



***Overview: Mining in NWT & Nunavut
Global Challenges, Regional Solutions***

*To: 2015 PNWER Economic Leadership Forum #5: Mining
By: Tom Hoefer, Executive Director, NWT & Nunavut Chamber of Mines
November 17, 2015*

Thank you very much PNWER for the invitation to speak to you today.

I was asked to provide you with an Overview of the NWT and Nunavut Mining and Exploration Industry, which I'm pleased to do.

And I am pleased too to position that within the theme of your meeting which is "Global Challenges, Regional Solutions".

This is a particularly relevant theme, as I truly believe that, while we may not be able to overcome global market challenges, we certainly can develop Solutions for our own backyards.

Key Messages

- Mining is our economic advantage
- Mining has been and is important to our economies
- We have more opportunities before us
- But, we face challenges
- We are not victims – there are actions we can take



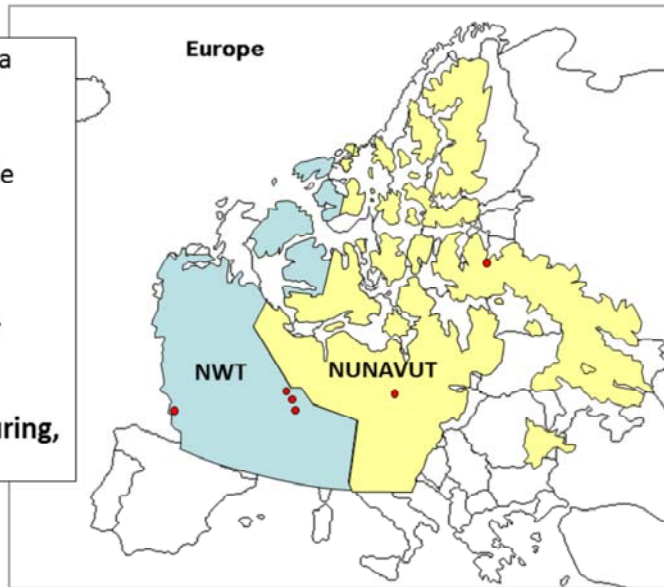
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I want to give you 5 key messages today.

- Mining is our economic advantage
- Mining has been and continues to be important to our economies
- We have more opportunities before us
- But, we face challenges
- We are not victims – and there are actions we can take

Mining is our economic advantage: GEOGRAPHY

- Huge: 1/3 of Canada
- Remote
- Challenging Arctic conditions & climate
- Underdeveloped infrastructure
- Small population
- **Limited options for farming, forestry, ranching, urban growth, manufacturing, etc.**



Area of NWT + Nunavut = Norway, Sweden, Finland, Denmark, France, Germany, Poland, Spain, Portugal, Italy combined.

Mining is our economic advantage for two reasons: geography and geology

If we look at our geography, we see that our region is huge, at 1/3 of Canada. It is nearly the size of western Europe, and it is almost twice the size of Alaska.

It is a remote region, with challenging Arctic conditions (permafrost) and climate.

Our infrastructure is underdeveloped.

And we have a tiny population for our size.

All of this limits our economic opportunities for such activities as farming, ranching, forestry, urban growth, and manufacturing.

History of mining

- 1930s - Eldorado (uranium), Con, Negus, Rycon (gold)
- 1940s - Giant, Thompson-Lundmark (gold)
- 1950s - Rankin (nickel), Discovery (gold)
- 1960s - Pine Point (zinc-lead), Cantung (tungsten)
- 1970s - Nanisivik (zinc)
- 1980s - Polaris (zinc-lead), Lupin, Cullaton Lake (gold)
- 1990s - Colomac (gold), Ekati (diamonds)
- 2000s - Diavik, Snap Lake, Jericho (diamonds)
- 2010s - Meadowbank (gold), Mary River (iron)

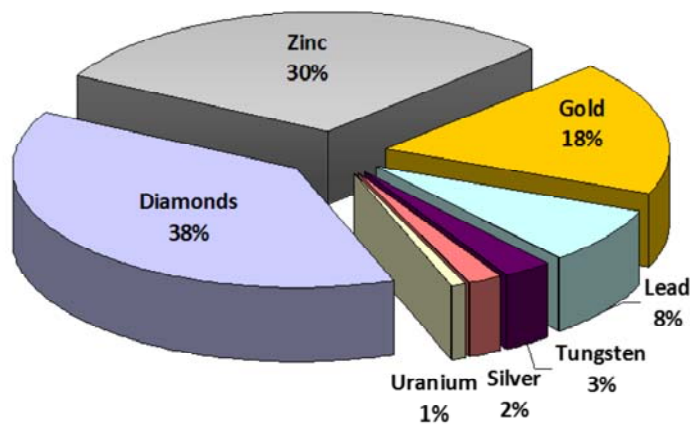


With mining as an economic advantage, it should come as no surprise that we have quite a steady history of mining.

These are not all of the mines we have hosted, but it demonstrates growth we have had in our industry over the decades since it all began in 1932.

Historical mineral production

– Over C\$60 billion since 1932 –



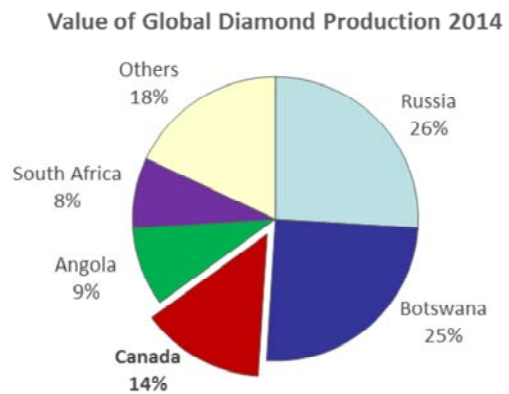
Current & Past Producing Mines: Ekati • Diavik • Snap Lake • Meadowbank • Con • Giant • Lupin • Polaris • Nanisivik • Pine Point • Cantung • Discovery • Rankin Nickel • Rayrock • Outpost Island • Supercrest • Eldorado • Ruth • Terra • Norex • Silver Bay • Colomac • Tundra • Camlaren • Contact Lake • Ptarmigan • Tom • Mon • Cullaton Lake • Salmita • Hope Bay • Negus • Thompson-Lundmark • Rich • El Bonanza • Rycon • Bullmoose

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That mining over the past 80 plus years has produced metals and minerals worth over \$60b. You can see that the bulk of production has been in high value, small sized product like gold and diamonds, but we have also produced bulk commodities like lead and zinc.

Diamonds – we are world leaders today

- The Northwest Territories by itself is the world's 3rd most valuable diamond producer



With some commodities like diamonds, we have become world players.

The NWT by itself is the 3rd most valuable diamond miner in the world and makes Canada so.

It is the 4th largest producer by carats.

Mining has contributed legacy infrastructure

- Communities: Yellowknife, Rankin Inlet
- Roads to Resources, eg: highways to Yellowknife, Pine Point & Ft. Resolution
- Railway (to Hay River & Pine Point)
- All 3 NWT hydro-electric facilities
- Marine shipping & ports
- Microwave communications

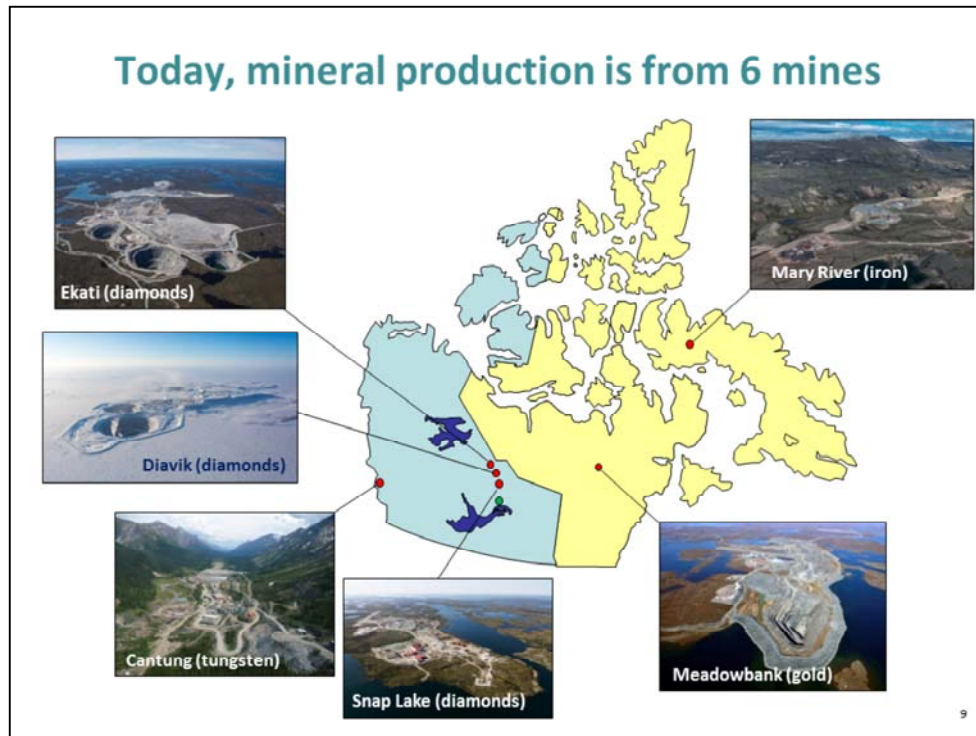


That mining over the years has also helped contribute legacy infrastructure.

Two of our communities reflect their mining history in their crests (crossed picks and shovels, headframes).

Our mines contributed to resource roads, our only railway, all of our hydro power development, marine shipping, and more recently microwave communications into the hinterland.

This is infrastructure that is still serving the north, long after the mines closed.



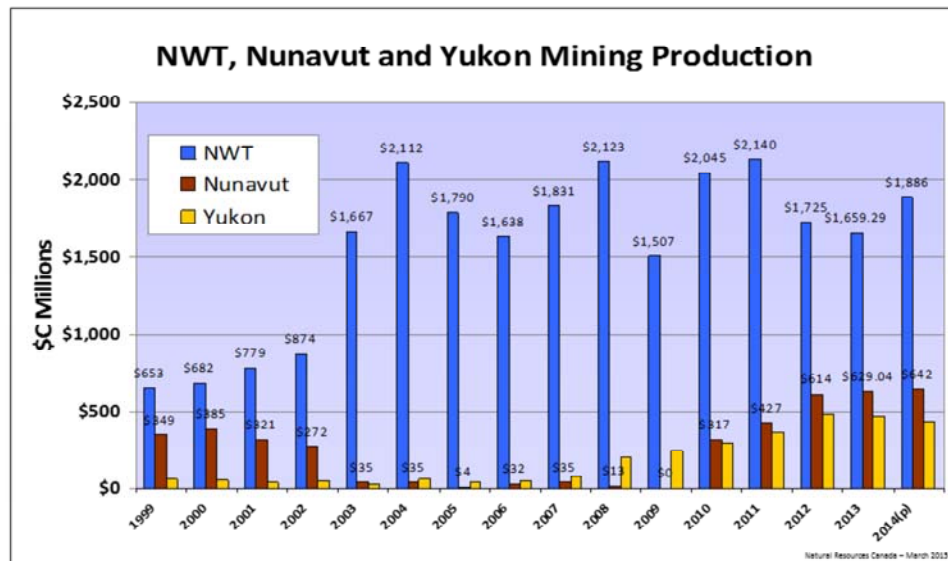
So, where are we today.

Last month we had 6 operating mines.

- 3 diamond mines and a tungsten mine in the NWT, and
- a gold mine and an iron mine in Nunavut.

I say last month, because we just saw our tungsten mine put on care and maintenance because of falling tungsten prices, a reflection of the global challenges we face today.

Our mines create huge value



- NWT: Diamonds are the most significant contributor with lesser tungsten & copper
- NU: Gold is the most significant, with some silver (iron will come in 2015)

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Our mines create huge value, and this chart shows the value of mineral production in the 3 northern territories.

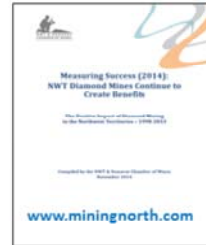
What is immediately obvious is that the NWT in blue outpaces NU and Yukon considerably. This is partly due us having more mines, but also due to us having two world class diamond mines. Note too that the NWT has had many years of this high production value.

If you look at NU in burgundy, you will see that its mining production fell to zero – no mines in 2009. It is one gold mine, Meadowbank, that has rejuvenated NU’s mining industry again. Nunavut’s newest iron mine won’t show up in the production statistics until next year.

Our mines create people & business success

(Note: NWT diamonds example ... Nunavut benefits similar)

- 22,000 person years northern mine employment
 - Today over 1,400 workers, 50% Aboriginal
 - Mining – largest employer of Aboriginal people
- Over \$11 billion in northern business
 - \$5 billion with Aboriginal businesses
- \$100 million plus to communities in IBA payments, scholarships, donations



The value of that mining production translates into significant people and business success.

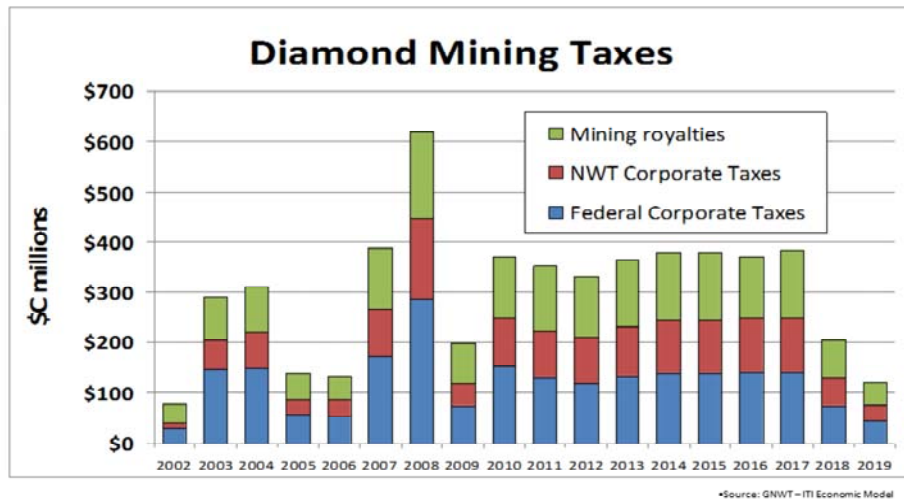
Mining has been a significant game changer with new benefits to Aboriginal northerners and their new companies.

In addition, the mines contribute millions in community payments in Impact Benefit Agreements, scholarships, and donations.

There is more data available if you wish to download this document from our website.

While the details of this slide describes NWT diamond benefits, you should know that mining in Nunavut is creating similarly significant benefits.

Our mines pay significant taxes

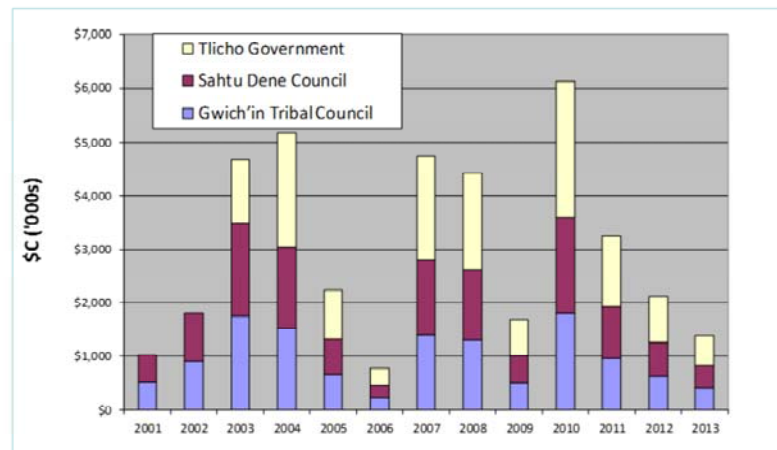


- **AND THAT'S NOT ALL!**
- **ALSO PAYROLL, INCOME, FUEL, & PROPERTY TAXES!**



Besides creating great employment and business success, our mines pay significant taxes. Needless to say, the taxman gets his share, and our mines provide important tax revenues for governments to pay for such things as health care, social services, education, roads, etc.

Aboriginal governments receive royalties, too



- NWT: Over \$39 million in diamond resource royalties have been shared with settled Aboriginal claimants. Even more royalties are now being shared under NWT devolution arrangement.
- Nunavut: Inuit are collecting royalties from their own private lands. They are the largest private land holder in the world.



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And Aboriginal governments are also benefitting through royalties.

In the NWT, government shares royalties with Aboriginal groups under land claims.

In Nunavut, Inuit are collecting royalties now from development of resources on their own privately held lands.

Not only are Aboriginal communities receiving unprecedented employment, training and business benefits, they are now also receiving royalties.

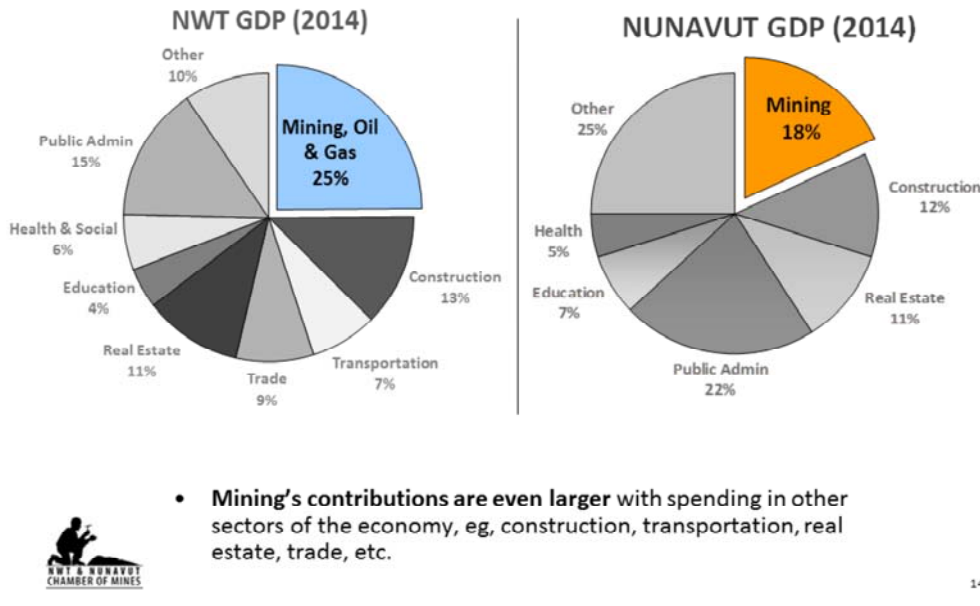
These are the diamond royalties shared under the terms of settled land claims agreements in the NWT.

To date, three NWT groups have received over \$39 million from the Federal Government.

In addition to these, more royalties will flow to NWT Aboriginal groups now under the NWT devolution agreement.

Nunavut is somewhat similar, and Inuit receive royalties through their land claim agreement, similar to the NWT. In addition, Inuit own vast tracts of land, and much of this was purposefully selected for its high mineral potential. So they will receive royalties from mining on their own lands.

Mining – largest private sector contributor

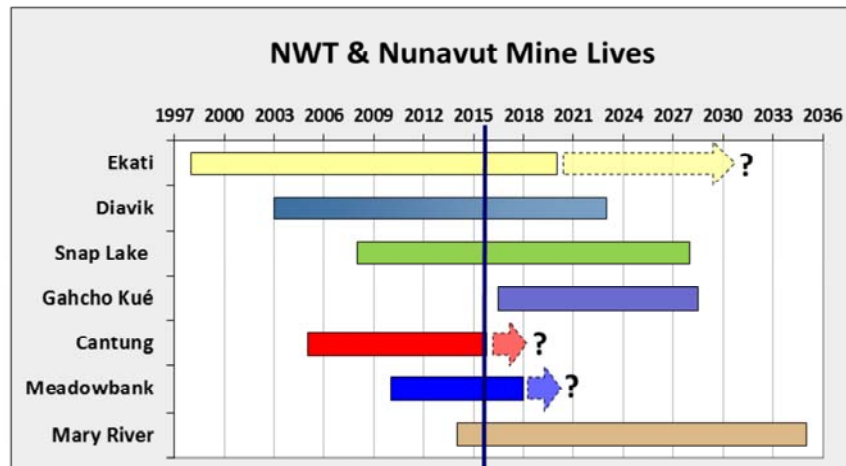


With these kinds of benefits, it is understandable that the minerals industry is the largest private sector contributor to the economy in both territories.

And mining is larger than just the pie slices you see here, when you add in its spending in other sectors like construction, transportation, real estate, and trade, etc.

In the NWT, mining's contributions are closer to 40%, all in.

Mine lives are variable



- Mines don't last forever
- To sustain and grow mining benefits, we must protect and attract investment



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Mines don't last forever, and if we value the benefits they create, it's important that we track mine lives.

This provides some important clues to decision makers on what effects industry will have on our economic future.

Tracking mine lives helps remind us to think about the future, if we want to sustain the benefits of mining.

What you see here is that some of our mines have fixed lives, and they are approaching the end of their mine life.

Some have opportunities for extension.

And some newer ones appear to have long lives ahead of them.

Of course, the markets can affect these mine lives at any time too – negatively or positively.

Real NWT opportunity: Gahcho Kué diamond mine

- World's largest and richest new diamond project
 - Capital cost \$859 million
 - 700 construction workers
 - 400 operations workers
 - Operating costs \$218m annually for 12 year mine life
- On plan and budget for first production H2 2016
 - October 2015, construction over 70% complete
 - De Beers 51%, Mountain Province 49%



Let's look at real opportunities, and by real I mean mines under construction.

In the NWT, we have a fourth diamond mine, Gahcho Kué currently being constructed. Construction is bringing significant investment and jobs, and this will continue when the mine begins producing next year.

Real NWT opportunity : more robust Diavik mine

- US\$350 million to develop A21 deposit over 4 years
- Diamond production planned for late 2018
- **Does not increase mine life of 2023**
 - But makes operation stronger to end of mine
 - Brings construction jobs and business spending



Diavik owners have approved a US\$350 million investment to mine its fourth kimberlite pipe, an orebody called A21, shown at far left, using similar dike technology as shown around the A418 and A154 pipes. Courtesy Diavik Diamond Mines Inc.

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Our Diavik mine is also spending money, preparing a fourth ore body for mining.

Adding the A21 deposit into the mine plan will not add any mine life – which is still 2023, but it will allow the mine to be more robust to the end of its life.

That will be good for workers and businesses, if the mine can produce at closer to its capacity until the end of mine life.

Real NU opportunity: Hope Bay gold mine

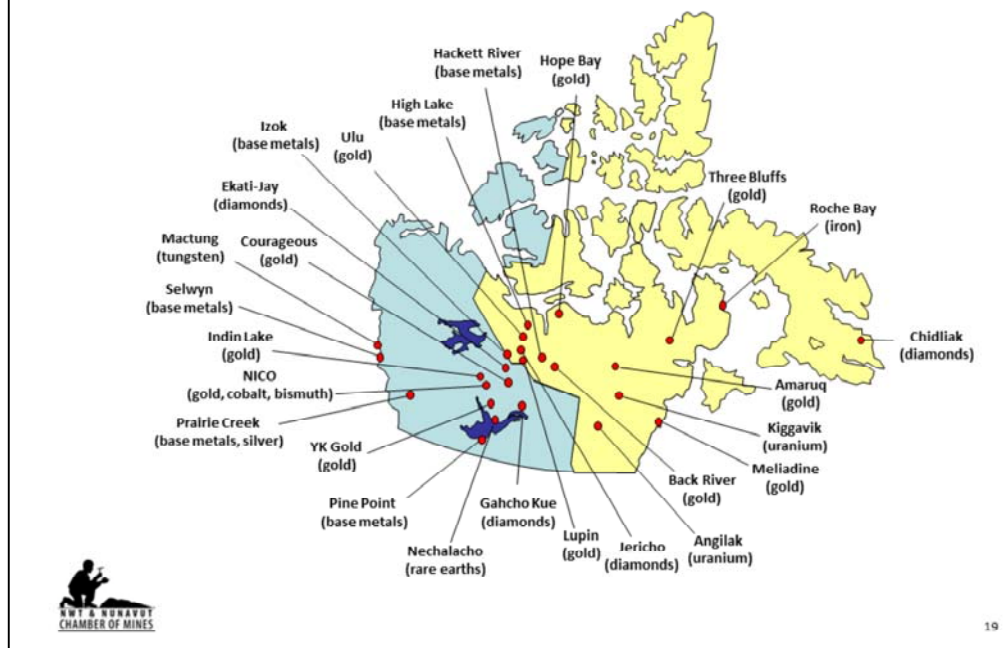
- Construction underway
- Production from first of 3 deposits in H2 2016
- TMAC Resources



In Nunavut, north of Yellowknife, TMAC Resources is constructing Nunavut's second gold mine, called Hope Bay.

Production is expected in the second half of next year.

Potential Opportunities – advanced deposits



There are a great many other promising projects. Promising because they are either in the approval processes, undergoing feasibility studies, have already been approved, or have outlined significant deposits. But they are not yet in a position to construct a mine yet for a variety of reasons.

The Optimist's View of these just a couple of years ago was that we would see:

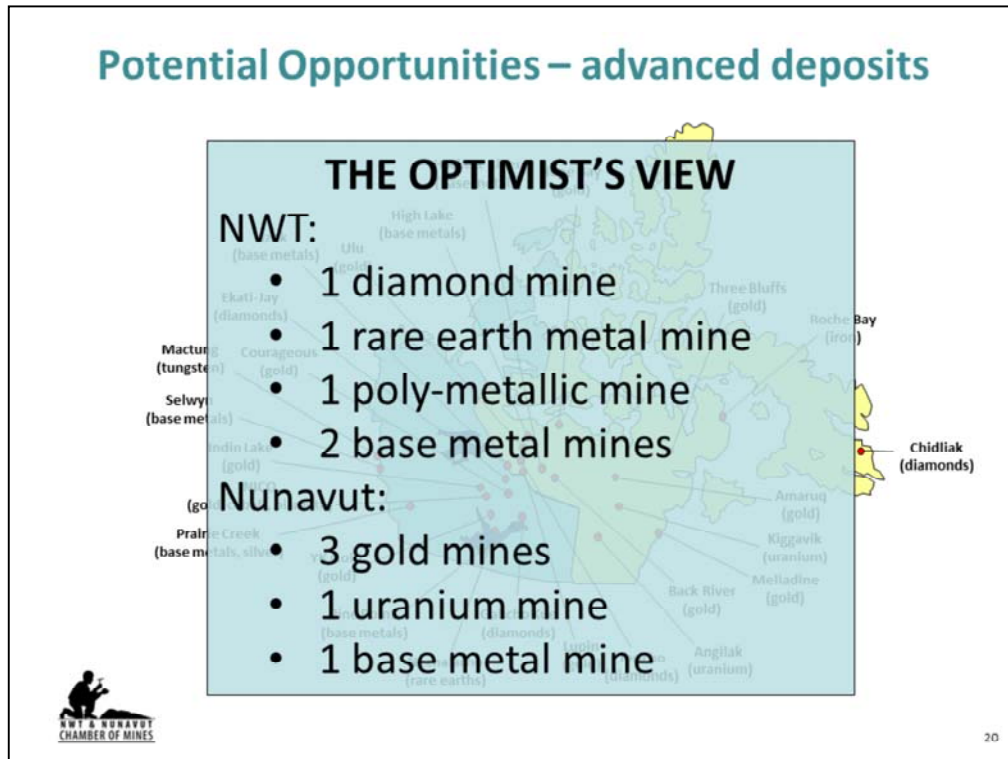
In the NWT:

- 1 diamond mine
- 1 rare earth metal mine
- 1 poly-metallic mine
- 2 base metal mines

And in Nunavut:

- 3 gold mines
- 1 uranium mine
- 1 base metal mine

Potential Opportunities – advanced deposits



There are a great many other promising projects. These are all projects either in the approval processes, undergoing feasibility studies, or having already been approved. But they are not yet in construction for a variety of reasons.

The Optimist's View of these projects just a couple of years ago was that of these projects we would see built:

In the NWT:

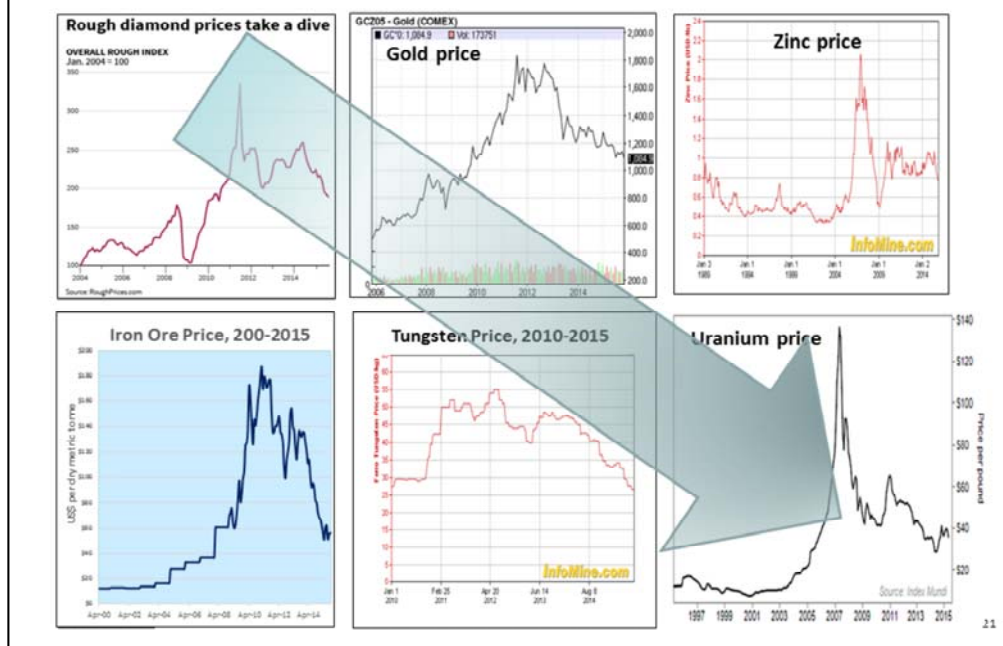
- 1 diamond mine
- 1 rare earth metal mine
- 1 poly-metallic mine
- 2 base metal mines

And in Nunavut:

- 3 gold mines
- 1 uranium mine
- 1 base metal mine

Unfortunately, our optimism has been dashed somewhat.

The “Chinese Hangover” – price challenges



Unfortunately, our optimism has been dashed somewhat by global commodity price challenges.

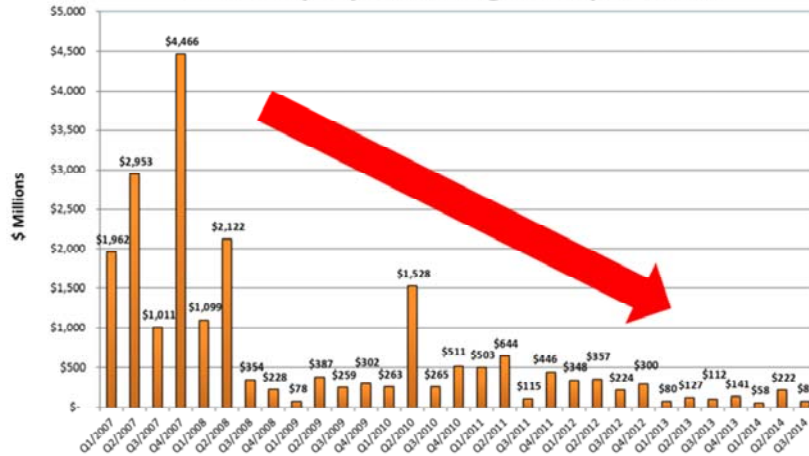
I call this the Chinese Hangover. We hitched our star to China, and have had a pretty good run as China boomed. Now that their economy has throttled back, we are seeing prices fall, and the weakening mining economics is affecting our industry.

Commodity prices are not the only challenges we face, unfortunately.

(This brings me to the theme of your conference, Global Challenges, Regional Solutions. These are some of the global challenges we currently face.)

Exploration Financing Challenges – Global

Global Equity Financing for Exploration



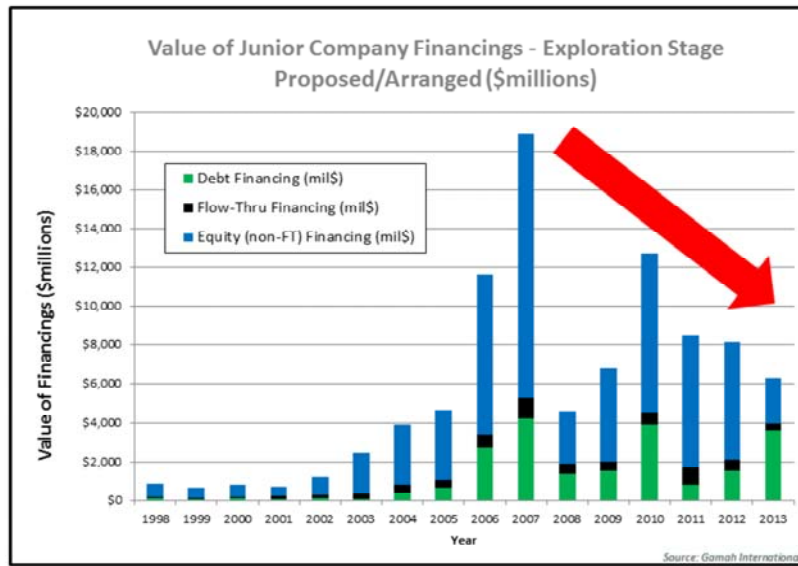
Mineral Exploration Financing – All Exchanges. Source: GAMAH International Ltd



Besides falling commodity prices affecting exploration investment, we have also seen investors' becoming quite risk averse, less willing to gamble on the high risks of mineral exploration, and investing their money elsewhere. So our junior companies particularly are facing great challenges in raising money to explore.

So exploration money is drying up globally.

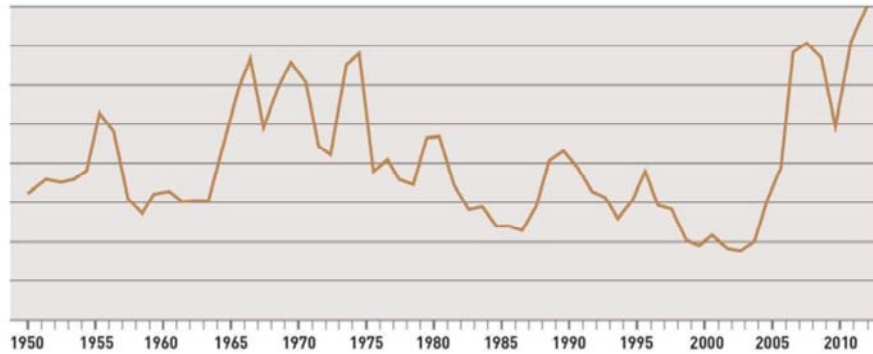
Exploration Financing challenges, Canada too



And of course, Canada hasn't escaped this, as this chart of Junior exploration financings shows.

All is not lost, though ...

One reality of the market place that we know



“This too shall pass!”

History tells us that the markets will improve again.



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All very negative stuff, I know, but on a note of optimism, all is not lost.

Past history shows us that the markets cycle like a roller coaster. (This is a plot of the copper price over time.)

So, as the old saying goes: “This too shall pass” and the markets will rise again.

And this provides us an opportunity.

**We can't change the marketplace, but ...
we can change ourselves**



... take actions now to be ready for the market rise.



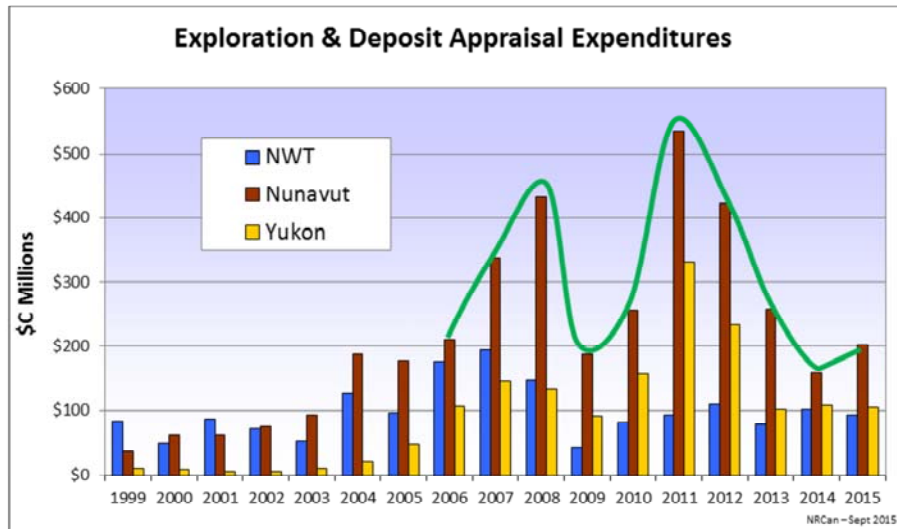
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And this provides us an opportunity.

While we wait for the markets to change (and while we can't change the markets),
WE CAN CHANGE OURSELVES.

Now is the time to take actions to get our house in order so that we are ready to
take advantage of improving markets.

We have some control of our fate



- Yukon and NU exploration investment followed the markets



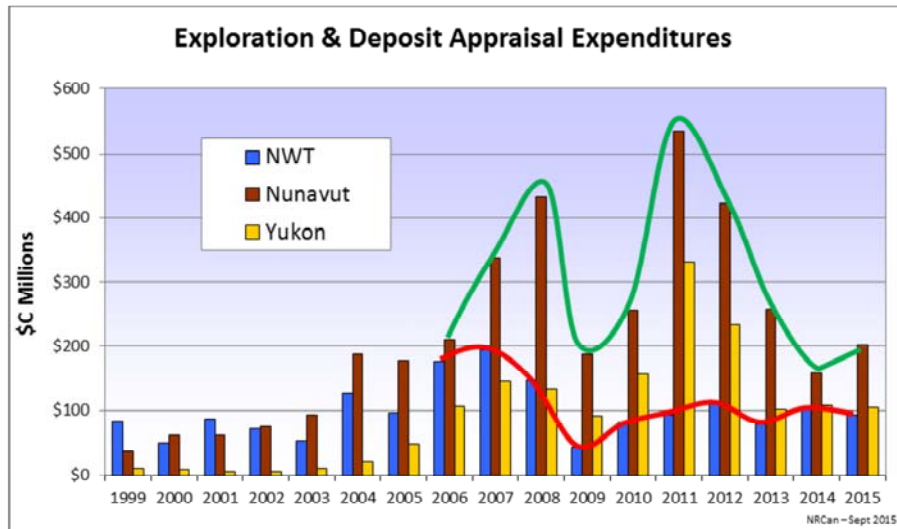
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Lest we think that we don't have the ability to affect investment, let me share some recent history.

This chart is exploration spending in the three northern territories.

The green trend line for Nunavut (mirrored by Yukon too), essentially followed the marketplace. Note there was big China growth related spending up to the fall during the recession, then the quick recovery to a new record, and now the decline our entire industry if facing globally. This essentially reflects the pattern of the marketplace.

We have some control of our fate



- Yukon and NU exploration investment followed the markets
- NWT Exploration spending was out of synch = means self-inflicted

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But in the red trend line, you'll see the NWT's performance did not mirror it. It has been out of synch with the marketplace. This tells us we are the problem.

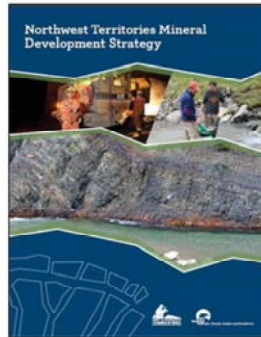
And this means we have some control of our fate.

(In the NWT, this was a period of regulatory uncertainty with small projects being referred to environmental assessments, and no timelines in processes, a land claimant group insisting on unrealistic agreements, and land access being reduced due to land claims, and protected area withdrawals).

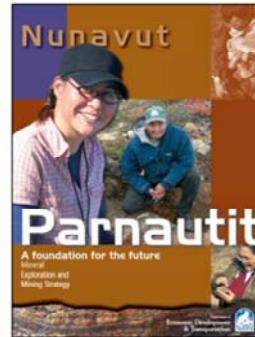
The point I want to make here is that if we can negatively affect our investment climate, then we have the power to positively affect it too.

WE ARE NOT VICTIMS.

Strategic action plans for mining



- **NWT Mineral Strategy – 2013**
 - To prepare for devolution
 - Strengthen mining,
 - Rejuvenate exploration
 - Support northern jobs, business and taxes
 - Some good actions to date, but ...
 - Government needs to do more



- **NU Mineral Strategy – 2007**
 - To create conditions for a strong and sustainable minerals industry that contributes to quality of life for all
 - Economy will depend on development of resources
- **Strategy needs rejuvenation**
 - Devolution is coming ...

So how do we take action? Through action plans like the mineral strategies.

The NWT Government launched its first ever Mineral Development Strategy in late 2013 to prepare for devolution in 2014. You can see its good goals to Strengthen mining, Rejuvenate exploration, and Support northern jobs, business and taxes.

We have seen some good actions to date (exploration assistance grants, timelines in legislation, mineral industry advisory board, land tenure payment relief), but our industry would say that the governments need to do more (Public and Aboriginal).

Nunavut also released its own 5-Year Mineral Strategy many years earlier, in 2007. It had similar goals, but our industry would say that since it was only a 5-year plan, created at a different time in the marketplace, it's time for rejuvenation with a new plan. Particularly since Nunavut is pursuing increased self-reliance through devolution now too, and a strong mining industry will be very important to increased self reliance.

Taking action to enhance investment

- Invest in infrastructure – “Level the Playing Field”
- Increase certainty with regulatory improvement, eg:
 - Do not proceed with regulatory cost recovery in the North
 - Exempt small projects from EA – MVRMA hair trigger
- Address land access uncertainty
 - Settle remaining Aboriginal Land Claims
 - Advance land use planning
 - Reduce growing protected/conservation areas
- Reduce the high northern cost of living
- Create economic strategies that all departments support
- Educate to increase public support for mining and our economy
- Improve education outcomes and provide training
- Have Public & Aboriginal gov'ts join in marketing to investors



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So what are some of the actions that industry would see helping?

I don't have time to get into great detail, but these are actions we are discussing with governments:

- Investing in infrastructure to “Level the Playing Field”. Largely because of lack of infrastructure, it costs more to explore and mine in the North. We get no special treatment. So our playing field is not level. Check out the report we co-authored on the nature of the problem, and some solutions.
- Increase certainty with regulatory improvement, eg:
 - Do not proceed with regulatory cost recovery in the North (will further unlevel the playing field)
 - Exempt small projects from EA – MVRMA hair trigger
- Address land access uncertainty
 - Settle remaining Aboriginal Land Claims
 - Advance land use planning
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- Create economic strategies that all departments support
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Conclusion

- Mining is proving its ability to create significant benefits for NWT and NU
- Exploration and mining are challenged by global and regional factors
- But there are actions we can take today to help our industry become even more beneficial and successful to our two Territories



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Let me summarize with these three conclusions:

- Mining has proven its ability to create significant benefits for NWT and NU
- Exploration and mining is challenged by global and regional factors
- But there are actions we can take today to help our industry become even more beneficial and successful to our two Territories

Why it matters



Let me close with this last slide on why it matters.

It all begins with people success.

This contributes to community health which contributes to a healthier and more prosperous region.