tasha

Group 1
Geology
-Diane

6:00 Supper

7:30 pm.
Time Travel
- Diane & Steph

Sharing Circle
Further Introductions

Wed., August 1

8:00 am. Breaky/ Chores

9:30 am.

All Day Hike

-den ecology
-wildlife viewing
-geology
-human history
-Dene perspective
-birds
-plants

6:00 pm. Supper

Thursday, August 2

8:00 am. Breaky/ Chores

9:30 am.
Tool Making (All)
-Tom

11:00 am.
Cultural Program (All)
-Michele and others

12:30 pm. Lunch

1:30 pm.
Group 1
Birds
- Joachim

Group 2
Projects-Introduction & Mentor

6:00 pm. Supper

7:30 pm.
Wildlife Techniques
-Tash, Karin & Steph

Friday, August 3

8:00 am. Breaky/ Chores

9:30 am.
Group 2
Bird
-Joachim

Group 1
Projects-Introduction & Mentor

12:30 pm. Lunch

1:30 pm.
Projects

6:00 pm. Supper

7:30 pm.
Collections Fair

Circle

Saturday, July 30

8:00 am. Breaky/ Chores

9:30 am.
Projects

12:30 pm. Lunch

1:30 pm.
Projects

6:00 pm. Supper

7:30 pm.
Tundra Challenge 2012
-Tasha, Steph & Some Special Guests

July 31, Sunday

8:00 am. Breaky/ Chores

9:30 am.
Reflection

10:00 am.
Projects

12:30 pm. Lunch

1:30 pm.
Projects

3:00 pm.
Project Presentations

6:00 pm. Supper

7:30 pm.
Cultural Program
-Michele and others

Closing Circle

August 1, Monday

Say Goodbye to Daring Lake!

9:00 am. Breaky

10:00 am.

-pack up camp
-closing ceremony
-evaluations
-staff meeting

Departures to YK
1:30 & 3:30 pm.

Appendix C – Student Art

Yellow-billed loon (pencils), Richard Beaverho

Yellow-billed loon (ink made from tundra berries), Mikaela Tuccaro

Appendix D: Examples of Tundra Science Camp Student Collections

Objective:

1. Collect 8-10 items/ species/ examples,
2. Learn the classification system for those items
3. Become familiar with the field guides, manuals and other resources available for identifying these items.
4. Display and present your collection at an informal collections fair.

Past Collections, for example:

1. Rock types/minerals/potential for tool-making

2. Plants – common/medicinal/traditional uses/traditional teas/flowers

3. Aquatic invertebrates.

4. Mushrooms

5. Soil samples.

6. Animal sign/remains (not bones).

7. Sunspots.

8. Lichens.

9. Tracks.

10. Terrestrial insects

11. Hair

12. Indicator minerals

13. Berries

14. Original poetry/art

15. Habitats

16. Traditional stories

17. Sounds

18. Fish prey

19. Mosses

20. Scents

21. Feathers

22. Archaeological sites (using photos)

Appendix E – Examples of Tundra Science Camp Student Projects

Past Projects

1. Permafrost - comparison of permafrost depth at various locations with different plant coverage and different degrees of human disturbance.

2. Daring Lake Ecology – construction of a food web based on evidence of species in the lake.

3. Tool making – collection of rocks that have conchoidal fracture and attempt to make tools from them.

4. Tool-making – construction of various tools using wood, obsidian, stone, hide including bow drill, arrows, bow, knife, model dead-fall and fish traps, snares and willow fishnet.

5. Tool-making – construction of caribou fence and description of traditional caribou hunt.

6. Late evening wildlife observation – planning a walking route for observing and recording evidence of wildlife.

7. Habitat comparison for plants – measurement of plant height and leaf size of dwarf birch in a variety of habitats.

8. Medicinal uses of tundra plants – collection and pressing of plants with traditional medicinal uses.

9. Ecology of peregrine falcons – observation of peregrine nest sites, response to disturbance, collection of prey remains and if possible, banding of chicks.

10. Comparison of food bait preferences of insects.

11. Pictorial description of process for tanning hides.

12. Mapping of archaeological sites.

13. Recording of traditional place names.

14. Mapping and description of wildlife use of bear rocks.

15. Mapping of rock outcrops.

16. Pictorial dictionary of Dogrib.

17. Mushroom collection and spore printing.

18. Plant collection and taxonomy.

19. Description of caribou hunting and meat and hide processing.

20. Comparison of aquatic invertebrates in fast-moving water, lake and pond habitats.

21. Comparison of plant phenology on island and mainland.

22. Comparison of phenology and size of blueberry plants in different habitats and preparation of pemmican and blueberry squares.

23. Mapping of “spoon” glacial feature and construction of a model.

24. Stream dynamics.

Appendix F - Tundra Science Camp Project Outline

Project Team
(Who's doing it? 1,2,or 3 people max.)

Title of Project
(What it's about?)

Purpose
(What questions are you trying to answer?)

Methods of Study
(How are you going to find your answer?)

Equipment
(What will you need?)

Expected Results/Product
(What do you think you will find?)

Presentation
(How will you "show and tell" your project?)

Project Team: **Kay and Curly**

Title of Project: Tracking Wildlife Life of the Narrows Beach

Purpose: To see what animals hang out around the Narrows when people are not hanging out there.

Methods of Study:
Monitor animal tracks/footprints in the sand at different times of the day and night. Rake the sand clean of tracks and return to check for tracks first thing in the morning; in the afternoon; late evening. Identity and document the tracks; measure size of track for comparison of individuals; record direction of movements. Record human activity during intervals between sampling, to see if that influences number of tracks. Photograph or make plaster cast for sample tracks.

Equipment:

Garden rake	Camera	Watch/clock
Notebook and pencil	Plaster and mold form	Each other, buddies to leave camp

Expected Results/Product:
We think we will find tracks of some small animals, and maybe caribou and wolf and maybe even a Big Animal. During the day, we expect some human tracks. Probably there will be more animal tracks overnight, when people aren't moving around.

Presentation:
We can do a bar graph of the number of each species that we found there. We can do another graph to show the activity at different times of the day. We may have some plaster casts to show different animal tracks. If we get a 'mystery' track we can make up a story about it!
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Project Team: Lina and Jake

Title of Project: Traditional Uses of Caribou

Purpose: To see how our grandparents used parts of the caribou.

Methods of Study:
We will talk to elders at the camp, research and read books and other materials,

Equipment:

Notebooks and pencils	Camera	Caribou hide	Caribou
Scarf/traditional clothing	Thread and needle	Birch bark basket	Buttons

Expected Results/Product:
We think that our grandparents used each and every part of the caribou and did not waste anything.

Presentation:
We would like to present it as a play. One of us will be the interviewer and one of us will be the elder being interviewed. We would like to use various props to demonstrate the different uses of different parts of the caribou. For example, how the sinew was used for sewing clothes and stitching together baskets.
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Appendix G – Amalgamated Tundra Science Camp Student Evaluation

Orientation Day:

1. Did orientation prepare you for camp?

   Yes: 14 No: 0 Somewhat: 1 N/A: 2

2. What we you NOT prepared for?

- The chores
- How much fun it was going to be!
- The weather and how much it could vary
- Long, school-like projects
- Ask to go outside the fence
- All the fun I was going to have
- How cold the water would be
- The extreme, awesome land
- All day hike
- Leaving so soon
- Extra clothing
- Pretty much everything
- I was pretty much prepared for everything, because I've already been here before
- The fact that having no trees is scary
- Jumping in the lake
- Jumping in a very cold lake!
- Having to take baths in the lake

3. Rate the following parts of orientation and how useful they were for you:

	Extremely Useful	Very Useful	Somewhat Useful	Not at all Useful
Logistics	6	6	3	
Safety	8	7		
Equipment Check	6	6	2	1
Expectations	6	5	4	

Group Activities	6	7	2	

4. Do you recommend any changes to the orientation?

- The chores, no projects, more free time
- It would have been nice to actually go through the bags we lugged to the meeting…
- We brought <u>all</u> of our gear up, but didn't end up touching it during the orientation… quite silly
- All day hike and weather
- There should be more activities at the beginning to introduce ourselves and remember each other's names
- Work the projector

<u>Camp Schedule:</u>

1. Was the length of camp:

   Too long: 2 Too short: 9 Just right: 6

2. Were the instructional sessions:

   Too long: 5 Too short: 0 Just right: 12

3. Was there enough time to pursue your own interests?

   Yes: 10 No: 6 Sometimes: 1

4. Did you have enough time to complete camp chores?

   Yes: 17 No: 0

5. Did you feel lights out and wake-up times were appropriate?

   Yes: 13 No: 2 Sometimes: 2

6. Do you recommend any changes to the camp schedule?

- For older participants – more leeway would be appreciated, depending on their experiences and background
- The groups were a little too early
- A little more time to complete projects
- Each day plan some free time (ie. 45 mins a day maybe)
- It would be nice it if was longer, maybe 3 or 4 more days
- More free time at night
- More time for projects and collections… or at least introduce the projects and collections earlier in the camp
- Just a little more time/advanced warning about projects and collections
- The chores, no projects, more free time
- Usage of iPods, MP3, laptop, etc.

Camp Content:

1. Program variety. Was there: Too much **1** Too little ___ Just right **16**

2. Which sessions/activities were most valuable to you (check ***all*** that apply):

Human History: 14
Cultural Activities: 15
Aquatics and Insects: 12
Birds: 16
Wildlife Techniques: 10
Projects: 10
Tundra Challenge: 10
Sunday Reflections: 7
Atlatl throwing: 12
Plants and Berries: 15
Caribou Ecology: 13
Geology: 11
Tool Making: 13
Collections Fair: 12
All Day Hike: 15
Sharing Circles: 9
Co-management Activities: 4
Geology Time Travel: 5

3. Are there other topics you would think would be useful at future camps?

- Wolves maybe. Wolves are cool.
- Basic survival skills
- Some survival techniques or sessions could be interesting
- The topics are just right. You learn a lot that's best for the future.
- Traditional games
- Making traditional food with the elders (ie. bannock, dry fish)
- Biology

- Study of life
- Canoeing
- More cultural activities
- Study carnivores (wolves, etc.)
- Canoeing
- Tests of land
- Climate change/global warming and how it is affecting the tundra
- iPods, Mp3, Laptops should be allowed

4. Was there enough balance between instructor-led sessions and student-directed studies?

   Yes: 14 No: 3

Group Dynamics:

1. Did you prefer:

   Activities with the whole group: 2
   Activities with smaller groups: 7
   A mix of both sized groups: 8

2. Did you get enough time to interact with people at camp:

Fellow students	Yes 17	No	
Staff	Yes 17	No	
Elders	Yes 14	No 2	Somewhat 1
Grad Students	Yes 14	No 2	Somewhat 1

3. Was there enough time for group reflections and sharing?

   Too much: 3 Too little: Just right: 14

4. Did you feel you could approach a staff member if you were concerned about things?

   Yes: 15 No: 1 Sometimes: 1

5. If no, what prevented you from feeling comfortable with this?

- I always felt comfortable voicing my concerns because the staff were extremely nice and understanding

- Too busy sometimes
- Some staff were a lot more serious than others… it was way easier to approach the fun staff, especially when asking about project expectations and deadlines
- Some staff didn't approve of our project ideas and I found it difficult to talk to them about it
- Didn't want to be rude

Accommodations:

1. Were you satisfied with sleeping arrangements?

   Yes: 17 No:

2. Do you have any suggestions for improvements?

- Make sure people are actually sleeping/getting ready for sleep at the appropriate time so there are no inconsiderate people keeping others, who are trying to sleep, up
- Wider bunks
- Everything was wonderful!
- A little more light
- It was good. I was comfortable and warm.
- I was expecting to be sleeping in little tents on the ground, so the bunks were awesome!
- iPods, MP3, Laptops, etc.

Meals:

1. Were you satisfied with the food?

   Yes: 17 No:

2. Was time spent helping in kitchen:

   Too much: 1 Too little: 2 Just right: 14

3. Do you have any suggestions to improve the menu or the way meals were prepared?

- I think all the meals were great!
- Everything was delicious!
- Involve the students
- More meat
- Every meal was just right. I liked how they fed us until we were full.
- All the food was great! No complaints.
- Make sure to have lots of hot chocolate!
- Include cultural food a little more. Otherwise, the food was awesome!
- Traditional food like dry meat, dry fish, caribou meat, and muskrat or hare meat. But besides that, the food was so tasty and awesome. Masi cho for the wonderful food!
- More fish, caribou and/or more traditional food
- IT WAS ALL SUPER GOOD!
- All of the food was delicious!
- More meat.
- Personally, although I did indulge in the sugary menu, I did think that there was too much of it, but those are my tastes.

Facilities:

1. How can we improve other camp facilities (wash tent, lab tent, outhouses, dock, dining tent etc.)?

- You don't need to
- It was all pretty good. Maybe try making things for projects and collections easier to find in the classroom tent.
- They are perfect.
- More febreeze in the outhouses will be great.
- Outhouses less smelly, smell was overwhelming at times.
- Some solar lights leading up to restroom
- On equipment list, make "bring eco-friendly shampoo" more of a rule, rather than a suggestion.
- It would be nice if they parked the boat at the end of the dock closer to the shore so we have more room to jump off and keep an eye on each other while swimming.
- Outhouses. Bring a few air fresheners for the girls outhouse.
- Put an air freshener in the outhouses.
- Let students shower on the cold days.
- You can't.
- The setup of the camp is great and almost too comfortable it that's possible.

More to Say?

1. In case we missed something, feel free to comment on any and all aspects of the program.

- I had a great time at Tundra Science Camp. The class sessions were all incredibly interesting and I know so much more about the tundra now. The staff were all very nice and the grad students were very open and easy to talk to. I loved hearing about their work and getting to see Jill and Casper on the all day hike was great. I hope to return next year!

- I was not loving the whole "student teacher" thing here… All the "educational activities" minus the chores and work and making yourself look silly during some activities… Yeah right! Guidelines/expectations could have been more clear as to why he was here. Other than that… I loved everything! Sometimes the classroom sessions were a little sleepy, but I learned a lot and had the most amazing time here at Daring Lake. Masi cho!

- This course covers only scientific evolutions, but no other ways we came to existence. Also, allow more free time to go out on the land and water and make exceptions to the curfew. This could let students who want to, explore more of the tundra and do more activities such as canoeing and hiking further distances. Have a fire for the students, not only the elders also. Allow students to miss cultural activities such as hand games and not partake in feeding fire/water.

- The all day hike was fun. I liked it a lot. The Tundra Challenge was exciting. Bird watching and walking in the permafrost was new, informative, and fun. Just the whole Tundra Science Camp was awesome! I learned a lot, had so much fun, and got to meet great people. I made new friends and I actually liked a camp that's about a subject I learn in school! Maybe one day, I will have a career in some sort of science or something to do with the environment and nature. This was my first time up on the tundra, and I loved it! My only complaint is that I think it should be a few days longer and to have more free time.

- Overall, a good program.

- I loved ALL aspects of the camp! It was truly an amazing experience. It would be nice if they stretched it out into a 2 week program, so we have more opportunities to go for hikes, fishing, berry picking, and learn more from our instructors. It would be cool to see Denis come back up here to teach canoe, kayak, and water safety. I wouldn't mind to spend time around the camp fire

with the group. It would be great if the elders could instruct beading for a morning and elaborate further on their language for an afternoon. I love how TSC incorporates science as well as traditional knowledge, but it would be nice if the elders were given more opportunities to pass on their traditional knowledge to us. If we could have more elders from around the north up here (maybe one or a few from each region) we could better teach the students about different aspects of TK and it would make the camp more successful than it already is! Other than that, it was amazing. I'm going to miss the people and the tundra sooooo much. Oh, I'd also like to thank everyone for such AMAZINGLY GREAT hospitality. It truly felt as if we were one big family. Everyone always looked out for each other and that's exactly what you need to make a camp successful!

- Had a good time! Hope to come back.
- More time to work on projects and collections.
- This was so much fun and the tundra is so beautiful. I don't think there was anything bad about the entire trip. This was the best vacation ever!
- The amount of time instructors took to talk about their subject in lessons was a little long, but other than that little hitch, it was an overall, awesome experience!
- More fun games that include running around crazy!
- One thing I'd like to point out from the sessions is the length of the presentation. I don't know how previous years responded to these. There's also the fact that you seem to get, for the most part, the cream of the crop to this camp, but there could be more interaction between presenters and audience during presentations. You do compensate for that when we go on the field. The atmosphere of positivism that radiates from this camp also helps to tame the kinds with needs. Overall, amazing jobs on the organization and general knowledge of all the instructors. You can really see that you are all passionate of your fields of expertise and are very eager to share this with the kids.

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