Mining:
Global perspective,
Alaskan experience

A presentation by
Karen Matthias
March 17, 2011

cap
Council of
Alaska Producers

1. Relevance of mining to our lives

2. Social and environmental responsibility

3. Global financial realities

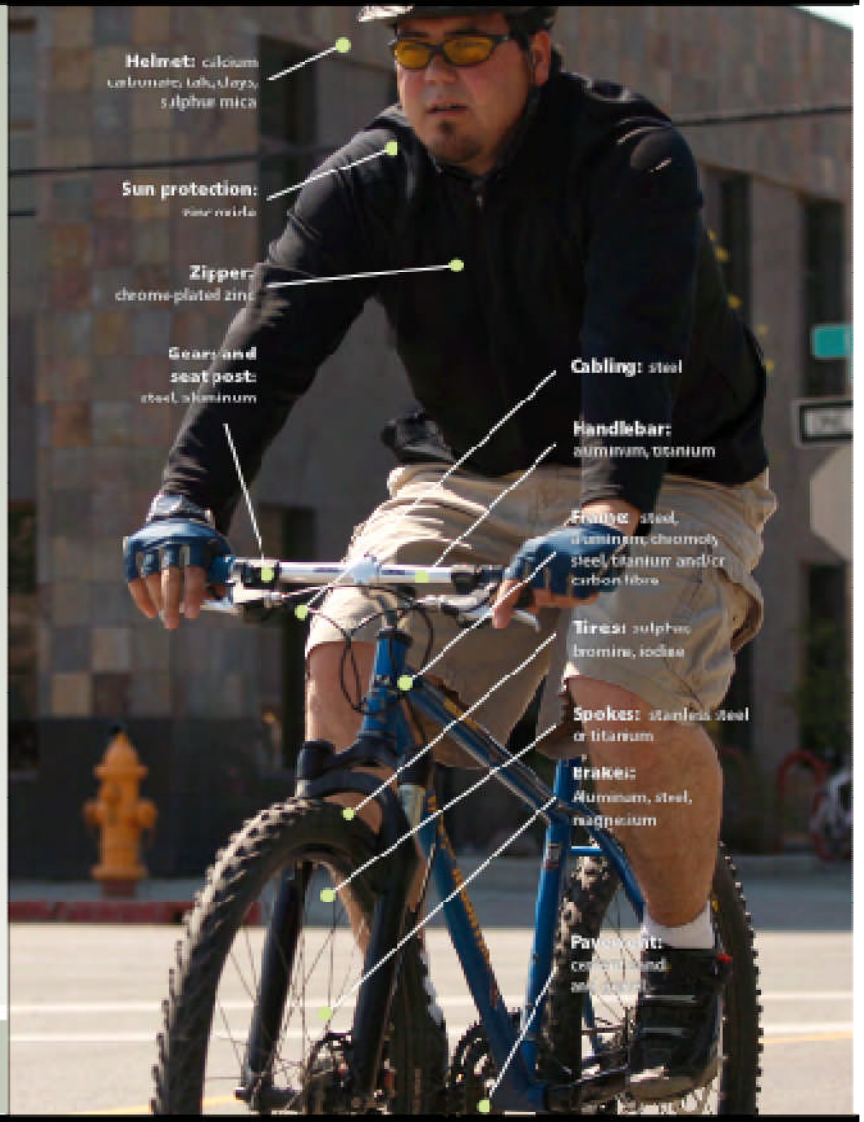
4. Why mining works for Alaska

cap
Council of
Alaska Producers

THE BIRTH OF BIKING

aluminum
bromine
Calcium
carbon
cement
chromium
clay
gravel
iodine
magnesium
mica
molybdenum
sand
steel
sulphur
talc
titanium
zinc

Did you know that without mining the bicycle would never have been invented? In fact, without mining, none of the everyday products we take for granted would exist. If you look beneath the surface, you'll find that mining has something to do with everything.



tap
Council of Alaska Producers

www.alaskaproducers.org

Minerals and metals underpin the renewable energy economy

- 5 tons of copper in a 3MW wind turbine
- Hybrids require almost twice as much copper as regular vehicles
- Rechargeable batteries, solar panels, catalytic converters all need minerals

Council of Alaska Producers

Social and environmental responsibility

- Health and safety of workers and neighbors
- Environmental sustainability

- Avoiding impact with traditional land use

cap
Council of
Alaska Producers

Recognition of mine safety and environmental management

- Hecla Greens Creek Mine: MSHA Sentinel of Safety Award 1997 and 2003
- Kensington Gold Mine: ISMSP Safety Award 2008
- Fort Knox Mine: 2008 Tileston Award
- Fort Knox Mine: 4 million man hours with no lost time injuries (Jan 2011)

cap
Council of
Alaska Producers

No single permit to mine; many permits and authorizations

State

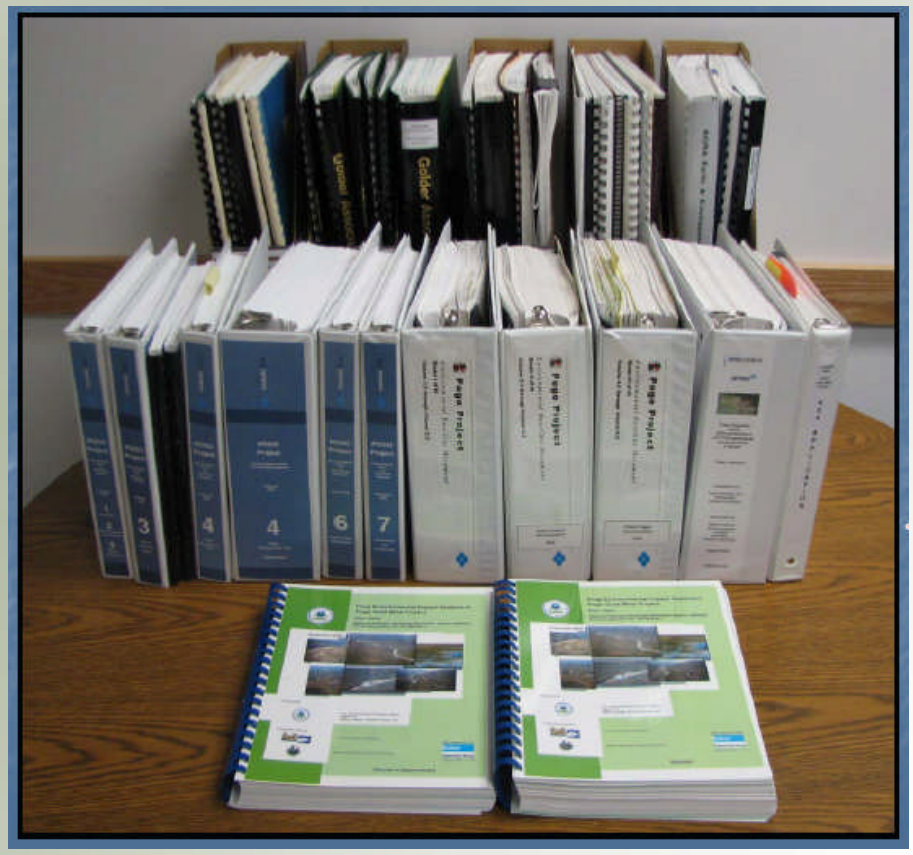
- Plan of Operations (DNR)
- Reclamation and Bonding (DNR)
- Waste Management Permits and Bonding (DEC)
- Certification of NPDES and ACOE Permits (DEC)
- Sewage Treatment Systems Approval (DEC)
- Air quality permits (DEC)
- Fish Habitat and Fishway Permits (DFG)
- Water Rights (DNR)
- Tidelands Leases (DNR)
- Dam Safety Certification (DNR)
- Cultural Resource Protection (DNR)
- Monitoring Plans: Surface, Groundwater, Wildlife (DNR/DEC)
- Coastal Zone Consistency Determination (DNR)

Federal

- US EPA Section 402 NPDES Water Discharge Permit
- US EPA Air Quality Review
- US EPA Safe Drinking Water Act (UIC Permit)
- US ACOE S.404 Dredge and Fill Permit
- US ACOE S.10 Rivers and Harbors Act
- US ACOE S.106 Historical and Cultural Resources Protection
- NMFS Threatened and Endangered Species Act Consultation
- NMFS Marine Mammal Protection Act
- NMFS Essential Fish Habitat
- NMFS Fish & Wildlife Coordination Act
- US FWS Bald Eagle Protection Act Clearance
- US FWS Migratory Bird Protection
- US FWS Fish & Wildlife Coordination Act

cap
Council of
Alaska Producers

Alaska has the World's Most Stringent Regulatory System



Pogo Mine's Permitting Documents
and Environmental Impact Statement

cap
Council of
Alaska Producers

Mining works for the environment

- Minimize and mitigate environmental impact
- Minimize waste, conserve, and reuse
- Continuous environmental process improvement
- Stakeholder engagement and agency cooperation
- Closure and reclamation plans

cap
Council of
Alaska Producers

Reclamation and Closure

- Alaska law (AS 27.19) requires that a mine site must be returned to a stable condition compatible with the post-mining land use
- Reclamation plan requires DNR approval
- Financial assurance

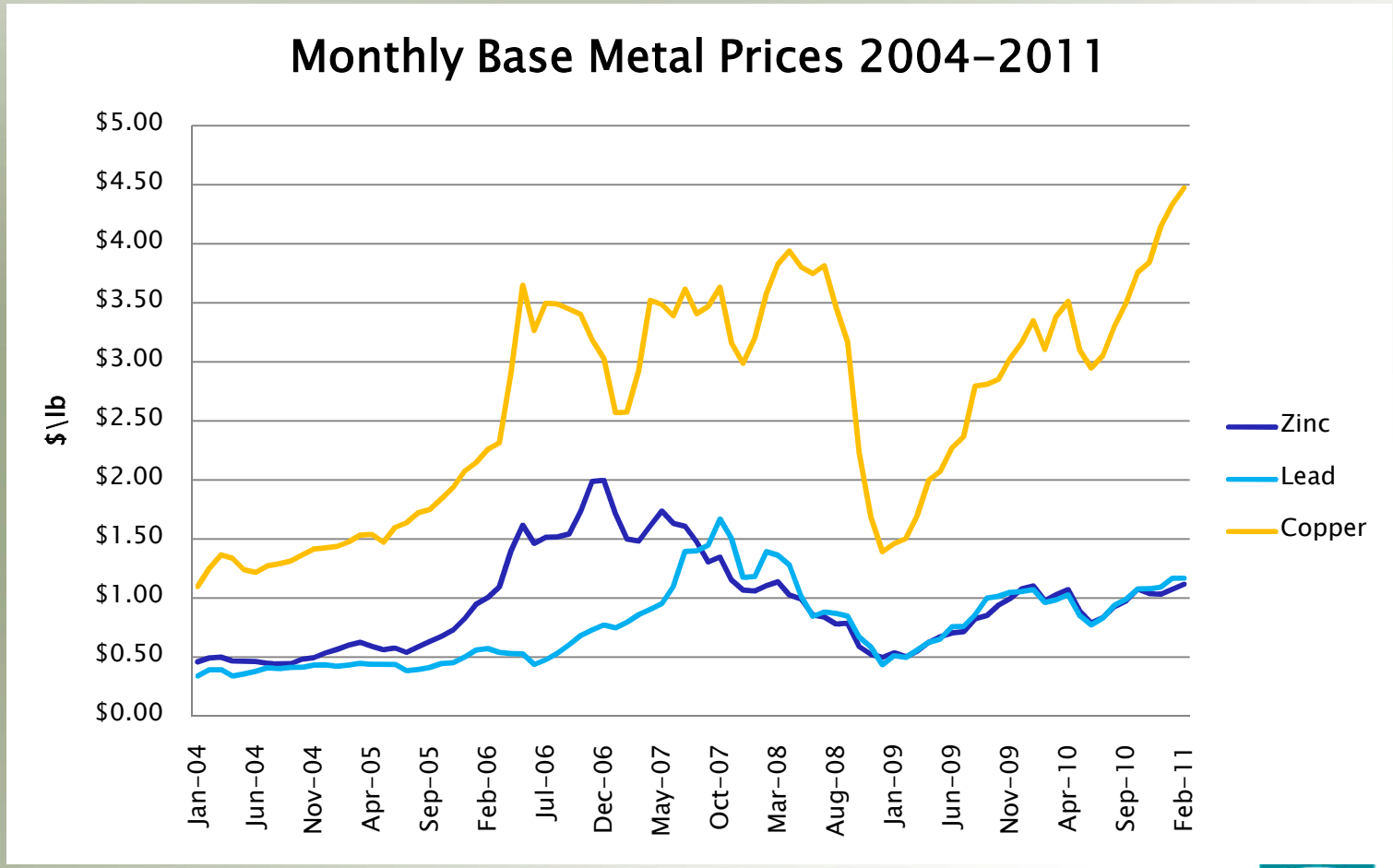
Council of Alaska Producers

Global financial realities

- Reserves
- Prices
- Financing
- Exploration
- Capital investment

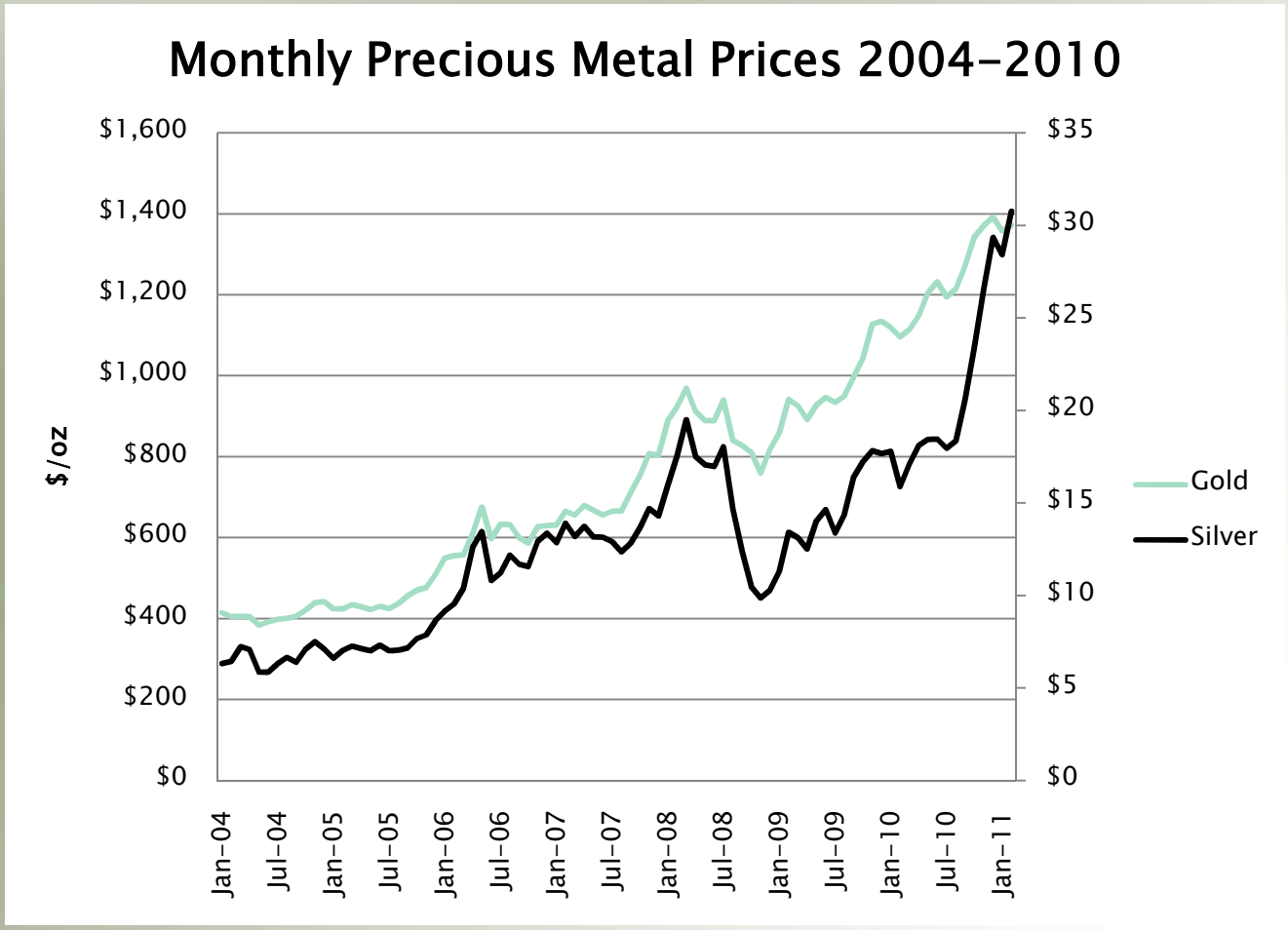
Council of Alaska Producers

Volatility of Commodity Prices



cap
Council of
Alaska Producers

Volatility of Commodity Prices



cap
Council of
Alaska Producers

Financing – Canada's lead position

- 59% (1434) of world's public mining companies listed on TSX and TSX-V
- 22 TSX-listed companies have market capitalization >$1 billion
- 2005-2009 TSX handled 82% of public mining financings, 30% of global value
- TSX-listed companies had almost 9,000 mineral projects in process in 2010

cap
Council of
Alaska Producers

Canada is also a major mining country

Global rankings:

- 1st: uranium, potash
- 2nd: nickel
- 3rd: titanium, aluminum
- 5th: diamonds, zinc, molybdenum
- Minerals make up 19% of Canada's exports
- 58% of Canada's metal exports came to U.S.
- U.S. mining supply sector: 5,526 companies

cap
Council of
Alaska Producers

Exploration spending

- $7.3 billion – worldwide exploration (2009)
- 16% Canada, 13% Australia, 6% U.S.
- 40% spent by Canadian explorers

Alaska:

- $225 million (2010), $160 million (2009)

cap
Council of
Alaska Producers

High risk, high return...or no return

Alaska:

- More than $2.3 billion spent on exploration since 1981
- 2010: 50 projects, of which 24 spent more than $1million
- 5 large hard rock mines in operation

Council of Alaska Producers

And these are the success stories

Mine	Discovered	First Production
Greens Creek	1973	1989
Red Dog	1968	1989
Pogo	1992	2006
Fort Knox*	1984	1996

*Historic district, first modern deposit discovery

cap
Council of
Alaska Producers

Value of outside investment

- Creates new jobs
- Boosts wages
- Increases U.S. exports
- Strengthens U.S. manufacturing and services
- Brings new research, technology, and skills
- Contributes to rising U.S. productivity

www.investinamerica.gov

cap
Council of
Alaska Producers

Mining works for Alaska – 2010

- Six producing mines
- 24 exploration projects >$1M
- 3,500 direct mining jobs
- $95,000 average annual wage
- $13 million in local government revenue
- $58.9 million in state government revenue
- $145.9 million in Alaska Native Corp Payments

cap
Council of
Alaska Producers

Mining Activity in Alaska

Arctic Ocean
Bering Strait
ALASKA
Norton Sound
Yukon River
Yukon River
Tanana River
ALASKA RANGE
Mt. McKinley
Fairbanks
Kuskokwim River
USA
CANADA
ALASKA HIGHWAY
FORGE PARKWAY
RICHARDSON HWY
Cook Inlet
Kenai Peninsula
Anchorage
Copper R.
Prince William Sound
Juneau
Bristol Bay
Alaska Peninsula
Kodiak Island

Red Dog
Rock Creek/ Big Hurrah
Livengood
Fort Knox
Pogo
Nixon Fork
Usibelli
Donlin Creek
Chuitna
Wishbone Hill
Pebble
Kensington
Greens Creek
Niblack

- Community with Mining Industry Employees
- Producing Mine
- Development Project (not in operation)
- Advanced Exploration Project

Mining companies employ Alaska residents from more than 120 Alaska communities, and purchase supplies and services from hundreds of Alaska businesses.

Council of Alaska Producers

Partnering with Alaska Native Corporations

- $145.9 million in royalties paid by Red Dog to NANA; $83.4 million redistributed
- 56% of the 550 year-round jobs at Red Dog filled by NANA shareholders
- 83% of on-site jobs at Donlin filled by Calista shareholders
- Calista anticipates $2 million in royalties for mineral agreements

cap
Council of
Alaska Producers

Red Dog is more than just a mine developing essential minerals; it is a mechanism for hope and catalyst for the northwest Alaska and statewide economy.

www.nana.com/regional/resources/red-dog-mine/

cap
Council of
Alaska Producers

Interested in more?

CAP Speakers Bureau

- Range of speakers available
- Overview of the mining industry in Alaska today and Alaska's mining heritage

www.alaskaproducers.org/speakers-bureau

cap
Council of
Alaska Producers