

A Brief History of the Alaskan Sled Dog: Not All Super Heroes Wear Capes





Sled Dog Origins

- Evolved from Asian wolf
- Mongolia to Siberia 20,000 to 30,000 yrs ago
- Crossed land bridge 5-10,000 yrs ago
- DNA evidence supports influx of N.A. wolf and later domestic dog

Functions of early sled dogs

- Companion- warmth
- Protection- alarm system for enemies and predators
- Hunting, Tracking
- Transportation and Draft for nomadic people- wood, water, shelter, supplies

Original North American Sled Dog Breeds

- Coastal
- Interior



What characteristics define a breed as a sled dog?

- Any dog that pulls in a harness while attached to a moveable object is a sled dog

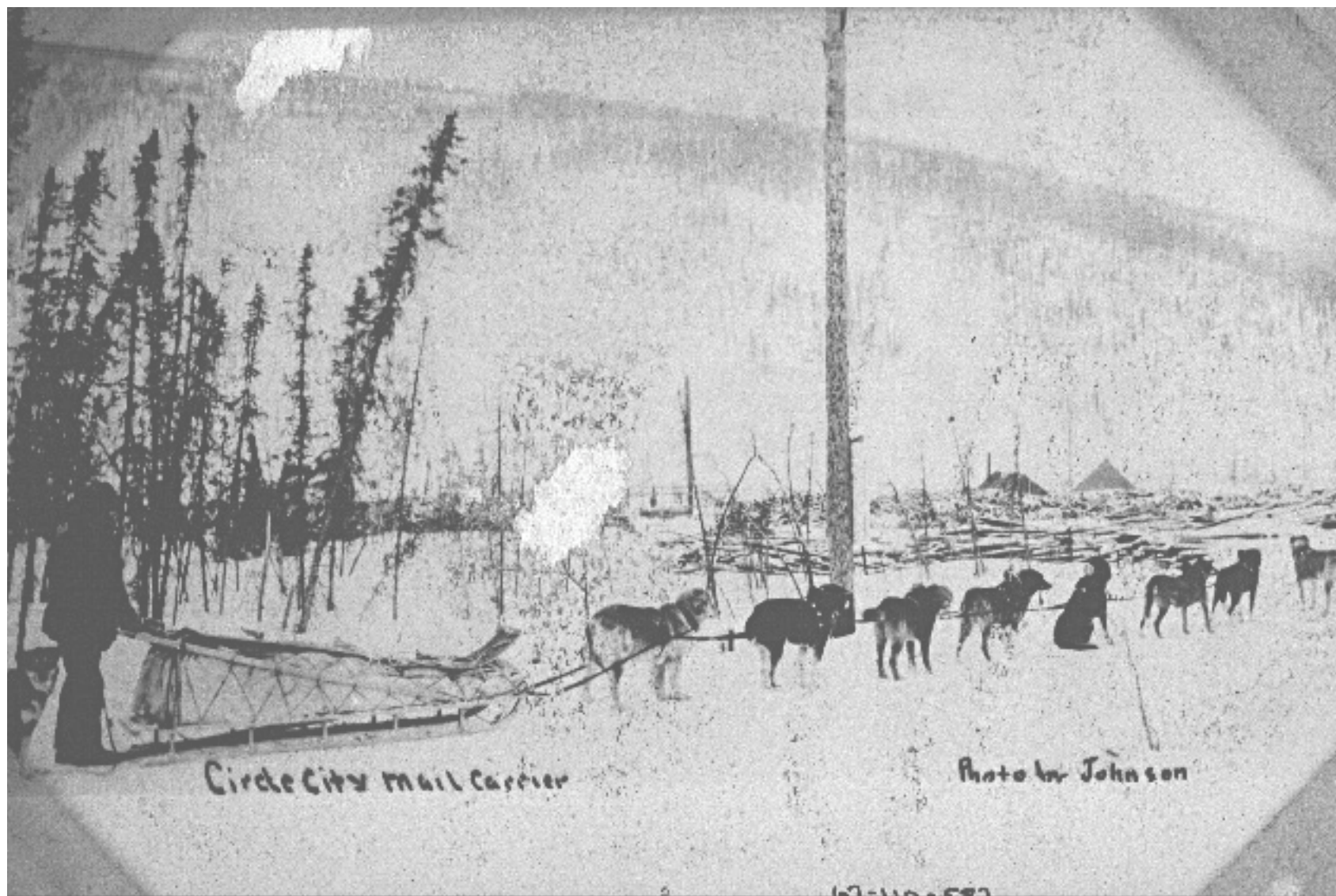
Sled dogs in Alaska: post European contact





AKLAND, VERMONT, 1900 TO DAWSON, V.T.

HEGG
PHOTO



Circle City mail carrier

Photo by Johnson

67-44-587







← THE WINNERS →

← JOHN JOHNSON, ENTRY →

← SEVENTH ALL ALASKA SWEEPSTAKES, NOME, ALASKA, APRIL 13th 1914 →

John Johnson
Nome
1914



→ WINNERS FIRST PLACE. →

→ FINISH, LEONHARD BEPPALA ENTRY, 9TH ALL ALASKA SWEEPSTAKES

FAIRBANKS, ALASKA, APRIL 11, 1911. TIME: 11:03 AM TO 3:30 PM. 33 MI. & 500 YD.

PAUL BRONK
HOME.
629A

Nome 1925

- Gold rush town
- 10,000 people
- Ice bound harbor from November to late June
- Poor sanitation+ high concentration of people
= high risk of epidemic
- Dr. Curtis Welch was the only MD in Nome
- Stock of diphtheria antitoxin was out of date,
new order did not make the last ship to port

Don't you think Nome
looks awfully beautiful
is fine of her now. I see

Happy and I hope you do the same!
My best regards and warm love from Ot.



BIRDS EYE VIEW OF NOME ALASKA, JAN-1907~



22 * NOME, ALASKA, 1900. *

LOMEN BROS
NOME
#995

Diphtheria

- Highly contagious
- Usually fatal without antitoxin treatment
- First case diagnosed January 19
- First fatality January 20
- January 22
 - 20 confirmed cases, 2 deaths
 - Dr Welch requests 1 million units antitoxin

1925 Nome Epidemic

- Jan 26, 300,000 units found in Anchorage
- Sparks intense debate on means of transport:
Dog team vs airplane
- Jan 27, 300,000 units of antitoxin moved from
Anchorage to the end of the rail system in
Nenana

1925 Serum Relay: “The Great Race of Mercy”

- Iditarod trail was the mail route from Seward to Nome
- Nenana to Nome normally took about 30 days by dog team

The Great Race of Mercy

- At onset of relay Interior AK at a 20 year record low in temp

Wild Bill Shannon left Nenana at 9 pm Jan 27
the temp was -50 F

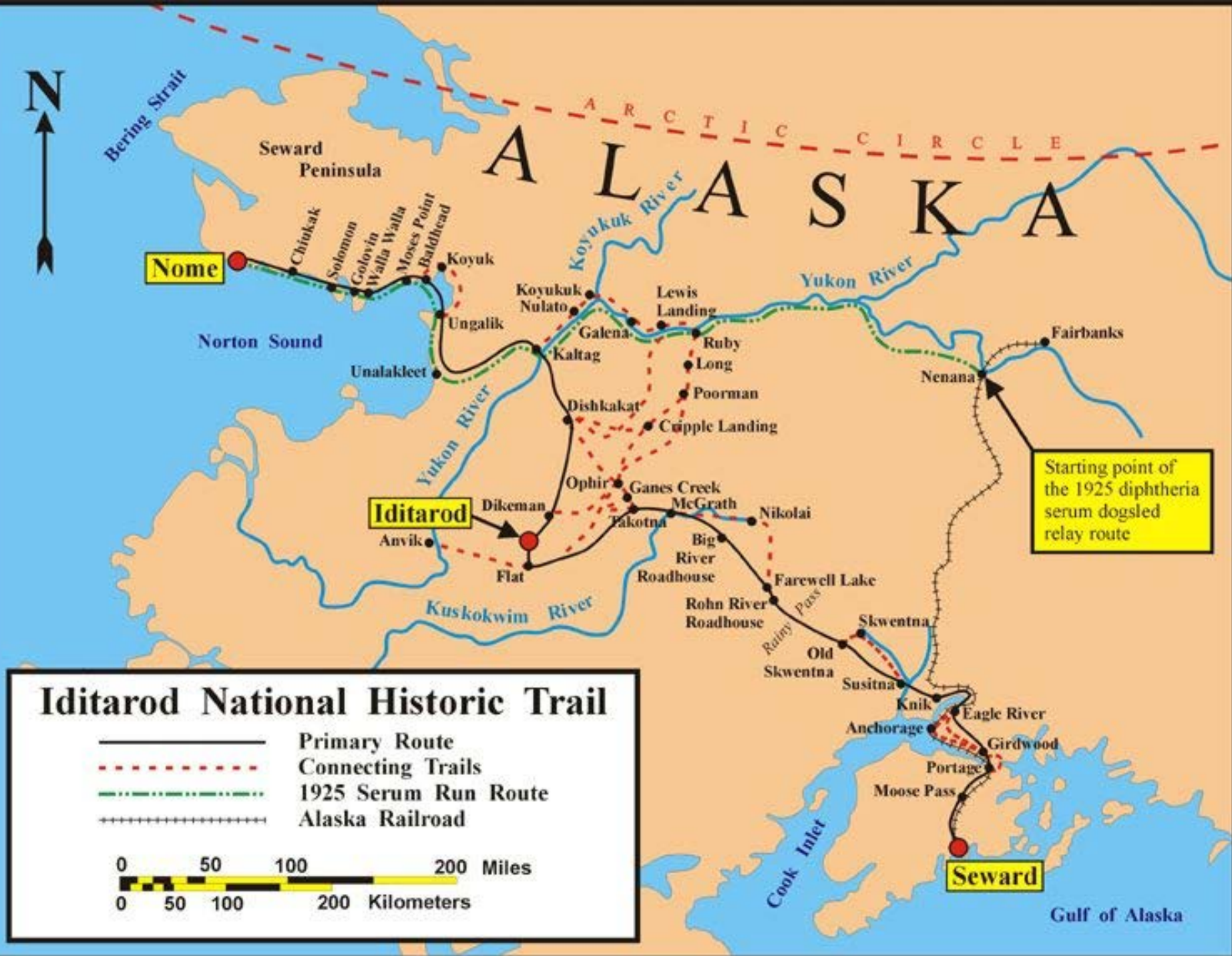
When he arrived in Minto the next morning, the temperature had dropped to -67F, he continued on to Tolovana

Three of his dogs died later from exposure experienced during the run



After warming the serum in the roadhouse, Edgar Kalland headed onto the trail. The temperature had risen to -56°F ,

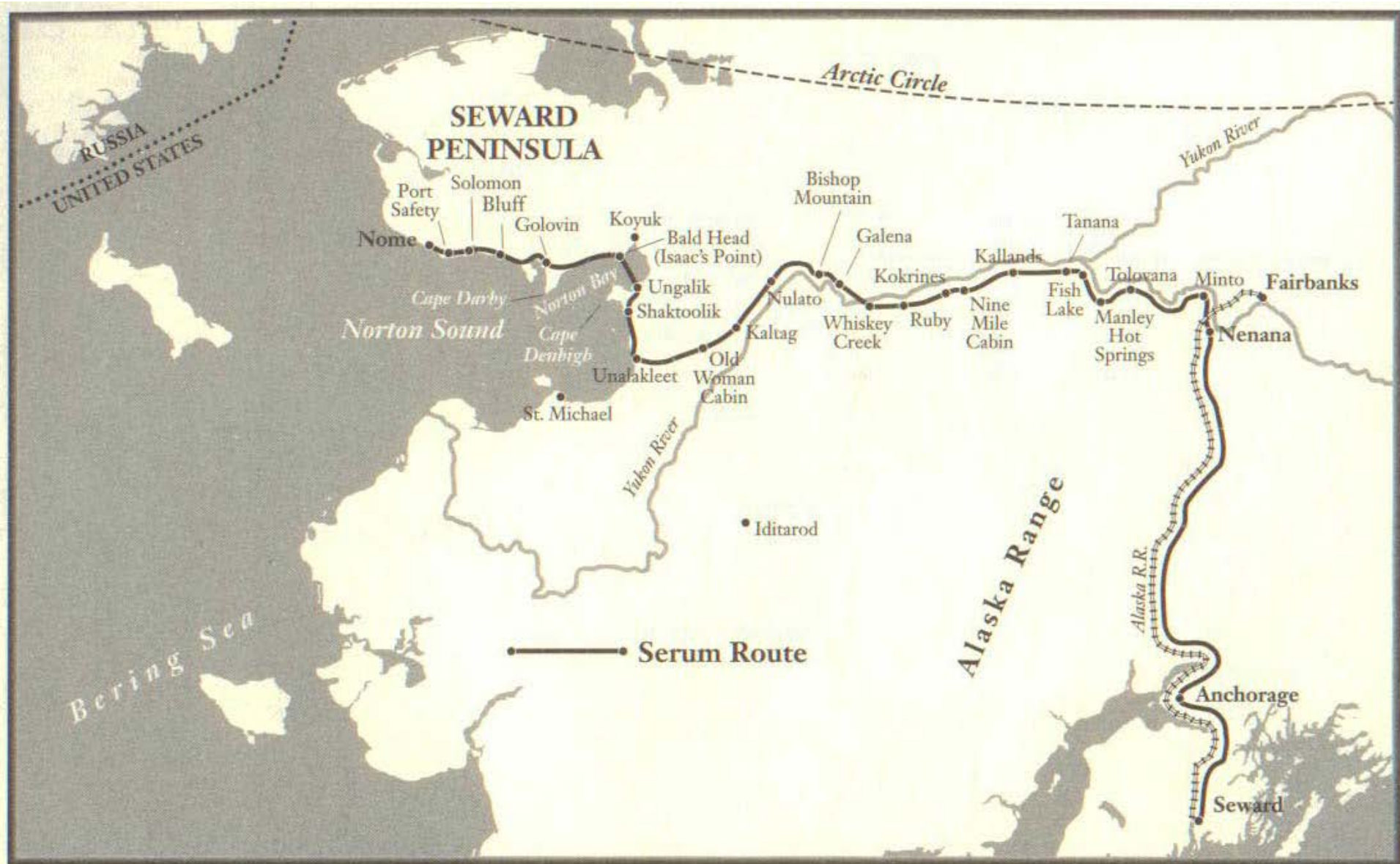
The owner of the roadhouse at Manley Hot Springs had to pour hot water over Kallands' hands to get them off the sled's handlebar when he arrived at 4 PM.



The Great Race of Mercy

- Jan 30 Charlie Evans left Bishop Mountain at - 67 F
- He ran into overflow from the Koyukuk river and had to load his lead dogs
- He tied himself into the traces and led the team on foot for the last twenty miles to Nulato

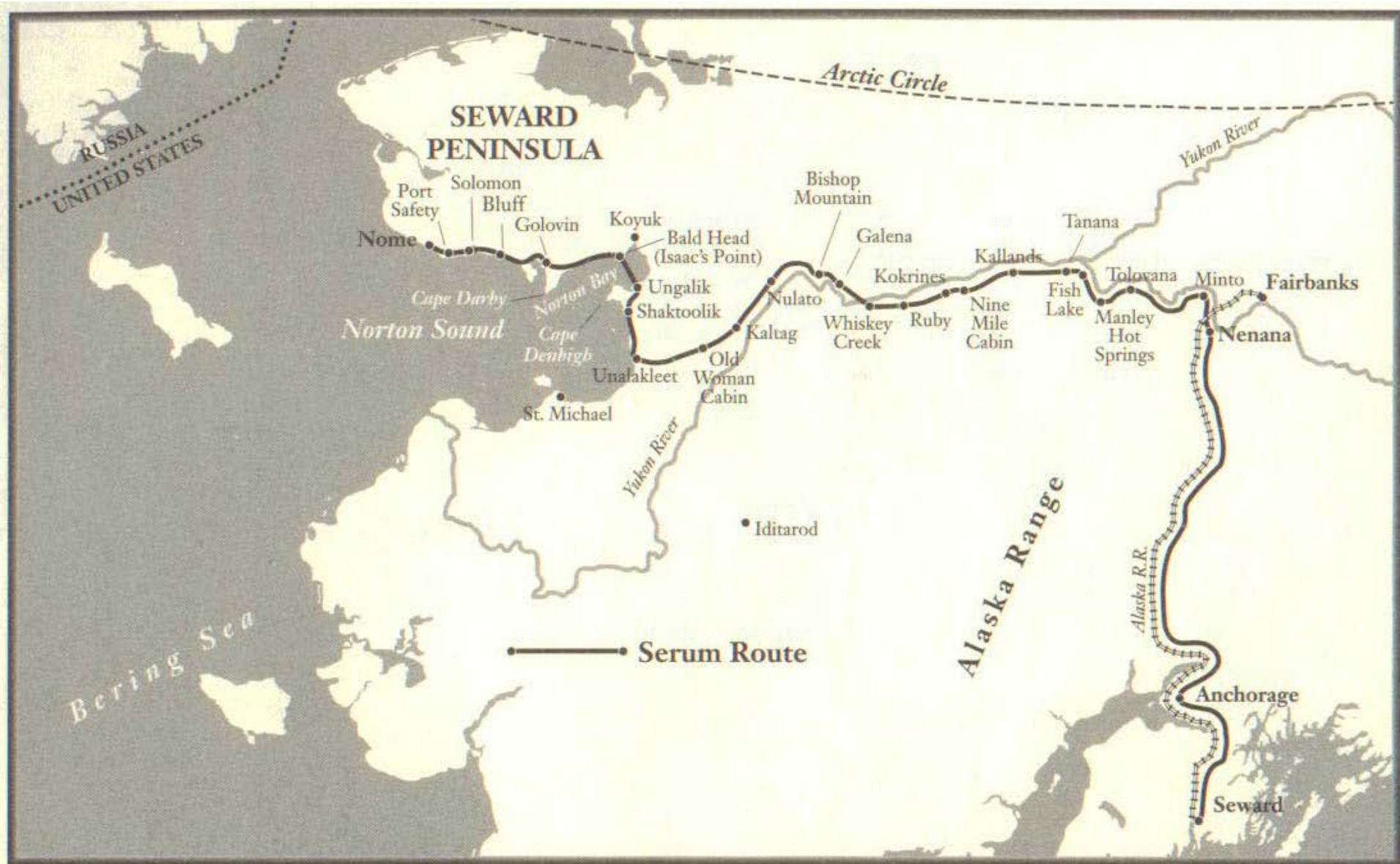




The Great Race of Mercy: Leonhard Seppala and Togo

- Jan 31, after 173 miles at -85 wind chill he met Henry Ivanoff on Norton sound just outside Shaktoolik
- Seppala turned back into the storm and carried the serum 91 miles, across sea ice and over a 5,000 ft peak at -92 F windchill arriving in Golovin at 3 pm
- In under three days they had travelled 264 miles all in a severe blizzard





LAST RELAY DRIVER ARRIVES AT NOME WITH SERUM

Kasson Fights Blizzard on Final Lap With Precious Antitoxin

Six Hundred and Fifty Mile
Mush Across Arctic Wastes
to Save Diphtheria Suffer-
ers Made in 127 1-2 Hours

(For Editorial Comment See Page 5.)
By Associated Press.

NOME, Alaska, Tuesday, Feb. 2.—
Exhausted from two days' loss of sleep and driving a team of dogs sixty miles through a blinding blizzard for seven and one-half hours in order to deliver 300,000 units of diphtheria antitoxin to this town yesterday, Gunnar Kasson was still sleeping early today. He was the last relay driver in the 650-mile dash from Nenana.

A portion of the serum, frozen on its arrival, was thawed out yesterday afternoon and used on patients. Dr. Curtis Welch, government physician, said he could not tell if the antitoxin had deteriorated until the effects were noted. One new diphtheria case was reported yesterday, Mrs. John Winthers being stricken.

Kasson accomplished a feat seldom attained by seasoned mushers of the sub-Arctic. For two days he waited on the trail at Bluff with thirteen dogs, headed by Balto, sagacious canine leader, of the Hammon Consolidated Gold Fields Company, to transfer serum shipped from Anchorage via Nenana, from Olsen's relay team.

Leonard Seppala, undefeated musher of the North, met a relay team at Shaktoolik, east of Norton Sound, and carried the antitoxin to Golofin, on the north shore of Norton Sound, Bering Sea, where Olsen awaited him.

Rohn Reaches Nome.

Despite a temperature of 38 degrees below zero and fanned by a stiff wind, Kasson mushed on. The storm and darkness prevented him from meeting Fred Rohn, who waited at Solomon to make the last short relay dash into Nome. He kept up the pace, however, and reached here at daybreak. Four dogs in his team were badly frozen.

Rohn arrived before noon from Solomon after he learned Kasson had missed him. No word has been received from Seppala. The former Finnish athlete is expected to return slowly, resting at villages to feed his tired dogs.

The blizzard yesterday stopped operation of a telephone line on the route taken by the antitoxin and

(Continued on Page 5, Column 5.)







DEDICATED TO THE INDOMITABLE SPIRIT OF
THE SLED DOGS
THAT RELAYED ANTITOXIN SIX HUNDRED MILES OVER ROUGH ICE
ACROSS TREACHEROUS WATERS THROUGH ARCTIC BEZZARDS FROM
NENANA TO THE RELIEF OF STRICKEN NOME IN THE
WINTER OF 1925.

ENDURANCE FIDELITY INTELLIGENCE

Start	Musher	Leg	Distance
January 27	"Wild" Bill Shannon	Nenana to Tolovana	52 mi (84 km)
January 28	Edgar Kallands	Tolovana to Manley Hot Springs	31 mi (50 km)
	Dan Green	Manley Hot Springs to Fish Lake	28 mi (45 km)
	Johnny Folger	Fish Lake to Tanana	26 mi (42 km)
January 29	Sam Joseph	Tanana to Kallands	34 mi (55 km)
	Titus Nikolai	Kallands to Nine Mile Cabin	24 mi (39 km)
	Dan Corning	Nine Mile Cabin to Kokrines	30 mi (48 km)
	Harry Pitka	Kokrines to Ruby	30 mi (48 km)
	Bill McCarty	Ruby to Whiskey Creek	28 mi (45 km)
	Edgar Nollner	Whiskey Creek to Galena	24 mi (39 km)
January 30	George Nollner	Galena to Bishop Mountain	18 mi (29 km)
	Charlie Evans	Bishop Mountain to Nulato	30 mi (48 km)
	Tommy Patsy	Nulato to Kaltag	36 mi (58 km)
	Jackscrew	Kaltag to Old Woman Shelter	40 mi (64 km)
	Victor Anagick	Old Woman Shelter to Unalakleet	34 mi (55 km)
January 31	Myles Gonangnan	Unalakleet to Shaktoolik	40 mi (64 km)
	Henry Ivanoff	Shaktoolik to just outside Shaktoolik	0 mi (0 km)
	Leonhard Seppala	Just outside Shaktoolik to Golovin	91 mi (146 km)
February 1	Charlie Olson	Golovin to Bluff	25 mi (40 km)
	Gunnar Kaasen	Bluff to Nome	53 mi (85 km)

The Great Race of Mercy

- 20 drivers
- 150 dogs
- 674 miles
- 5 days, 7 hours 30 minutes (5.2 mph)
- Average winning speed for Iditarod today is 4.2 mph
- 7 deaths (probably underestimated)
- 28 active cases (antitoxin could treat 30)

NATIONAL BESTSELLER

The HEROIC STORY
of DOGS and MEN
in a RACE Against
an EPIDEMIC



THE CRUELEST MILES

"A stirring tale
of survival, thanks to
man's best friend."

—Seattle Times

GAY SALISBURY
AND LANEY SALISBURY



The Era of the Sled Dog

1880-1960

- Sled dogs were the main means of transportation in Alaska and Northern Canada
- Advent of snow machines in 1960s saw massive decline in sled dogs in rural areas
- Sled dog racing gained in popularity 1960-present
- Dogs have evolved from draft animals that sometimes race to specialized racing dogs



[Hinchcliff KW](#), [Reinhart GA](#), [Burr JR](#), [Schreier CJ](#), [Swenson RA](#).

Metabolizable energy intake and sustained energy expenditure of Alaskan sled dogs during heavy exertion in the cold.

Am J Vet Res. 1997 Dec;58(12):1457-62.



Energy Expenditure

- DLW technique
- 20 kg dogs running in the Copper Basin 300
 - 150 miles a day
 - -30 to -50 F
- 11,000 kcal per dog per day
- 8X the amount used by a Tour de France cyclist on a kcal/BW basis

11,000 kcal = 20 big macs!

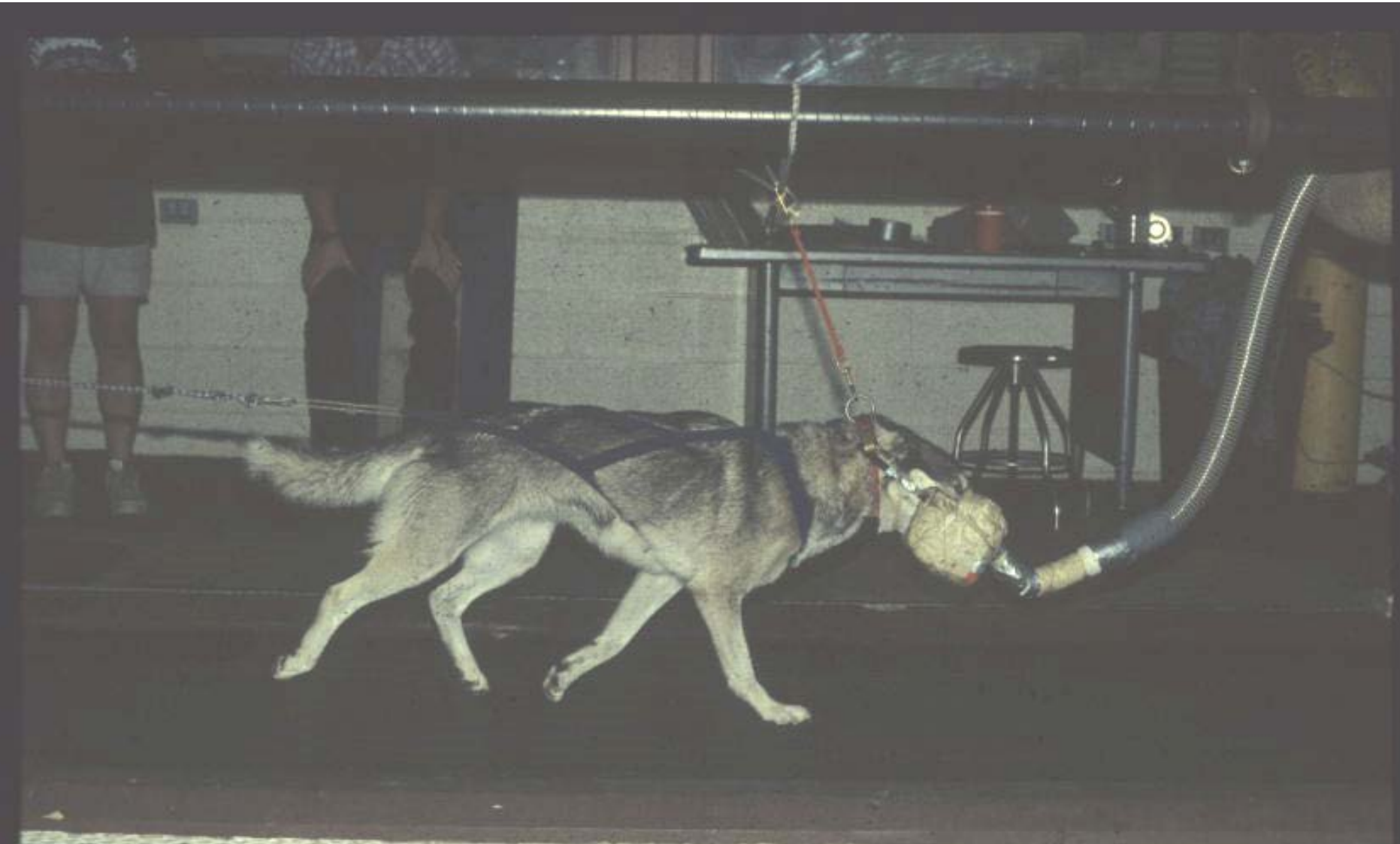




Bjørn Dæhlie:

VO₂ max 93 ml/kg/min

Reynolds AJ, Hoppler H, Reinhart GA, Roberts T, Simmerman DA, Weyand P, Frank DA, And CR Taylor. "Sled Dog Endurance: A Result of High Fat Diet or Selective Breeding? #5775 F.A.S.E.B. Atlanta, April 1995.





Elite sprint sled dogs:
 $\text{VO}_2 \text{ max } 240 \text{ ml/kg/min}$



A word cloud featuring the word 'sleddogs' in large red letters at the center. Other prominent words include 'subsistence' in purple, 'circumpolar' in brown, 'adaptation' in red, and 'sentinel' in dark red. Smaller words in various colors include 'metabolism', 'biomedical', 'population', 'model', 'research', 'cardiovascular', 'immune', 'diet', 'contaminants', 'worldwide', 'health', 'homogenous', 'Alaska', 'polar', 'T3', 'exercise', 'tradition', and 'diurnal'.

metabolism
sentinel
biomedical
population
model
tradition
exercise
polar
T3
Alaska
homogenous
diurnal
subsistence
research
cardiovascular
immune
circumpolar
sleddogs
adaptation
health
diet
contaminants
worldwide





17 10:23AM

GOOD START[®]

S U P R E M E
INFANT FORMULA WITH IRON

Soy

DHA & ARA

Nutrients Found in Breastmilk

NET WT 12.9g



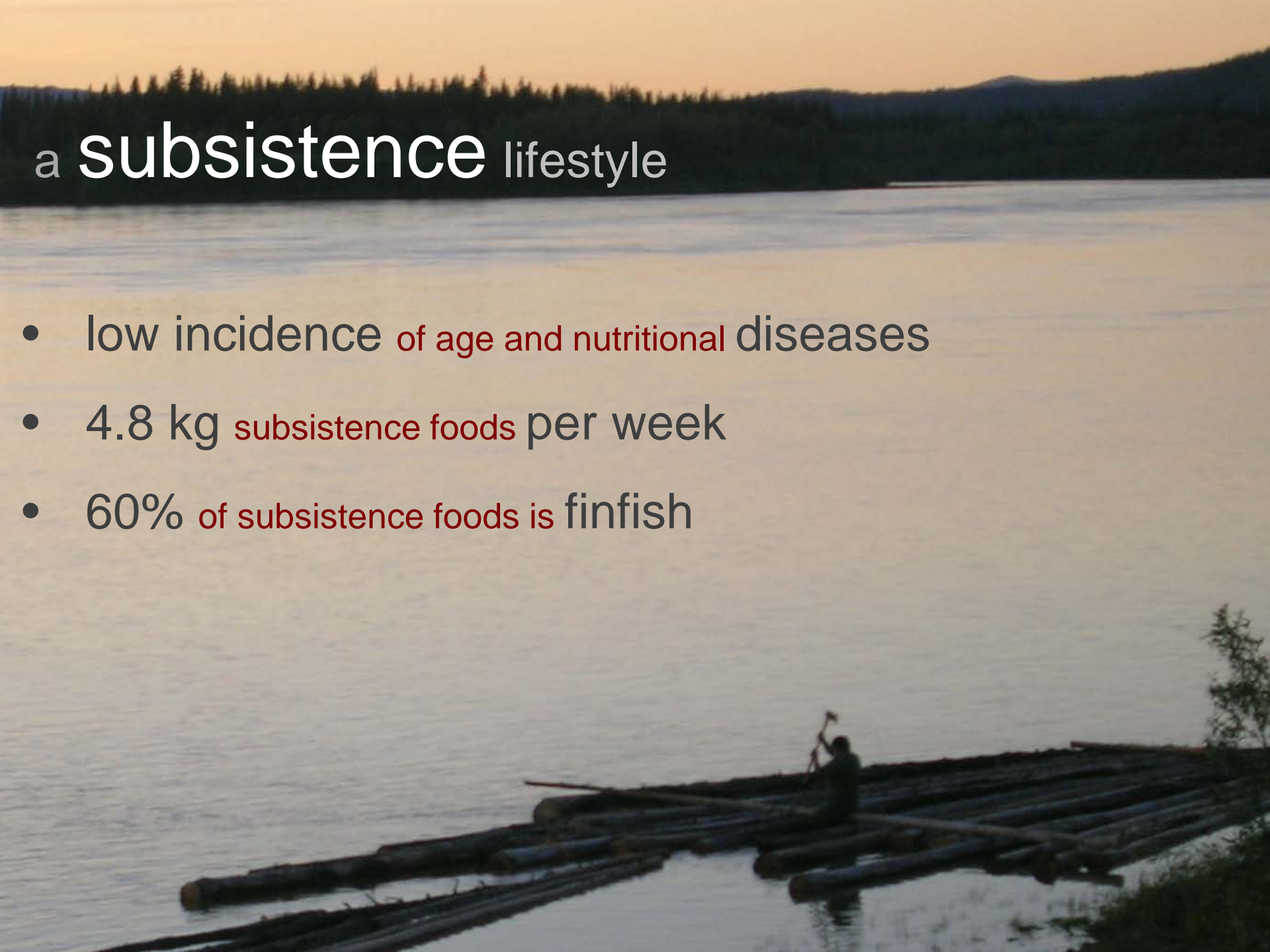
Mercury levels in salmon-fed sled dogs; the potential **risks** and **benefits** of subsistence diets

Kriya Dunlap
University of Alaska Fairbanks



a subsistence lifestyle

- low incidence of age and nutritional diseases
- 4.8 kg subsistence foods per week
- 60% of subsistence foods is finfish





What is the **mercury exposure** in
salmon-fed sled dogs at different location along the
Yukon River?

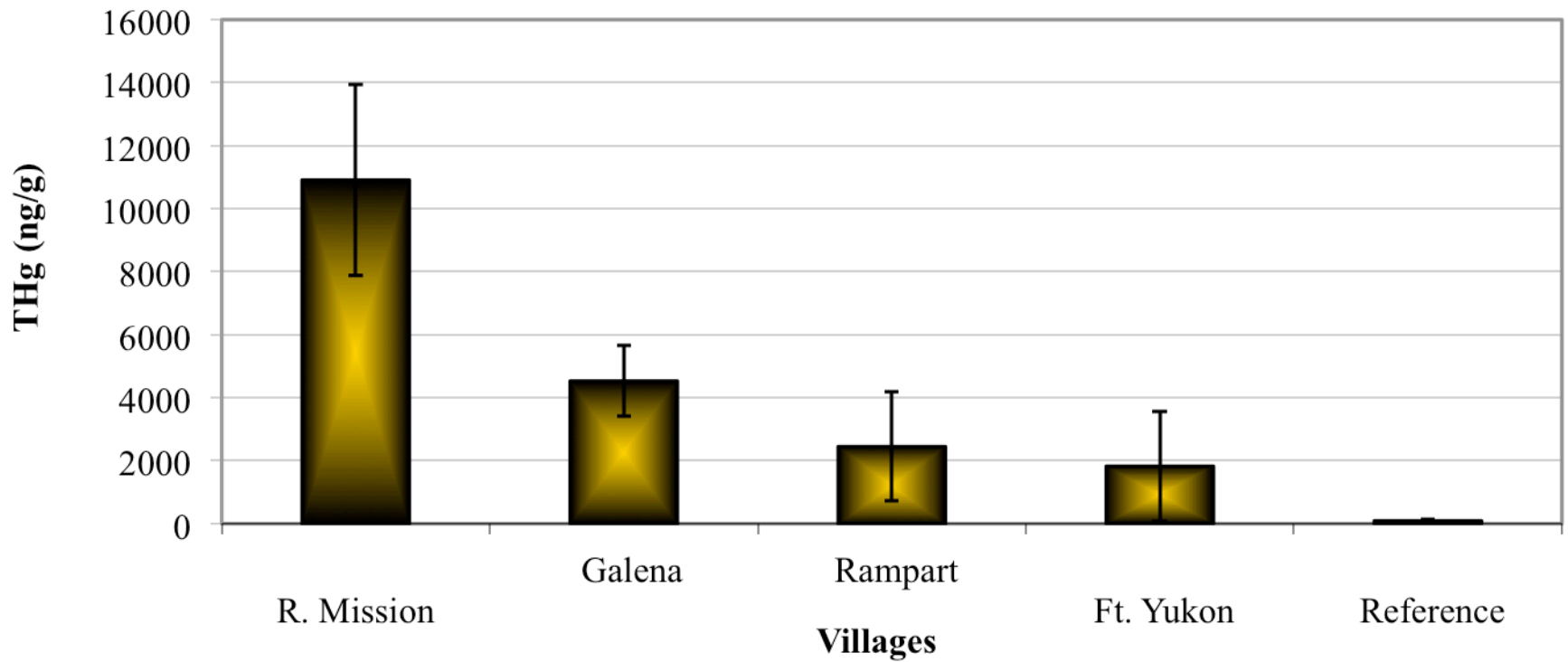
How are **lipid profiles** altered?

What are the **health
implications?**

Why the Yukon River?

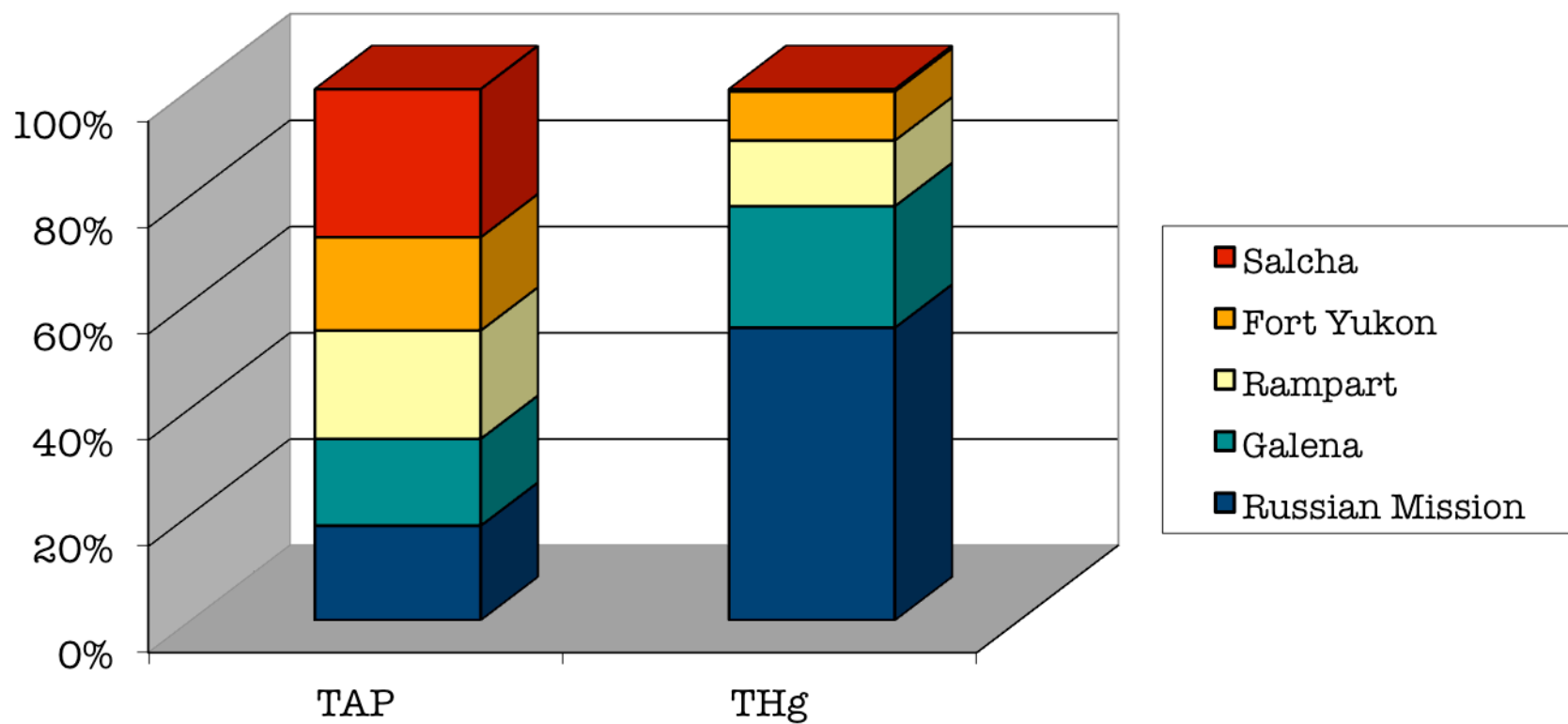


Total mercury concentrations in Yukon River sled dogs



Sci Total Environ.

Inverse relationship between mercury and total antioxidants



Health Implications of wild AK salmon?

- WHO Upper Allowable **Threshold of 50 ppm** (50,000 ng/g)
- EPA suggests a **maximum consumption of 226 g** of fish per week for a 70 kg person
- Reported adverse **effects as low as 300 ng/g**
- **Russian Mission sled dogs** have some of the **highest** reported mercury concentrations of any Alaskan mammal



Are sled dogs that are exposed to extremes of daylight and temperature more susceptible to SAD?



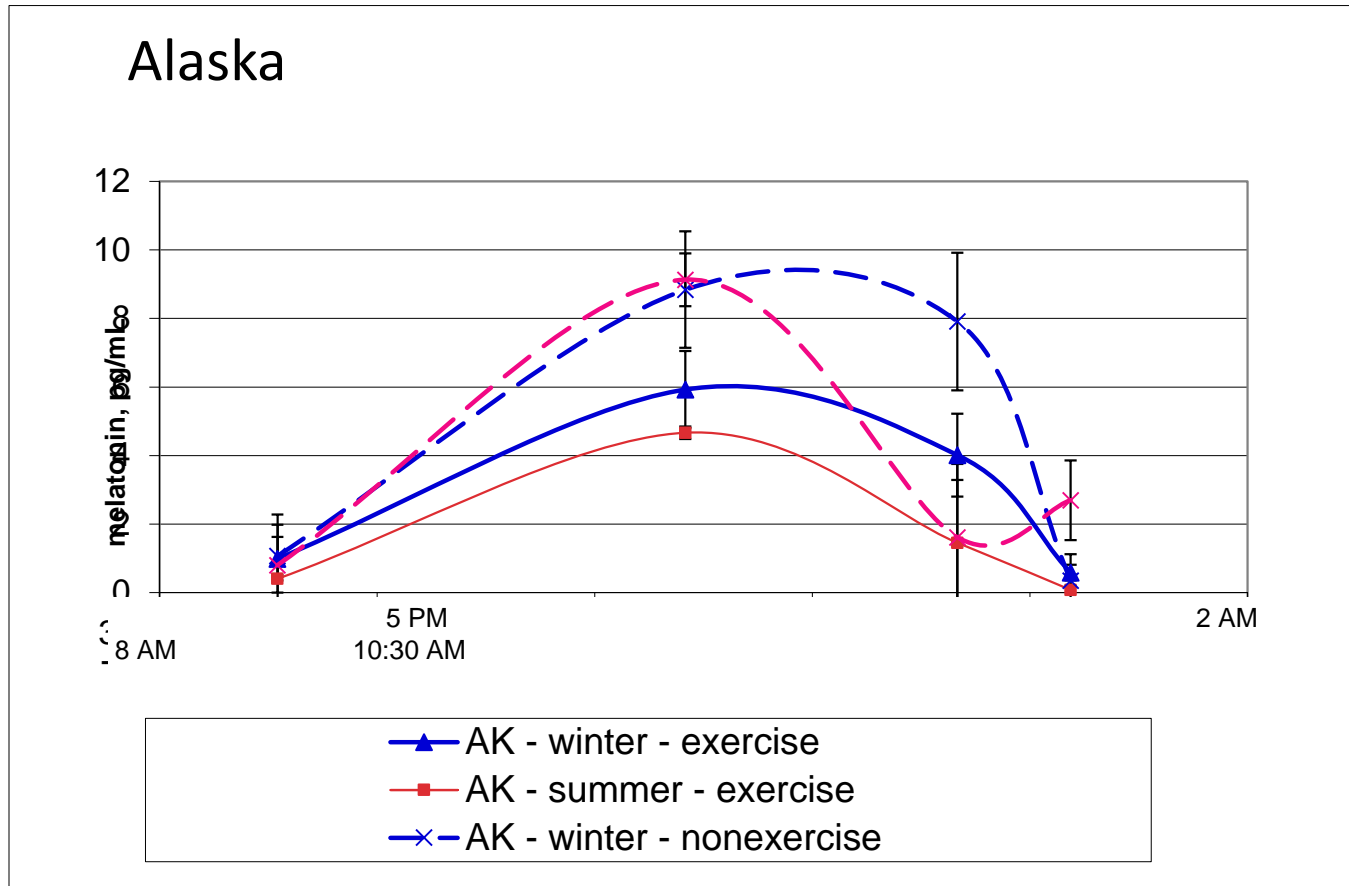
<http://tackyraccoons.com/tag/dogs/>

- Season
- Latitude
- Time of Day
- Conditioning

Melatonin

- Sled Dogs
 - Exposed to extremes of light, temperature, and exercise
 - Fairbanks, AK
 - Summer 21 hours daylight, up to 100 F
 - Winter 3 hours daylight, down to -67 F

Melatonin in sled dogs



Melatonin: Summary

- Conditioning decreased melatonin secretion in winter
- Similar effects have now been observed in SAD patients

Forest Fires in Alaska



Sled Dogs as Sentinels

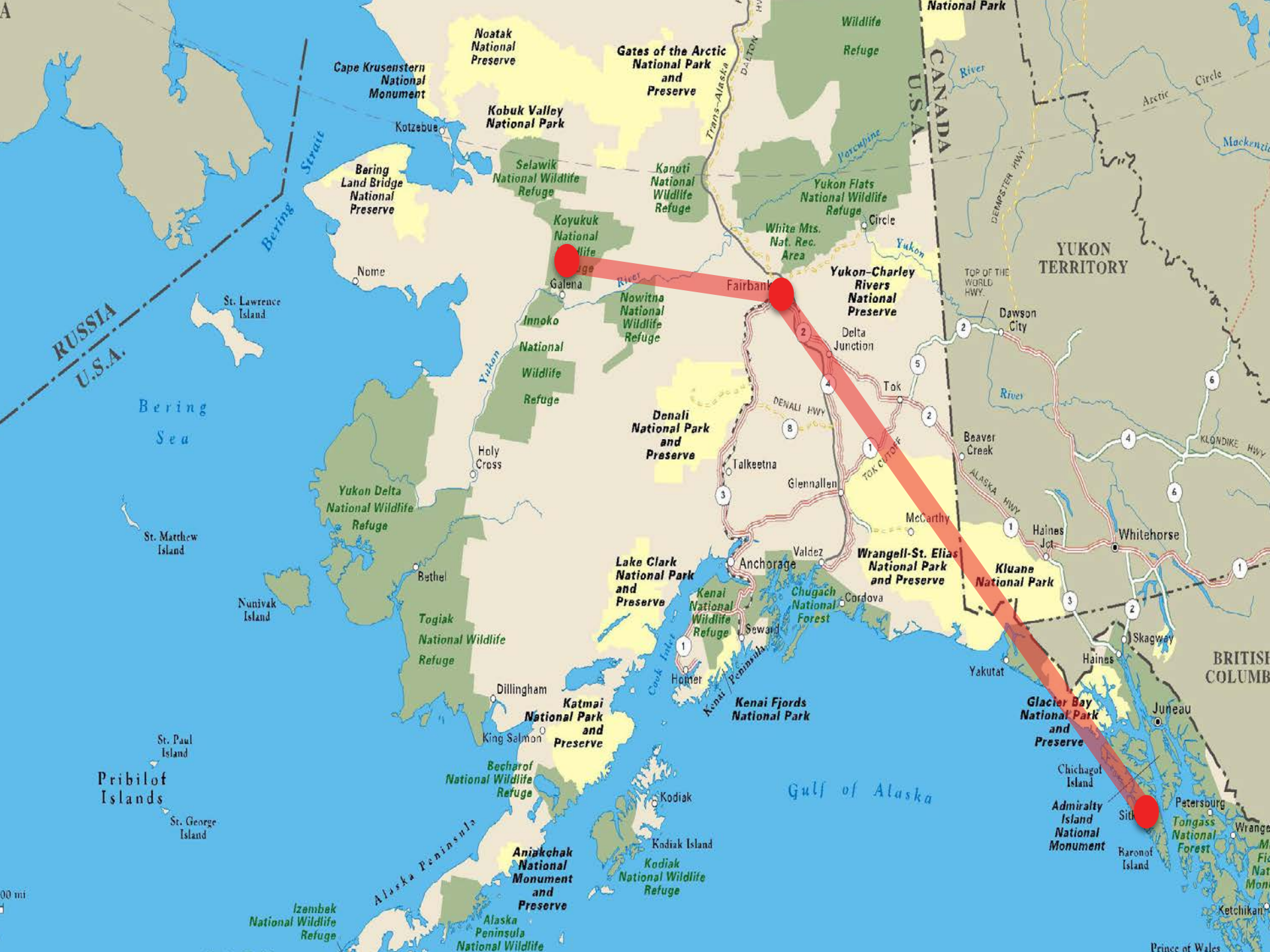
- Hulte, Olsen, and Reynolds 2006
- Summer 2004, NO₂ measured in trained and untrained dogs in am and pm on days of exercise and rest.
- Baseline measurements and measurements on days of rest the same for trained- exercised dogs and untrained non-exercised dogs
- Exercise associated with a 2 fold increase in NO₂

Plasma NOx uM

time	exercise	control	P value exercise = control
7 am	2.5 (2.4 - 3.2)	24.7 (7.2 – 28.5)	P<0.01
7pm	7.9 (6.2 – 9.7)	32 (15.8 – 40)	P<0.01













Willy Keys

Edwin Simon

Henry Kokrine

Lee Simon

Lucian Sam

Larry Westlake

Willy Keys

Henry Kokrine

Lee Simon

George Attla

Beattus Moses

George Yatlin

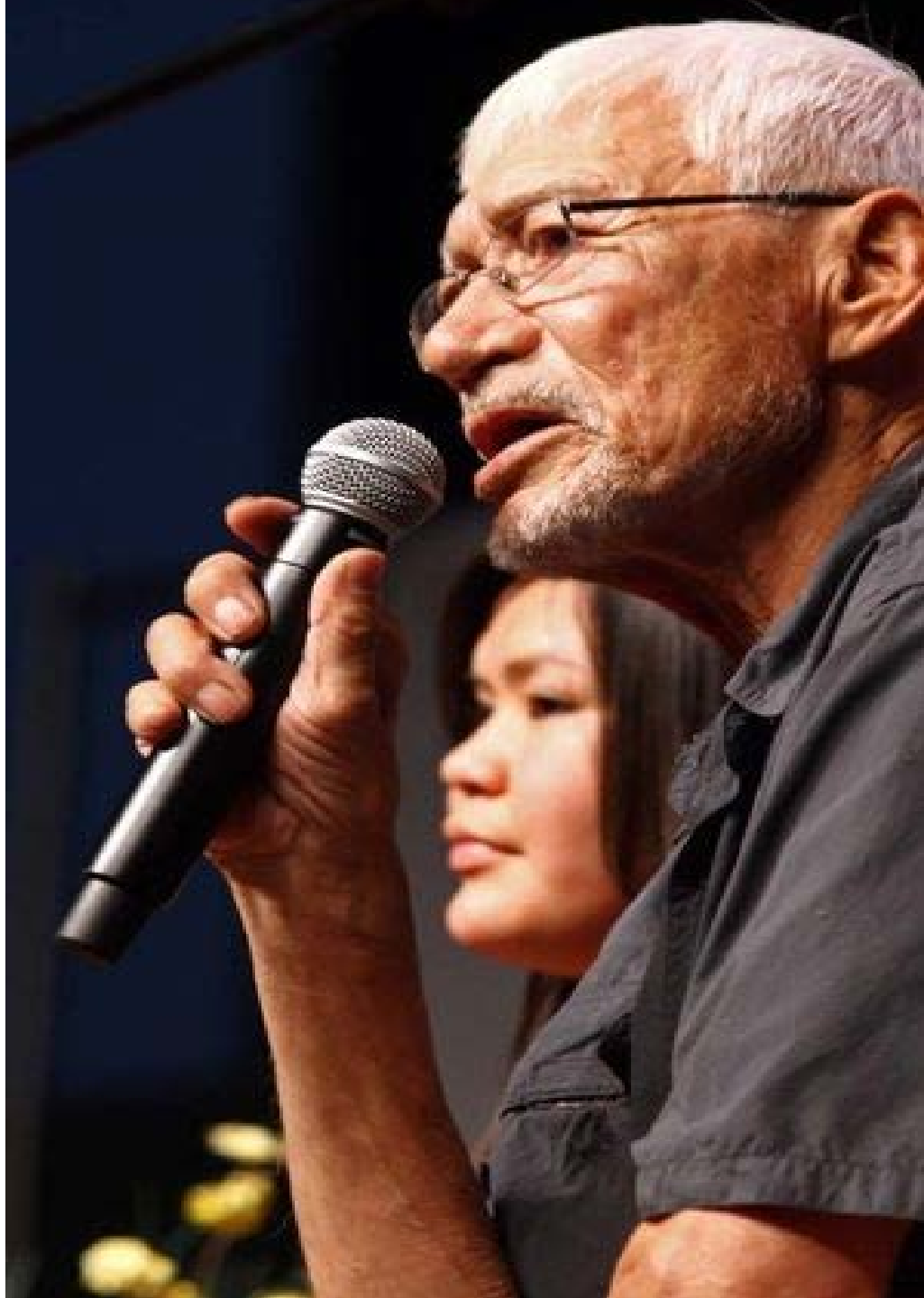














Home of the HUSLIA HUSLERS
JIMMY HUNTINGTON SCHOOL



Design by Anthony Sam

Junior Championship
Sled Dog Races






















A group of people are gathered in a cluttered room, possibly a workshop or a storage area. In the foreground, a black dog with white markings on its chest and paws is wearing a blue and white harness. A woman in a light-colored sweater is kneeling and interacting with the dog. Behind her, an older man with glasses and a grey hoodie is also looking at the dog. To the right, two other women are sitting and watching. The room is filled with various items, including boxes, papers, and a large black bag. The text "Dogs accept you for who you are" is overlaid on the image in white, bold, sans-serif font.

“Dogs accept you
for who you are”











AD OUTDOORS
A. T. M. S.



Huslia has become a role model for the entire state of Alaska:

All 9 schools in the Yukon-Koyukuk school district and Five other school districts in the interior and along the west coast are working to start a similar program.





Dogs hold together
the web of
traditional culture
in a modern World.

