

**A Brief Submitted to the 62nd Annual Energy & Mines Ministers'  
Conference**

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**by the**

**PROSPECTORS AND DEVELOPERS ASSOCIATION  
OF CANADA**

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# EXECUTIVE SUMMARY

## BACKGROUND

This brief is submitted to the 62nd Annual Energy and Mines Ministers' Conference by the Prospectors and Developers Association of Canada (PDAC), a national organization representing the interests of the mineral exploration and development industry.

Canada is richly endowed with natural resources and mineral potential. This is the foundation for a strong mineral industry which has contributed significantly to this country's economy and standard of living, particularly in its northern and rural regions. This endowment has also enabled Canada to be at the forefront of mineral exploration and development and to establish a vibrant junior exploration sector.

Burgeoning economic growth in China, India and Brazil is driving an almost unprecedented demand for mining products. While the greatest demand is for base metals, there is also increasing demand for products such as coal, iron ore and uranium. The expectation is that this demand will continue for two or three decades.

Canada is well positioned to benefit from this global commodity boom. However, to be able to do so, the country's reserves of key commodities, particularly base metals, need to be adequate and replenished. Unfortunately, this is not happening. Natural Resources Canada's statistics show a steep decline in proven and probable base metals reserves over the past quarter century. To reverse this trend, the discovery of new deposits is vital and will require an extended and high level of investment.

Globally and in Canada, the mineral industry has recovered after a severe downturn between 1997 and 2002. Exploration expenditures in Canada more than doubled from \$504.4 million in 1999 to an estimated \$1.1 billion in 2004. Canada has been able to attract increasing levels of exploration investment, from 11.6% of total world spending in 1997 to 19.6% in 2004.

The role of the junior exploration sector has become increasingly important in mineral exploration. In 2004, junior company spending on exploration in Canada overtook senior company spending. There is evidence too that junior companies are shifting their focus to base metal targets, given the strong demand for base metals and continuing strength in commodity prices.

However, there are signs that the recent high levels of exploration activity by the junior sector may not be sustainable and that the peak of the current cycle may have been reached. This is cause for concern. Total exploration expenditures have not reached the levels attained at the peak of the last cycle in 1996, and there has been a longer than normal lag between exploration investment and the rate of mineral discoveries. This lag is attributed to the downturn in exploration activity and low levels of investment between 1997 and 2002. A prolonged period of exploration investment is required to catch up.

In summary, the challenges and opportunities for Canada and its mineral exploration sector are:  
The strong global demand for mineral commodities, particularly base metals, which is expected to continue over the next two to three decades;

- A serious decline in Canada's base metal reserves;
- Fewer discoveries and a consequent lack of new deposits and reserves in the pipeline, attributed to low levels of exploration investment from 1997-2002. Canada now requires a prolonged period of exploration investment to catch up;

- Preliminary evidence that the current cycle has reached its peak and that high levels of exploration activity, particularly by the junior exploration sector, may be unsustainable.

## RECOMMENDATIONS

The PDAC recommends that mines ministers work together to implement a strategy that will increase discovery rates and replenish reserves. Specifically, the association recommends the following:

### **A. The Investment Tax Credit for Exploration (ITCE) program be extended in a series of rolling three-year phases, supplemented with annual reviews of the program's benefits.**

The ITCE program, introduced in late 2000 as a temporary measure to revitalize the mineral industry in Canada, expires at the end of 2005. The program was effective in not only maintaining but also increasing Canada's share of the exploration investment available worldwide, which climbed from 15% in 2000 to 21% in 2003. The program has also been an important incentive program for the junior exploration sector. The program has proven its worth and is ideally suited to address the new challenges now facing the industry and Canada. It keeps exploration investment in Canada, increasing the possibility of new discoveries, and focuses on the junior exploration sector, which is the foundation of the exploration industry.

### **B. The costs of community consultation, baseline environmental studies, and feasibility studies be treated as Canadian Exploration Expense (CEE)**

Most junior exploration companies, having no production revenue, fund their exploration activities by issuing flow-through shares. The costs of community consultation, baseline environmental studies, and feasibility studies are not currently considered CEE, and junior exploration companies must cover them with hard dollars, which are difficult to raise. Community consultations and environmental baseline studies are realities of today's exploration business, and the CEE should be modernized to reflect these realities. Feasibility studies are an integral part of assessing the quality of a mineral deposit, and the costs of these studies should also qualify for CEE.

### **C. Exploration for base metals in the vicinity of former producing or operating mines be treated as CEE to encourage exploration for base metals**

Canada's need to replenish its base metal reserves requires special measures. Treating exploration for base metals in the vicinity of former producing or operating mines as CEE, rather than Canadian Development Expense, would encourage junior companies, financed through flow-through shares, to explore in areas of high prospectivity. Base metal discoveries close to existing mines provide new feed for local smelters and refineries and jobs for local residents.

### **D. A 20% federal investment tax credit for deep drilling be introduced to encourage exploration below 300 metres to discover deep ore reserves and extend reserve life around existing communities.**

The PDAC supports this Mining Association of Canada recommendation on the basis that such a tax credit would serve as an incentive for companies to make the large investments necessary to search for deeper mineral deposits and to replenish reserves, particularly those of base metals and in the vicinity of existing mines and communities.

**E. Funding be committed towards the Cooperative Geological Mapping Strategy (CGMS) to ensure that this valuable program improves the quality and extent of Canada's geoscience knowledge base.**

In 2000, all of the mines ministers approved CGMS but there has been an absence of financial commitment, notably in the last federal budget. The CGMS implementation plan involves a regional approach to public geoscience that promotes cooperation among existing geological surveys, universities, and industry. The resulting research would contribute towards securing Canada's energy supplies, sustaining resource based communities and identifying new economic development opportunities, particularly those in Canada's North. Implementing the CGMS program would involve an annual investment (federal, provincial and territorial) of \$50 million over ten years.

## **GOVERNMENTS AND INDUSTRY WORKING TOGETHER**

The PDAC urges governments and industry to work together to meet the challenges facing the mineral industry. One of its most pressing is the issue of human resources. The Minerals and Metals Industry Sector Study Steering Committee, in partnership with the Mining Industry Training and Adjustment Council (MITAC), recently completed a comprehensive human resources study. One of its findings is the impact of aging employees on the industry, with 50% of mining industry workers now over 40 years of age and 40% of employees expecting to retire over the next ten years.

Continued funding for MITAC, the lead organization to follow through on many of the study's recommendations, is requested. Ministers are also asked to consider strategies of particular importance to the exploration sector. These include: modifying governing statutes and regulations to allow for mobility of geoscientists across Canada; developing youth targeted programs that identify the range of career opportunities offered by the industry; and improving access to training programs for rural, remote and aboriginal populations.

While the adoption of the passport system is seen as an important step in securities reform, the adoption of a single national securities regulator will enhance Canada's productivity and competitiveness on the world stage. Ministers are asked to convey this message to their Cabinet colleagues.

Ministers are also asked to work together to resolve longstanding issues relating to Canada's northern regulatory regime. Government-industry-community initiatives are now underway; however, much remains to be done to attract investment to the North.

Finally, the brief draws attention to the work of the Canadian Integrated Landscape Management Coalition, which is promoting Integrated Landscape Management as a practical approach to achieving conservation and development objectives. Copies of the coalition's recent publication, *Integrated Landscape Management: Applying sustainable development to land use*, will be distributed to mines ministers and delegates attending the conference.

## **INTRODUCTION**

The Prospectors and Developers Association of Canada (PDAC) represents the interests of the mineral exploration and development industry. The association was established in 1932 and is today a national organization with 600 corporate members (including senior, mid-size and junior exploration companies and organizations providing services to the mineral industry) and 5,000 individual members (including prospectors, developers, geoscientists, consultants, mining executives, and students, as well as those involved in the drilling, financial, investment, legal and other support fields).

This submission has been developed on behalf of Canada's mineral exploration and development industry after consultation with members of the PDAC, the Canadian Mineral Industry Federation, and regional prospecting and exploration associations across Canada.

### **Canada's mineral industry and its benefits**

#### ***Mining's benefits to Canada's economy***

Canada has a rich endowment of natural resources and mineral potential. On the basis of this, the country has been able to build a strong mineral industry which is a major contributor to Canada's economy and standard of living. In 2004, the mining and mineral processing industry contributed \$41.83 billion or 4% to Canada's GDP, estimated at \$1.04 trillion, and services related to mining contributed an extra \$5.54 billion in 2004. Because of the strength of its mineral industry, Canada is a world leader in its ability to supply mineral commodities to other countries. Approximately 75% of Canadian minerals and metals products are produced for the export market. In 2004, minerals and metals products represented 13.8% of total Canadian exports.

#### ***Contribution of the mineral exploration sector***

Canada also has a well-earned reputation for its leadership in mineral exploration and development. This country's junior exploration sector has contributed significantly to this leading role and today is an increasingly important component in the exploration industry both domestically and abroad. The junior sector is the jewel in Canada's exploration crown and is what makes this country's mineral exploration industry unique. Generally with fewer than five professionals, these small enterprises can be extremely flexible, responding to changes such as commodity demand or price with remarkable agility, but have little in the way of in-house research capacity. With little or no revenue from production, many junior companies depend largely on the markets to raise capital for their exploration activities.

Canada's expertise and success in mineral exploration has led to a concomitant growth of technical expertise, the development of technology, the growth of the financial and legal sectors, and a large supporting industry that manufactures and supplies exploration and mining related equipment and services. Canada, for example, is an important provider of geophysical equipment and services. This development has advanced the domestic industry significantly and has contributed to or resulted in discoveries of new mineral deposits. For example, the testing of a geophysics anomaly resulted in a new discovery in northern Ontario in 2004. Joint venture partners Spider Resources and KWG Resources and senior partner De Beers made a discovery of a copper-zinc-silver volcanogenic massive sulphide deposit at McFauld's Lake. This new discovery, now being further explored, appears to be similar in nature to deposits in the Matagami Camp in Quebec.

#### ***Regional development***

Canada is indeed fortunate to be in this enviable position, and Canadians have been able to enjoy the benefits that a strong mineral industry provides. The industry creates new wealth and contributes significantly to this country's economy. This is particularly so for communities in the northern reaches of Canada where local economies can be stimulated almost immediately by mining-related activities, from grassroots exploration through to mining production. Over the past four years, junior and senior

companies have spent an estimated \$2.9 billion on exploration and deposit appraisal in rural and northern areas of Canada.

### ***Employment opportunities for aboriginal peoples***

Mining can make an important contribution to the prosperity and well-being of aboriginal communities, and mining companies are among Canada's largest actual and potential employers in rural and northern regions. Figures from the 2001 Canadian Census show that aboriginal employment in the mining industry accounted for 5.3% of the total mining labour force, compared to the national average of less than 3%. This represents a 21% increase over the previous five years.

### **World demand for commodities**

The world is currently experiencing a commodity boom and an almost unprecedented demand for mineral products. This demand is fuelled to a large extent by China's escalating appetite for consumer goods and for the manufacture of finished goods for export. The Chinese government has set the target of doubling its GDP by 2020, creating expectations that the demand for commodities will continue. Statistics abound on China's burgeoning consumer consumption. JPMorganFleming reports, for example, that Volkswagen sells more vehicles in China than it does in Germany and that the country consumes the same amount of global commodities as the U.S. China's imports of commodities, including oil, metals and agriculture, reached at least US\$106 billion in 2004. In the same year, China overtook the United States as the number one consumer of copper.

Economic growth is also evident in India and Brazil. These two countries, together with China, had an average economic growth of 5.53% between 2000 and 2004. This is substantially higher than the average of 1.78% for the United States, the European Union and Japan during the same period.

While demand for commodities has centred principally on base metals (copper, lead, zinc, and nickel), there is also increasing demand for virtually all mineral products, including coal, iron ore, uranium, molybdenum, titanium, platinum and palladium.

Demand for commodities has, of course, benefited the mining industry. In its review of global trends in the mining industry, PricewaterhouseCoopers reports that "the mining industry had a spectacular year in 2004" and that "profits have doubled for the second year in a row." As a major supplier of mineral products, Canada has been one of the principal beneficiaries of this upswing in demand and the consequent rise in commodity prices. If we can replenish reserves by making new discoveries, Canada, particularly its rural and northern communities, stands to benefit substantially.

### **Declining base metal reserves in Canada**

Expectations that the demand for commodities will continue at a high level for at least the next two or three decades mean that Canada and this country's economy could be in an excellent position to reap further significant economic benefits. To be able to achieve this, we have to ensure that our reserves of key commodities, in particular base metals, are adequate and that we are continuing to replenish them. This is, unfortunately, not the case. Data supplied by Natural Resources Canada show a steep decline in Canada's proven and probable base metals reserves over the past 26 years. The actual declines are: copper 63%; nickel 44%; lead 92%; zinc 77%; and molybdenum 79%.

This is an alarming trend. The decline in base metal reserves could have far-reaching consequences. Globally, at a time when demand for commodities, particularly base metals, is extremely high and forecast to stretch over decades, Canada will not be able to take full advantage of this situation unless the reserves are replenished through exploration investment and new discoveries. A continuation of this decline will have a negative ripple effect on this country's northern communities and their local economies and on this country's smelting and refining infrastructure.

The Prospectors and Developers Association of Canada firmly believes that all Canadian governments – federal, provincial, and territorial – and industry must work together to find ways to increase base metal reserves and reverse the downward trend. We believe that, to achieve this, new discoveries of mineral deposits in Canada are the vital first step. This will require an extended, high level of exploration investment.

### **The role of government in attracting exploration investment**

The ability of companies to raise capital for exploration depends on a number of factors. Some of these can be influenced by government action; some cannot. The state of capital markets and commodity prices, for example, can spur or deter investment in exploration. However, they are outside governments' spheres of influence.

On the other hand, government policies and programs can contribute significantly to a country's attractiveness as a target for exploration spending. The authors of the 2004-2005 Fraser Institute Mining Survey confirm this. "While geologic and economic evaluations are always requirements for exploration, in today's globally competitive economy where mining companies may be examining properties located on different continents, a region's policy climate has taken on increased importance in attracting and winning investment."

A fair regulatory regime; an up-to-date geoscience knowledge base; a skilled pool of geoscientists; and policies that promote the generation of exploration capital, features that can enhance a country's investment climate, can be effected or influenced at the policy level.

Historically and currently, these features have ensured that Canada maintains its share of the global pool of exploration expenditures. They have assured and continue to assure Canada's competitiveness whatever the circumstances.

### **CURRENT STATE OF MINERAL EXPLORATION**

Data in this section have been derived from Gamah International Limited, Metals Economics Group, and Natural Resources Canada. The figures are presented in Canadian dollars of the day unless otherwise indicated. Selected data demonstrating financing and exploration trends are included in the appendices.

The mineral industry is cyclical in nature. From 1997 to 2002, the industry suffered a severe downturn during which investment in exploration decreased significantly. This resulted in a substantial decline in discovery rates and further declines in reserves of a range of commodities. Since 2002, the worldwide industry has seen a revival, driven by a rising demand for commodities and an increase in commodity prices.

- Financings for exploration and development projects worldwide declined to a low of \$17.2 billion in 1999, recovering to \$36 billion in 2004.
- Global exploration expenditures for non-ferrous metals declined from a high of \$6.6 billion in 1997 to \$2.5 billion in 2002, recovering to \$5.2 billion in 2004.

Canada has played an important role in and has benefited from the recovery of the industry.

- Capital raised on Canadian stock exchanges for exploration and development projects worldwide rose from \$4.7 billion in 1998 to \$10.2 billion in 2004.
- Total exploration expenditures in Canada more than doubled from \$504.35 million in 1999 to an estimated \$1.1 billion in 2004.

- In 1997, exploration expenditures in Canada accounted for 11.6% of total world exploration expenditures. By 2004, this percentage had risen to 19.6%.

### **The role of the junior exploration sector**

The role of junior exploration companies has become increasingly important in grassroots prospecting, making new discoveries and conducting early to middle stage exploration. This is particularly the case in Canada where junior company exploration expenditures have overtaken those made by senior companies.

- In 1999, financings by junior companies on global stock exchanges accounted for 6% of total financings for all exploration and mining projects worldwide. In 2004, this figure had risen to 16%.
- Financings by junior companies on Canadian stock exchanges accounted for 18% of total company financings raised in Canada in 1998. This percentage had risen to 34% in 2004.
- Prior to 2002, exploration expenditures by junior companies ranged from 32% to 40% of total grassroots exploration and deposit appraisal expenditures in Canada, while senior company expenditures represented the balance. The proportion of expenditures by juniors has risen significantly to an estimated 54% in 2004. Company spending intentions data compiled by Natural Resources Canada for 2005 indicate that this figure could rise to over 60%.

The focus of junior exploration companies has traditionally been gold or, more recently, diamonds. However, there is evidence to suggest that their focus is shifting to base metal targets, given the strong demand for base metals and continuing strength in commodity prices.

- Financings for base metal exploration projects worldwide by junior companies have increased close to six-fold from \$965 million in 2000 to an estimated \$5.7 billion in 2004 and have surpassed financings for gold projects.
- The proportion of worldwide spending on base metal exploration projects by junior companies compared to the senior sector has risen from 17% in 1999 to 35% in 2004.

There are indications now that the high levels of exploration activity by junior exploration companies over the last two years may not be sustainable and that the current cycle may have reached its peak. Preliminary figures suggest a softening of capital markets for the junior exploration sector and substantiate anecdotal evidence that junior companies may be starting to experience difficulties raising funds for grassroots exploration projects.

This is cause for concern. Total exploration expenditures have not reached the levels attained at the peak of the last cycle in 1996, and there has been a longer than normal lag between exploration investment and mineral discoveries rates. This can be attributed to the very severe downturn in exploration activity between 1997 and 2002 and the concomitant very low levels of investment in exploration during that period. As well, investment in grassroots exploration, compared to deposit appraisal and mine-site exploration, has not had an opportunity to return to the levels established in the previous cycle. A strong and extended period of financing and exploration levels will be required for the number of mineral discoveries to reach levels that will replenish depleted reserves and supply the demand.

### **Investment Tax Credit for Exploration program**

The Investment Tax Credit for Exploration (ITCE) program, known familiarly as the ‘super’ flow-through program, was introduced in October 2000 to re-vitalize the mineral exploration industry in Canada. There followed a series of provincial complementary programs from British Columbia, Manitoba, Ontario, Quebec, and Saskatchewan. The objective of these programs was to encourage investor interest in junior exploration companies and stimulate grassroots exploration and the potential for new discoveries. It is important to note here that flow-through funds can only be spent in Canada. Funds that might otherwise have gone offshore were, therefore, kept in Canada.

The effectiveness of the ITCE program can be evaluated in a number of ways: exploration expenditures in Canada; the ability of companies to raise capital through the ‘super’ flow-through program to finance their exploration activities in this country; and the number of new mineral occurrences, new deposits and new mines that have resulted from flow-through financed exploration. Here are the data:

- Flow-through financings raised by junior companies for exploration in Canada rose almost ten-fold from 1998 to 2004 from \$41.16 million to \$396.24 million. In 2000 (when the ITCE program was introduced) junior flow-through related financings represented 77% of total flow-through financings. By 2004, this percentage had risen to 85%.
- During the highest level of exploration spending worldwide in the previous cycle (1996, 1997 and 1998), Canada’s share of total world exploration expenditures averaged 12.7%. However, during the down cycle of worldwide exploration spending (2000 to 2003), Canada’s share of exploration expenditures climbed consistently from 15% in 2000, to 21% in 2003. Metals Economics Group has pinpointed the ITCE program as one of the chief reasons for Canada being able to attract a higher proportion of exploration expenditures available worldwide during this period.
- Much of this increase in Canada’s share of exploration expenditures can be attributed to the junior exploration sector. In 2000, junior exploration spending on off-site exploration and deposit appraisal was close to 37% of total exploration spending in Canada. This proportion rose to an estimated 62% in 2005.
- The PDAC has tracked exploration results in Canada since 1997. These data reveal the following new discoveries:
  - 225 new mineralization occurrences
  - 122 new deposits
  - 6 new mines and projects with expected production (resulting from discoveries made during the period 1997-2004]

However, as figure 11 clearly shows, the majority of these new discoveries were made from 2000 onwards. The figure also demonstrates the dearth of new discoveries in the period 1997-2000, a situation which has created a time lag between exploration activity and new discovery rates.

- In tracking new discoveries, the PDAC found that 99% of the discoveries involved financing by flow-through shares. This form of financing has played a very important role in enabling companies to find mineral occurrences and to undertake initial deposit appraisal work. On the basis of flow-through funding, companies have been able to go back to the market and raise larger amounts of hard dollars to finance further deposit appraisal work.

The ‘super’ flow-through share program has made a significant contribution to exploration expenditures remaining in Canada and has also been an important incentive program for the junior exploration sector. Because of the nature of mining and the length of time involved in the exploration process, from raising capital, conducting exploration, through deposit appraisal, feasibility studies, and the decision to mine (up to ten years), the benefits to the Canadian economy and to people outside the mining industry will likely be longer term.

## **THE NEED FOR A STRATEGY TO INCREASE EXPLORATION ACTIVITY IN CANADA**

The following are the challenges that currently face Canada and its mineral exploration sector:

- Strong global demand for mineral commodities, particularly base metals, is expected over the next two to three decades. This represents an excellent economic opportunity for Canada.
- Declines in the reserves of a range of mineral commodities, in particular base metals, which have been in decline over the past thirty years.
- Because of a severe downturn in exploration investment in Canada from 1997 to 2002, there were fewer discoveries and a consequent lack of new deposits and reserves in the pipeline. A prolonged period of exploration investment will be required to catch up.

- Evidence, noted above, that the current cycle has reached its peak and that the high levels of exploration activity, particularly by the junior exploration sector, over the last two years may be unsustainable. Our data show that the junior exploration sector is beginning to experience difficulties raising funds for grassroots exploration.

The Prospectors and Developers Association of Canada strongly recommends that mines ministers work together to adopt an effective strategy that will enable this country and its rural, northern, and aboriginal communities to derive the fullest economic benefits possible from its mineral endowment. The strategy will need to stimulate both grassroots exploration to find new reserves and brownfields exploration to extend known deposits or find new ones in the vicinity of existing mines and communities. In order to achieve these objectives the strategy will need to include two fundamental components: 1) exploration incentives for the near term; and 2) geoscience initiatives for the longer term. Specifically, the PDAC is recommending the following:

- A. The extension of the Investment Tax Credit for Exploration as a means to maintain strong levels of exploration investment in Canada and to replenish reserves for the range of mineral commodities required;
  - B. The costs of community consultation, baseline environmental studies, and feasibility studies be treated as Canadian Exploration Expense;
  - C. Exploration for base metals in the vicinity of former producing or operating mines be treated as Canadian Exploration Expense to encourage exploration for base metals;
  - D. The introduction of a tax incentive for deep drilling in the vicinity of known deposits.
  - E. The funding of the Cooperative Geological Mapping Strategy (CGMS) to improve the quality and extent of Canada's geoscience knowledge base.
- A. The PDAC recommends that the federal government extend the Investment Tax Credit for Exploration (ITCE) program in a series of rolling three-year phases, supplemented with annual reviews of the program's benefits.**

The Investment Tax Credit for Exploration (ITCE) or 'super' flow-through, program, a tax incentive for grassroots mineral exploration, was introduced by the federal government in October 2000 as a *temporary* measure to help moderate the effect of a global downturn in mineral exploration in the 1990s and to revitalize mineral exploration in Canada. The original three-year program has been extended twice since its inception, both for additional one-year periods. The program is due to come to an end on December 31, 2005. After that date, companies will no longer be able to raise funds through the ITCE program and will have until December 31, 2006, to spend funds raised in 2005.

As we have shown, the ITCE program was highly successful in its objectives, serving as a temporary measure that enabled Canadian exploration companies to raise money to finance their exploration activities during a very severe economic downturn. Indeed, it acted as a life-line for many companies.

The PDAC believes that the ITCE program is ideally suited to address the new set of challenges, identified above, for the following reasons:

- The program keeps exploration investment in Canada, thereby increasing the possibility of new discoveries of mineral deposits.
- Given that the reserves of a range of commodities need to be replenished, the non-specific nature of the ITCE program is ideally suited for the task. Canada stands to benefit from any discovery but will derive particular advantages from the discovery of base metals.
- Since its introduction in late 2000, more than \$1.2 billion has been raised by junior companies for exploration expenditures, the majority of which will be spent in northern and rural regions of Canada.

This northern economic activity is especially important for aboriginal peoples who are participating more and more in the mining industry, both in terms of employment, holding interests in successful projects, and supplying goods and services.

- The program focuses particularly on the junior exploration sector, the foundation of the exploration industry. This is an important consideration because exploration in Canada by major companies has declined (junior company exploration spending accounted for an estimated 62% of total exploration expenditures in Canada in 2005).
- Mineral exploration, particularly grassroots exploration, can be regarded as the research and development of the mining industry. As such, it is comparable to scientific research and experimental development, which qualifies for a 20% tax credit on the basis of its high risk but potential benefits to Canada's economy as a whole. Tax credits, such as the ITCE, act as important incentives for exploration and contribute to net increases in government revenues.
- The effectiveness of the program is already known and has been demonstrated. It is also an efficient program which offers considerable advantages at a relatively low cost. The 2004 federal budget, for example, included an estimate of \$10 million as the reduction in tax revenues associated with a one-year extension of ITCE.

As a critical element of the strategy for increasing discovery rates and replenishing reserves, the PDAC recommends that the federal government extend the ITCE program in a series of rolling three-year phases, supplemented with annual reviews of the program's benefits.

**B. The PDAC recommends that the Canada Revenue Agency issue an interpretation bulletin to treat the costs of community consultation, baseline environmental work, and feasibility studies as Canadian Exploration Expense (CEE).**

*Community consultation costs*

The costs of consulting with local communities, including aboriginal communities, and conducting baseline environmental studies are an integral part of an exploration program and are becoming necessary costs for the exploration business.

It is economically necessary and socially responsible for an exploration company to institute measures to ensure that an exploration project proceeds as smoothly as possible without threat of disruption. Such measures include consulting with residents in the vicinity of an exploration project. An effective consultation process before and during an exploration project is more likely to win the cooperation of the local community and to assure the integrity of the project. Furthermore, local communities have come to expect to be consulted about mineral exploration activities close to their homes.

These costs are not associated with a company's acquiring title to land to undertake exploration (which would disqualify their treatment as CEE). Rather, they are expenditures made to assure access to the land for the purpose of exploration. Costs of community consultation can be significant because of the remote location of exploration projects. These costs include: expenditures for public notices, community visits, site tours, employee travel, rental costs for meeting facilities, translation services, and legal advice, as well as salaries, benefits, administrative overhead and other internal expenses necessary to carry out the consultation process. It should be added here that many of these expenditures are made in the communities themselves.

*Baseline environmental study costs*

Similarly, the costs of baseline environmental studies are becoming a pre-requisite for any exploration program. In conducting these types of studies, a company lays down a baseline for its exploration activities that will enable it to assess the impact its program is having on the natural environment. Such a

practice protects the company and its shareholders and ensures that activities likely to cause harm to the natural environment are controlled and documented.

#### *Feasibility study costs*

Feasibility studies are an integral part of determining the quality of a mineral deposit. The costs of such studies are currently considered, under CRA administrative policy, to be a financing activity and, therefore, not eligible for CEE. This is inconsistent with the wind power generation industry where feasibility studies fall within the definition of CEE. While feasibility studies are often used to obtain financing for a mine, they are first and foremost a cost associated with assessing the quality of a deposit prior to a production and financing decision. The PDAC, therefore, recommends that feasibility study costs be accorded CEE treatment.

#### *Treatment of these costs as CEE*

Most junior exploration companies, having no production revenue, fund their exploration activities by issuing flow-through shares. Since the costs of community consultation, baseline environmental studies, and feasibility studies are not currently considered Canadian Exploration Expense, junior exploration companies must cover them with hard dollars, that is funds raised by means other than issuing flow-through shares. These funds are difficult to raise.

The Prospectors and Developers Association of Canada believes that, because exploration companies are expected to undertake community consultations and environmental baseline studies and these activities are realities of today, the CEE should be modernized to reflect these realities. The association further believes that feasibility studies are an integral part of assessing the quality of a mineral deposit and that the costs of these studies should qualify for CEE. These issues can be resolved simply by Canada Revenue Agency interpreting Canadian Exploration Expense to include the costs of community consultations, baseline environmental studies, and feasibility studies.

### **C. The PDAC recommends that, to increase the potential for discoveries of new base metal deposits, exploration for base metals in the vicinity of existing and formerly operating mines be treated as Canadian Exploration Expense.**

Exploration in the vicinity of existing and former producing mines offers a great deal of potential for new discoveries of base metals and, thereby, improves the prospect of increasing Canada's base metal reserves. Currently, these types of exploration costs are treated as Canadian Development Expense and do not qualify for flow-through financing.

The PDAC believes that Canada's need to replenish its base metal reserves requires special measures. We, therefore, recommend that exploration costs in the vicinity of existing and former producing mines be eligible for Canadian Exploration Expense (CEE). Such a measure might encourage senior companies to undertake exploration in areas of high prospectivity. However, it would more likely attract junior companies, enabling them to conduct exploration for base metals financed through the issuance of flow-through shares. As we have pointed out, junior companies are becoming increasingly involved in base metal exploration. An incentive such as this has the potential to increase exploration in areas of known prospectivity.

The discovery of new mineral deposits close to existing mines has other advantages, including the provision of new feed for local smelters and refineries and the maintenance of employment for local residents.

The PDAC, therefore, recommends that, to increase the possibility for new discoveries of base metals, the federal government treat exploration for base metals in the vicinity of existing mines as CEE rather than Canadian Development Expense.

**D. The PDAC supports the recommendation of the Mining Association of Canada for the introduction of a 20% federal investment tax credit for deep drilling to encourage exploration below 300 metres to discover deep ore reserves and extend reserve life around existing communities.**

In its brief to this year's Mines Ministers Conference, the Mining Association of Canada calls for the introduction of a 20% deep drilling investment tax credit, equivalent to the rate applied to scientific research and development. The PDAC supports this recommendation, which would apply to any exploratory drilling below 300 metres to discover deep ore deposits or new ore zones. We believe that such a tax credit would serve as an incentive for companies to make the large investments necessary to search for deeper mineral deposits and to replenish reserves, particularly those of base metals and those in the vicinity of existing mines and communities.

**E. The PDAC urges the mines ministers to commit funding towards the Cooperative Geological Mapping Strategy (CGMS) to ensure that this valuable program improves the quality and extent of Canada's geoscience knowledge base.**

The PDAC believes that a longterm strategy for mapping and mineral deposit studies would make an important contribution to this country's geoscience knowledge base and do much to encourage exploration in remote areas. Mapping allows us to identify our mineral resources and the geological potential of our country. This is particularly the case at the present time. If Canada is to be in a position to take advantage of global demand for base metals, additional effort and resources must be targeted towards expanding our geoscience knowledge base. Mapping also enables Canada to evaluate the extent of its territory for sovereignty purposes.

Geoscience knowledge is recognized by government and industry as a key competitive advantage, essential to maintaining Canada as a pre-eminent global destination for exploration investment. Given the serious decline in base metal reserves and a protracted strong global demand for these commodities, a comprehensive mapping program has become even more imperative.

The announcement of the base-metal focused, five-year Targeted Geoscience Initiative by the federal government is a major step in supporting more effective exploration. However, its focus is around existing mining districts and leaves base metal exploration in the North under supported.

The Cooperative Geological Mapping Strategy (CGMS) is a unique ten-year plan that was approved by all of Canada's mines ministers in 2000. It is an important Canadian geological mapping program that is a practical and appropriate mechanism for increasing our knowledge of Canada's natural resources. The CGMS implementation plan involves a regional approach to public geoscience that promotes cooperation among existing geological surveys, universities and industry. The resulting research would contribute towards securing Canada's energy supplies, sustaining resource-based communities, and identifying new economic development opportunities.

Following the tabling of the federal government's budget on February 23, 2005, the PDAC expressed its disappointment that the federal government had failed to commit to the mapping program. While the Targeted Geoscience Initiative program received funding, the absence of a commitment to CGMS means that significant areas across the country are without adequate geoscience information. Inclusion of the federal funding in the budget would have led to the initiation of this important cooperative arrangement,

the further assessment of geological potential and ultimately to helping address Canada's base metals and energy needs.

Renewal of each government's commitment to geoscience by implementing the CGMS program would involve a total investment (federal, provincial, territorial) of \$50 million per year over ten years. The PDAC strongly urges all mines ministers, on behalf of the mineral exploration industry, to commit funds to and implement this program, particularly because of its potential for new discoveries in remote regions and the North.

### **INDUSTRY AND GOVERNMENTS WORKING TOGETHER**

The Prospectors and Developers Association of Canada reiterates its view that all Canadian governments – federal, provincial, and territorial – and industry must work together to ensure that:

- Canada retains its pre-eminent position as the number one destination for exploration expenditures and maintains its share of the global pool of exploration investment
- Canada can take full advantage of the high global demand for mineral commodities by replenishing this country's base metal reserves
- Canadians are in a position to take full advantage of and benefit from this country's great mineral endowment.

There are a number of instances where the types of partnerships and working relationships we envisage are already in place. There are other initiatives whose outcome will depend on governments working with governments and governments working with industry.

### **Meeting human resource challenges in Canada's exploration sector**

In preparing the exploration and development industry's submission for this year's mines ministers conference, the PDAC called on sister associations across Canada for issues that they felt should be brought to the attention of mines ministers. Almost without exception, respondents identified human resources as one of their chief concerns, pointing out that a large proportion of geoscientists in the industry and in governments in Canada will be retiring over the next decade.

The formal and practical training of geoscientists is the foundation for mineral exploration. Canada has been a world leader in producing well qualified geoscientists. Many with good university qualifications and an apprenticeship in the field with industry and government surveys have become highly experienced exploration geologists and mineral deposit specialists. Others have branched out to become independent entrepreneurs, e.g., company presidents, or into the financial sector, e.g., mining analysts. The concern now is that many of these geoscientists have retired or are close to retirement and that a new generation of graduating students will not be there to replace them. This anecdotal observation has been borne out by a recent study of human resource issues in Canada's mineral industry.

As you are aware, the Minerals and Metals Industry Sector Study Steering Committee, in partnership with the Mining Industry Training and Adjustment Council (MITAC) and with funding from the federal government's sector council program, has been carrying out a comprehensive sector study of the human resource issues, challenges and opportunities facing the minerals and metals industry in Canada.

The following is a selection of the findings which bear out the concerns of industry associations across the country.

- 50% of mining industry workers are over 40 years of age. Retirement is a serious impending issue, with 40% of employees expecting to retire over the next ten years.

- Based on a current work force of 78,000, the Canadian mining sector will have to recruit between 36,470 positions under a ‘no growth’ scenario, and 81,970 positions under a ‘high growth’ scenario due to retirement, voluntary separation and industry growth.
- These positions will need to be filled through new youth hires, attraction of workers from other industries, the aboriginal community, new Canadians and non-traditional workers. Other sectors will be competing for these same labour pools.
- The need for occupational standards is becoming increasingly important given technological advancements, the need for greater work force mobility and the challenge of promoting mining and exploration careers to a wider audience.
- Maximizing the engagement of the Canadian aboriginal work force will be important and could provide the mining and exploration industry an advantage over other sectors vying for a limited pool of talent.

The PDAC commends the federal government for funding this timely and important study and for demonstrating how governments and industry can work together to good effect on matters of mutual concern. We urge mines ministers to consider the study’s findings and recommendations, particularly in light of the future opportunities presented to Canada’s mineral industry by a heightened global demand for commodities and the need to maintain the economic viability of rural and northern communities.

It is important that the human resources challenges identified in the study be addressed and resolved. We, therefore, request that the federal government continue to fund the Mining Industry Training and Adjustment Council which is recognized as the lead organization to follow through on many of the study’s recommendations.

The study contains strategies and action items of particular importance to this country’s exploration sector, specifically:

Strategy C3: Standardize credentialing of professional occupations within Canada

*Action item 43: Propose changes to legislation that would allow geoscience professionals to practice in more than one jurisdiction without requiring specific provincial certification for each province or territory.*

Mobility of professional geoscientists across jurisdictions is one of the PDAC members’ most pressing concerns. The nature of mineral exploration often requires that an individual with professional expertise be available to travel to any part of Canada on short notice. However, to be able to work as a professional geoscientist in a particular province or territory, that individual must first meet the jurisdiction’s requirements for registration as established by provincial/territorial legislation and administered by a self regulatory organization (SRO).

Existing registration systems, with their administrative procedures and costs, vary significantly across jurisdictions, serving as time and cost impediments to the professional geoscientist and, thereby, to the exploration sector as a whole. Moreover, the intent of professional registration – to protect the public – is diluted by the wide variations in professional standards, financial resources and monitoring capacity among the SROs, posing a risk to practitioners, regulators, and the general public alike.

The PDAC supports the professional registration of geoscientists. The association is currently working with affected individuals, organizations and governments to improve the registration system. It is the association’s position that an internationally recognized, Canada-wide system of professional practice will promote consistent standards of practice, high rates of compliance, cost effective administration, improved flexibility, productivity, and enhanced protection of the public.

Given the provincial and territorial responsibility for licensing, there will be a need to review and modify the governing statutes and regulations to allow for mobility of geoscientists. The PDAC urges the federal, provincial and territorial governments to work collaboratively to meet the needs of the exploration industry and to protect the public interest by working towards the harmonization of the various statutes and regulations.

Strategy A1: Promote the minerals and metals industry to youth as a safe, modern, environmentally friendly and technologically advanced career option

*Action item 4: Develop career information products targeted to youth that promote the industry and identify the vast range of career options available.*

*Action item 5: Encourage provincial school systems and governments to update curricula to reflect the modern mining industry in elementary and high schools.*

Children tend to be curious about the natural world around them and are particularly fascinated by rocks and minerals. PDAC Mining Matters is a program designed to tap this fascination and to educate students about Canada's geology and mineral resources, promoting awareness of the importance of rocks, minerals and mining. The initiative, which has been ongoing since 1994, also develops programs to fit in with the educational earth science curriculum, provides classroom kits for teachers and organizes workshops to assist teachers in using the kits.

The Mineral Resource Education Program of British Columbia, with similar goals, is another partnership between classroom teachers and the mineral industry in British Columbia. The focus of this partnership is to support classroom teachers with the development of practical and usable teacher resources about minerals, mining and geoscience.

Both of these programs have been very successful and well received by teachers. They are excellent examples of how industry has been working to demonstrate the benefits of the minerals and metals industry to young people.

The PDAC believes strongly that programs such as these do much to enlighten young people about the mineral industry and its impact on their daily lives. We also believe that they might encourage our youth to study geosciences and, ultimately, to consider working in the industry.

The association urges mines ministers to work in cooperation with industry to develop more programs to promote the mineral industry and its employment potential and to work with their cabinet colleagues to ensure that educational curricula reflect an up-to-date view of the industry, i.e., safe, environmentally friendly, and technologically advanced.

Strategy B4: Develop a collaborative, cross-industry strategy for educational preparation, training and educational programs, continuing education and life-long learning, and employer-provided training to facilitate the availability of a skilled labour force.

*Action item 32: Continue to develop the aboriginal workforce and improve access to essential skills and industry training for rural, remote and aboriginal populations.*

The research finding that the mineral industry could lose up to 40% of its existing work force in the next ten years represents a challenge for the mineral industry, including the exploration sector. However, challenges can be turned into opportunities.

Most of the recommendations that the PDAC has made in this submission – that the ITCE program be extended, that the costs of community consultation and on-property exploration for base metals be treated

as CEE, and that the federal government commit funds to the Cooperative Geological Mapping Strategy – will, if implemented, contribute to levels of exploration activity somewhat smoothed of the peaks and troughs that this cyclical industry has experienced in the past. This is particularly the case in northern and rural regions of Canada.

Aboriginal peoples in Canada must be among those to benefit from exploration activity in the North. As we noted above, aboriginal participation in the mineral industry is on the rise, and we believe that this involvement - in the form of direct employment or the supply of services and equipment - must be encouraged as much as possible.

There are a number of current initiatives designed to inform aboriginal communities about the mineral industry. Among them is an aboriginal toolkit, which is being developed by the PDAC in partnership with Natural Resources Canada, Indian Affairs and Northern Development, the Canadian Aboriginal Minerals Association, and the Mining Association of Canada. Material in the kit will include information on training, jobs, and business opportunities.

These programs are a good first step. However, the PDAC firmly supports the recommendation contained in the study that governments take the lead in the continuing development of the aboriginal workforce and the improvement of access to essential skills and industry training for rural, remote and aboriginal populations.

### **Securities regulatory reform**

There is general agreement that, in order to remain competitive on the world markets, Canada needs to overhaul its securities regulatory system. The adoption of the passport system is a significant step in securities reform. However, the PDAC believes that the eventual goal must be for Canada to have a regulatory system administered by one regulator, applying one set of rules in a consistent manner across Canada. The association also believes that the objectives of this country's securities laws must be: to provide junior issuers with access to capital on a timely, effective and cost efficient basis and to maintain public confidence in the capital markets. The regulations must include disclosure and reporting obligations that strike a balance between protection of the investing public and ensuring that the maximum amount of a company's financial and managerial resources are available for mineral exploration and development work.

The PDAC welcomes Finance Minister Goodale's intention to invite his provincial and territorial counterparts to discuss this important issue in September. We urge mines ministers to carry the message to their cabinet colleagues that a single national regulator will do much to enhance Canada's productivity and competitiveness on the world stage.

### **Northern regulatory regime**

Canada's northern territories have great potential for economic growth, primarily through their mineral resources. Yet the investment climate in these vast regions continues to be uncertain, acting as a deterrent to potential investment. This situation was pointed out clearly by the Auditor General of Canada in her April 2005 report. There are a number of initiatives currently underway which aim to improve the North's investment climate and build a foundation for the sustainable development of its natural resources.

Of particular note is the Northern Strategy, announced by the federal and territorial governments in December 2004. The purpose of this initiative, which is being developed in cooperation with aboriginal governments, organizations and northern residents, is to develop a common, longterm vision for the North and to identify appropriate actions to achieve this vision. One of its longterm goals is to establish strong foundations for the economic development of the North.

Another initiative is the Industry-Government Overview Committee (IGOC), which includes representatives from exploration and mining, Indian and Northern Affairs Canada, and the territorial governments. The committee was formed in January 2001 to examine ways to improve the North's investment climate. Concerns of this committee centre largely on the operations of the Northwest Territories' regulatory boards, legislation in Nunavut, amendments to Canada Mining Regulations, and geoscience.

The recommendations contained in our brief will, if implemented, contribute towards investment in the North. The extension of the ITCE program, inclusion of community consultation costs in Canadian Exploration Expense, and funding of the Cooperative Geological Mapping Strategy will all have a positive impact.

The PDAC applauds any initiative that will improve northern Canada's investment potential. Both the Northern Strategy and IGOC are sound mechanisms for working towards this goal. However, the mineral industry has expressed concerns that the northern regulatory regime remains inefficient and, at times, unworkable. This is particularly the case in the operation of the boards in the Northwest Territories which are having a negative impact on regulatory and permitting processes. We ask that mines ministers work together to resolve these longstanding issues.

### **Integrated Landscape Management**

Canada is a vast land with a wide variety of natural resources, landforms and ecosystems. It is generally viewed as being wild and relatively unspoiled, with large areas still uninhabited. Yet Canada is also an urban nation with densely settled lands. Most of Canada is now readily accessible through various means and is open to a broad spectrum of potential land uses. Surface resources have been harvested for over two centuries. Through mining, oil, gas, oil sands, coalbed methane development, urban development, agriculture and tourism/recreation, the face of the country is changing as more activities and pressures are placed on the land base.

Land conservation measures have been taken in an attempt to offset the potential for extensive land use. The current approach to conserving land has been primarily through creating some form of protected areas. This approach has not been without conflict, nor has it been especially successful in meeting conservation objectives.

More effective strategies are needed to ensure that resources and land are maintained and managed wisely not only over the short term, but well into the future. These strategies should be based on a more integrated planning and decision-making process than currently exists.

Integrated Landscape Management (ILM) embodies a new vision for a more effective approach to land and resource management in Canada that takes traditional approaches, recent progress and the most current identified conservation and development needs and combines them all into a powerful, integrated concept of applying sustainable development to land use.

Its operational principles and concepts have been drawn up by the Canadian Integrated Landscape Management Coalition which was founded in 2003 and includes representatives of the conservation community, resource industries (including PDAC and MAC), aboriginal peoples, academia, provincial and federal government agencies. The coalition is committed to promoting ILM as a balanced, practical approach to achieving conservation and development objectives in Canada and to advocating its adoption across the country.

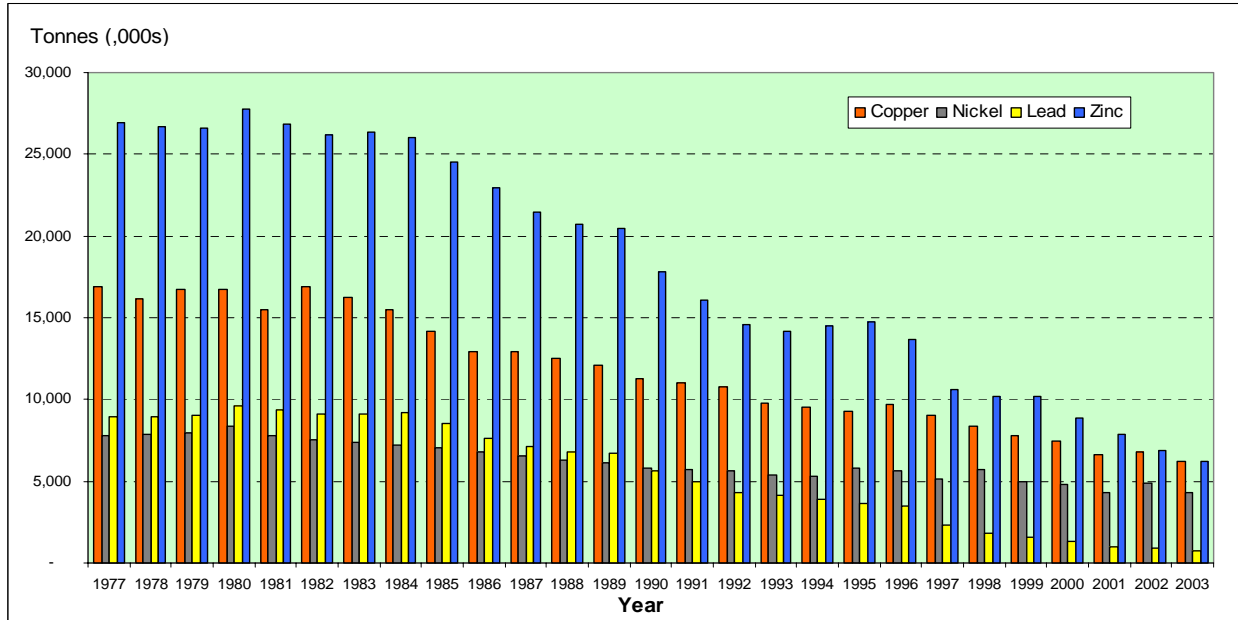
In May 2005, the coalition released its seminal paper, *Integrated Landscape Management: Applying sustainable development to land use*. This paper explains what ILM is, why it is important and provides a

checklist of elements for a fully functioning ILM system. It will be distributed to Mines Ministers prior to the conference and will be available to all delegates during the conference.

**APPENDIX A**

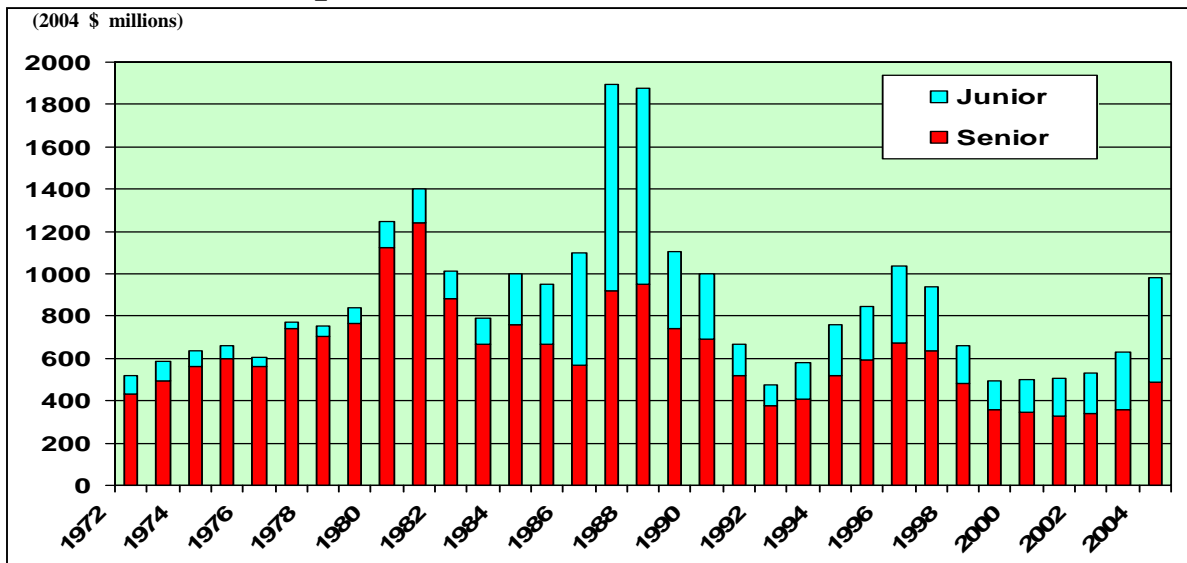
**FIGURES**

**Figure 1 – Canadian reserves of selected major metals  
(1977-2003)**



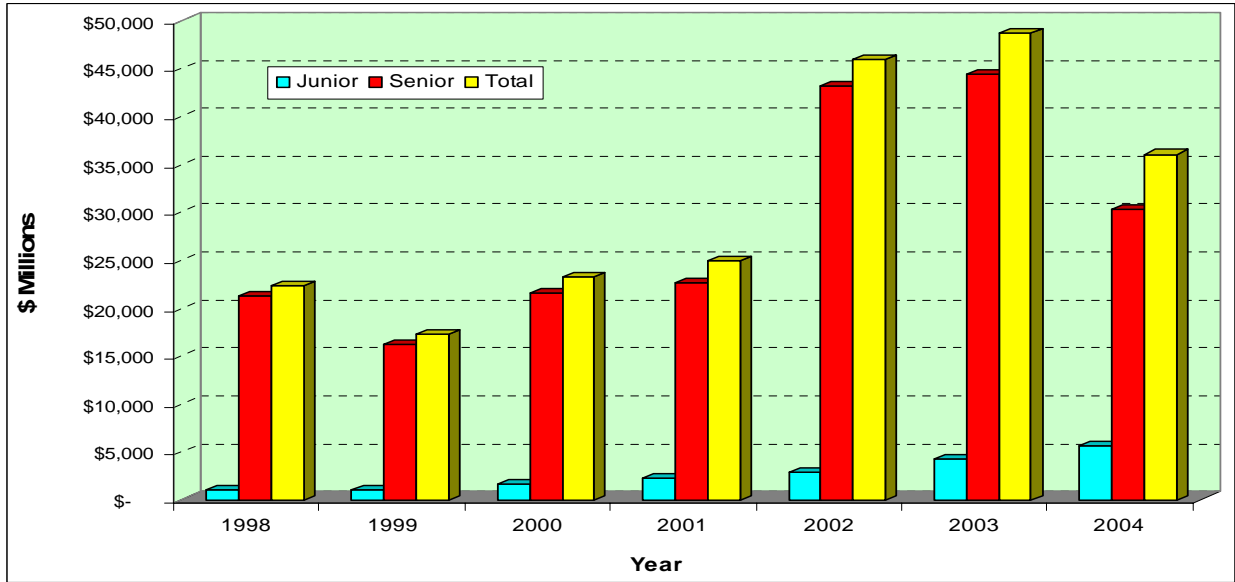
Source: Natural Resources Canada – based on company reports and Federal-Provincial / Territorial Survey of Mines and Concentrators

**Figure 2 – Exploration and deposit appraisal expenditures in Canada (1972-2004)**



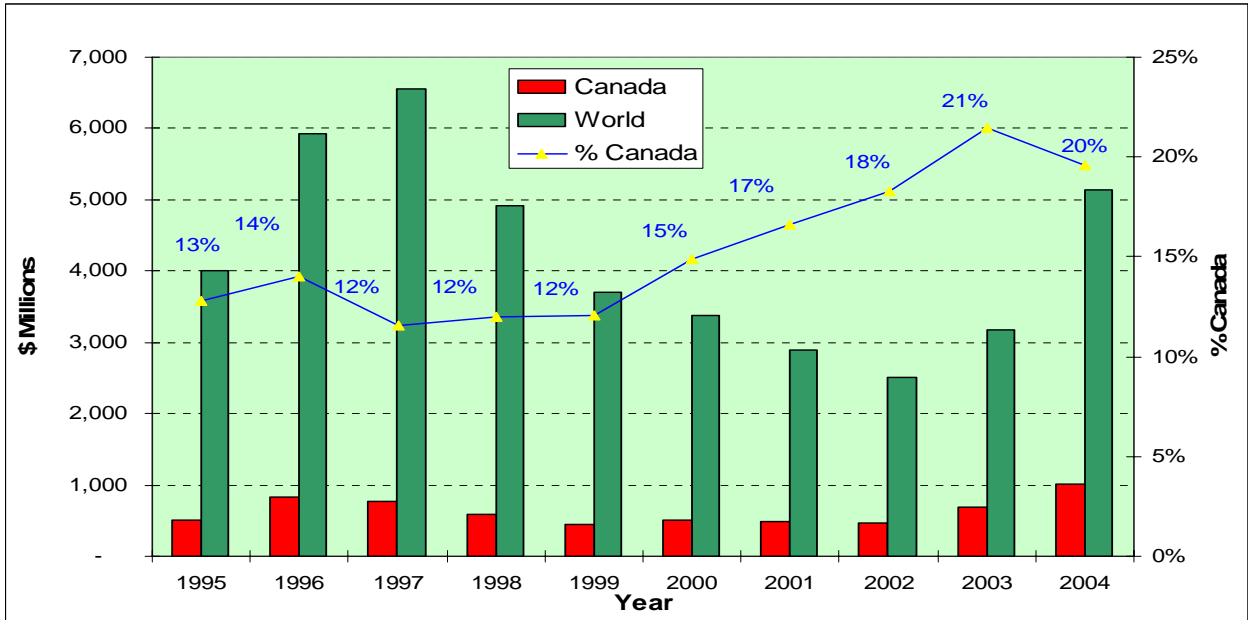
Source: Natural Resources Canada

**Figure 3 - Total financings for exploration and development projects worldwide (1998-2004)**



Source: Gamah International Limited

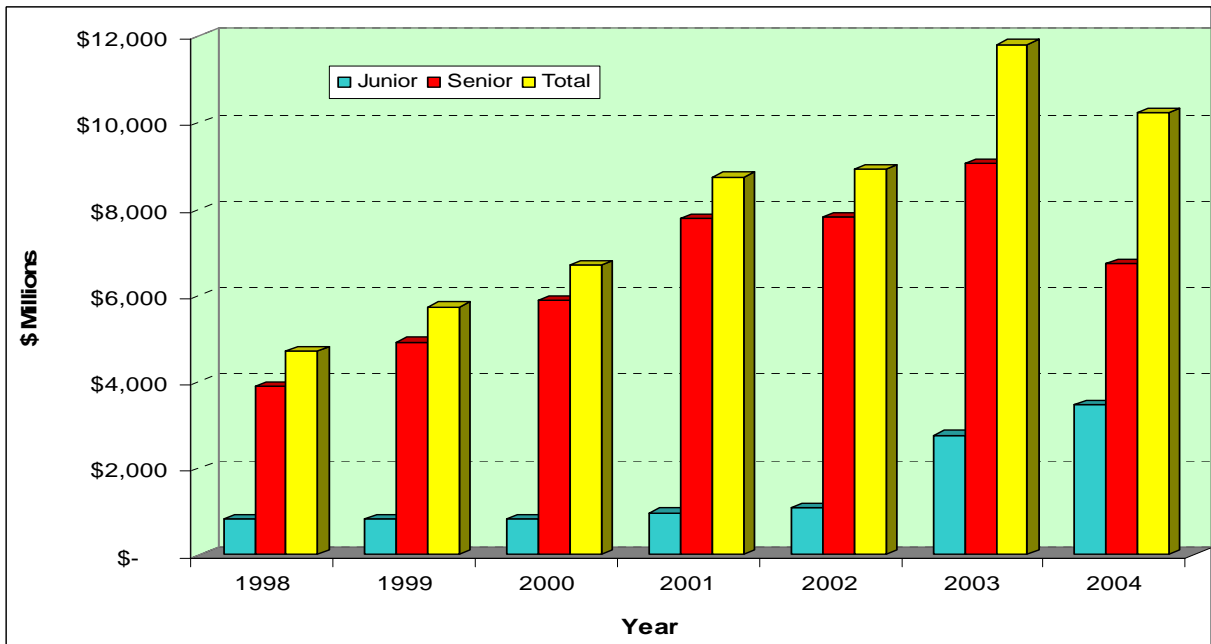
**Figure 4 – Exploration expenditures worldwide vs. exploration expenditures in Canada (1995-2004)**



Source: Metals Economic Group

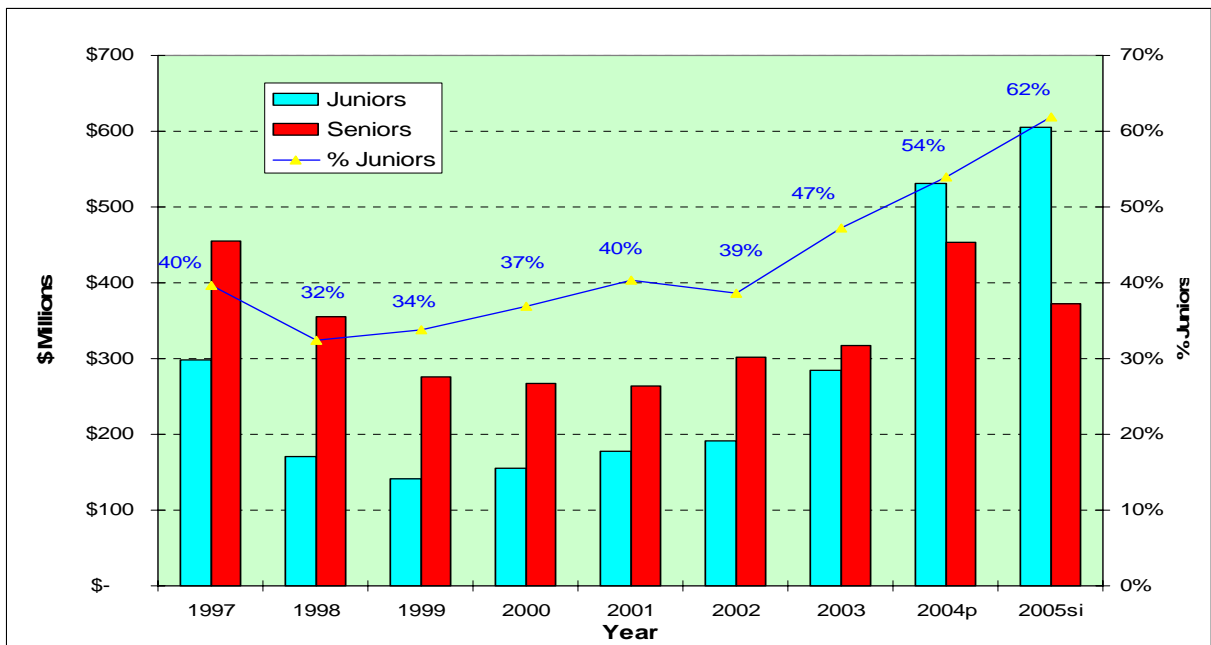
Notes: Converted from USD at exchange rate of 1.447

**Figure 5 – Capital raised on Canadian stock exchanges for exploration and development projects worldwide (1998-2004)**



Source: Gamah International Limited

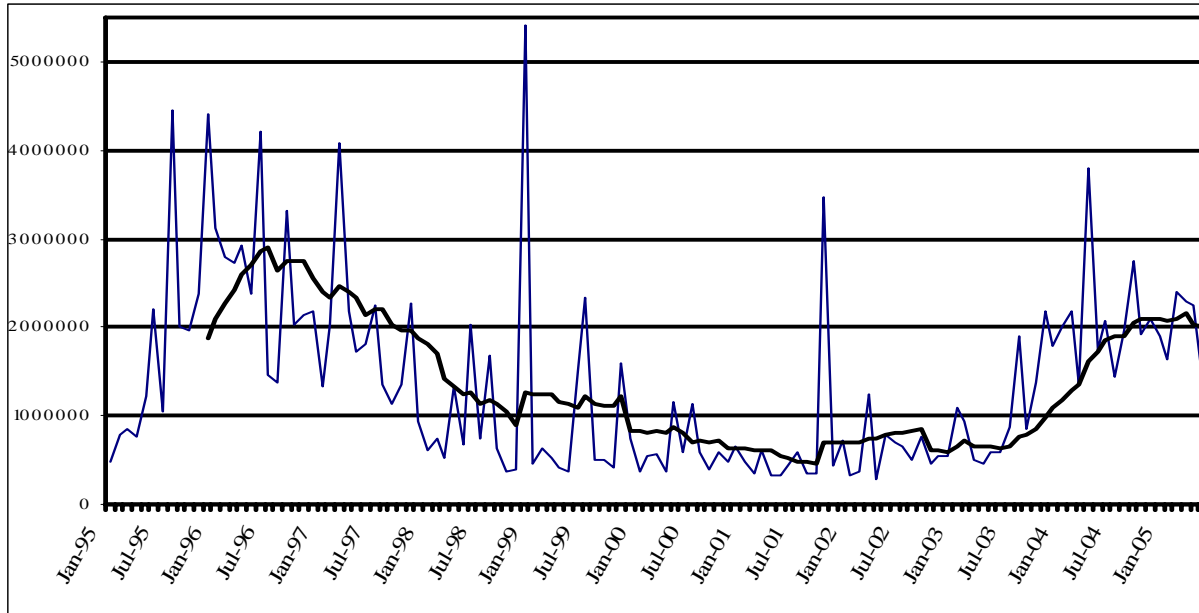
**Figure 6 – Exploration and development expenditures in Canada, junior vs. senior companies (1997-2005)**



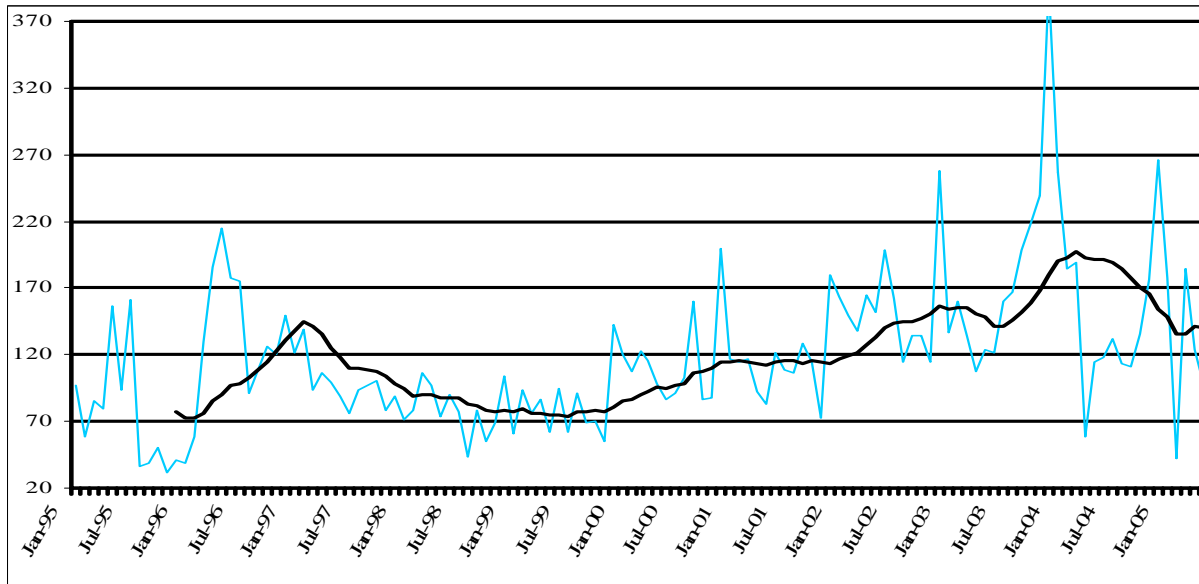
Source: Natural Resources Canada

Notes: p = preliminary estimates si = spending intentions

**Figure 7a – Average monthly size of completed financings and 12 month moving average by Canadian exploration companies**

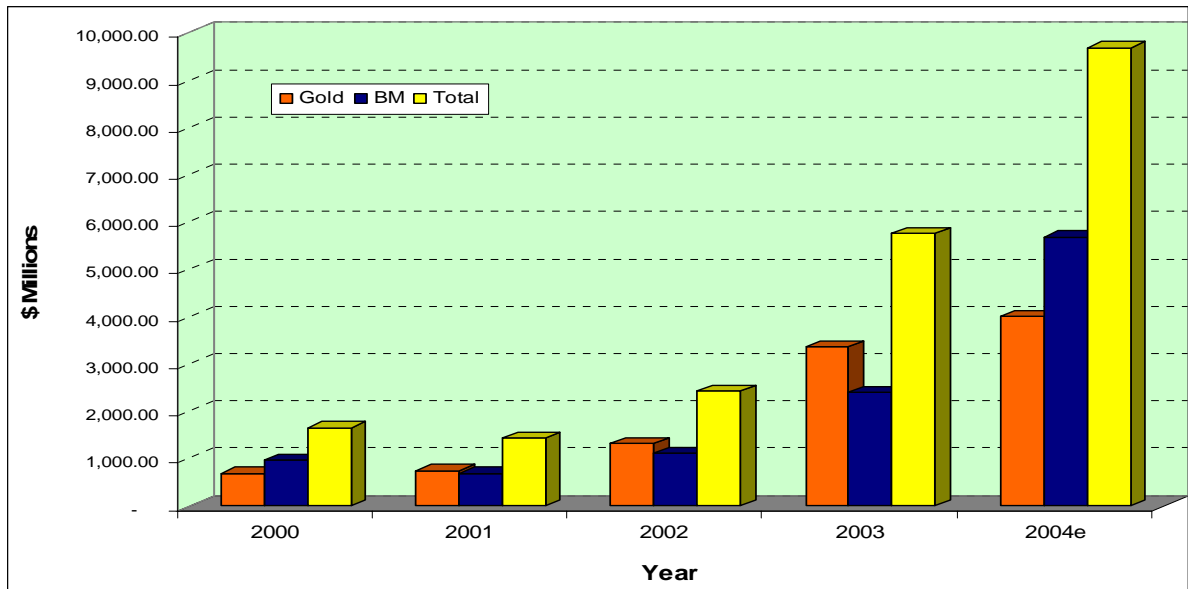


**Figure 7b – Average monthly number of completed financings and 12 month moving average by Canadian exploration companies**



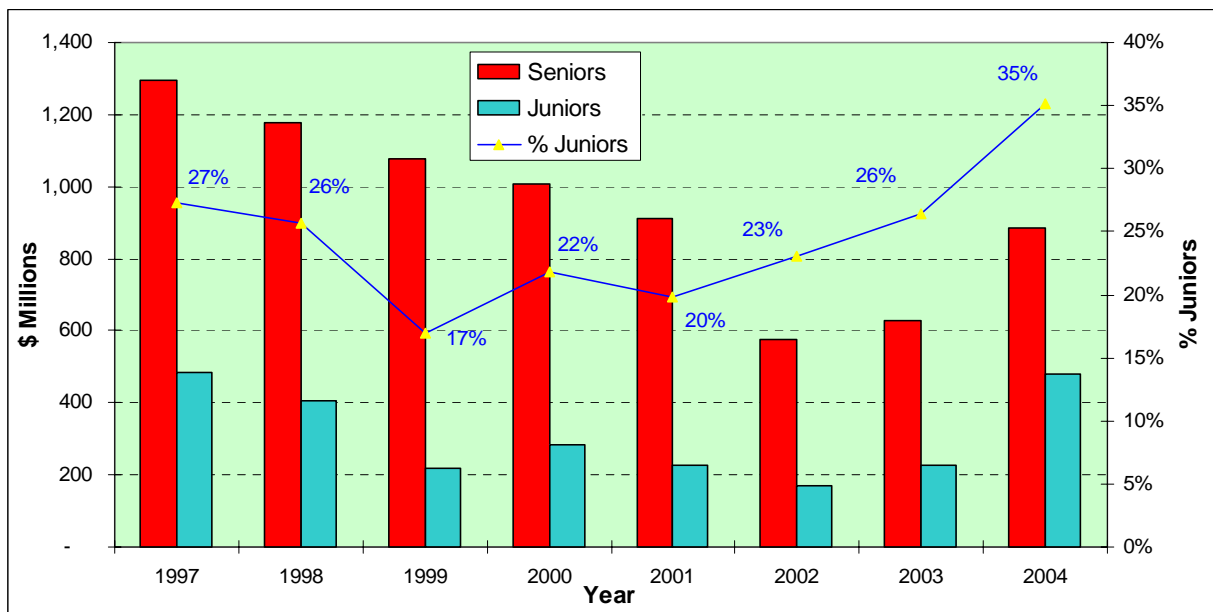
Source: Gamah International Limited

**Figure 8 – Financings for base metal exploration projects worldwide raised by junior companies (2000-2004)**



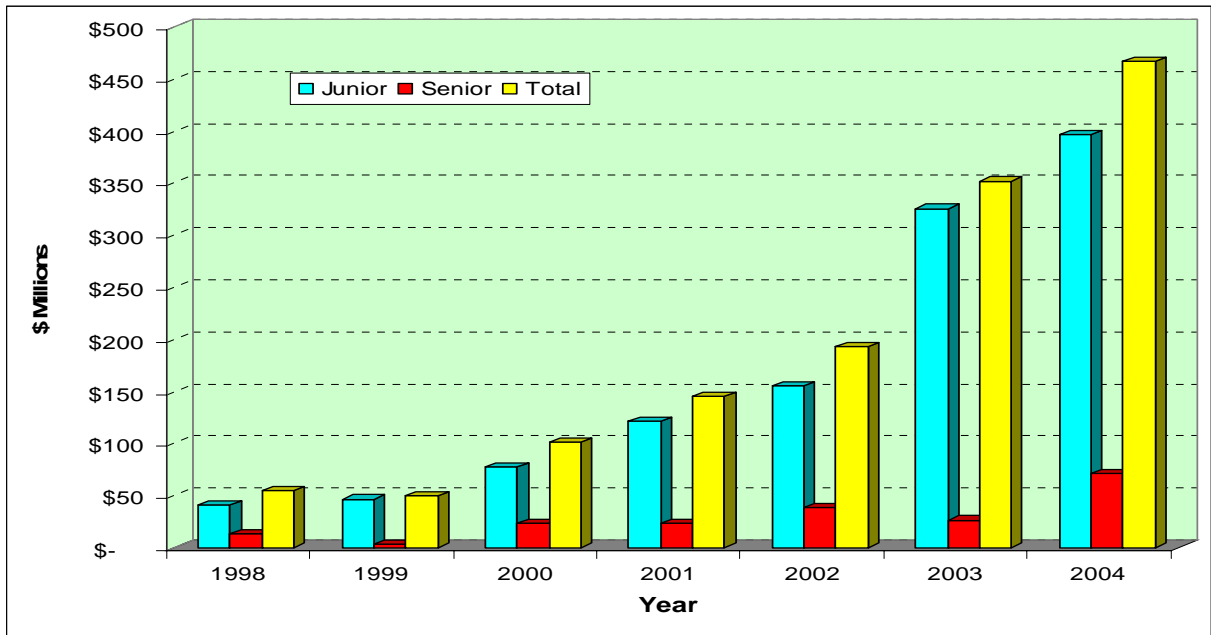
Source: Metals Economic Group  
 Notes: Converted from USD at exchange rate of 1.46  
 e = estimated

**Figure 9 – Expenditures on base metal exploration projects worldwide, junior vs. senior companies (1997-2004)**



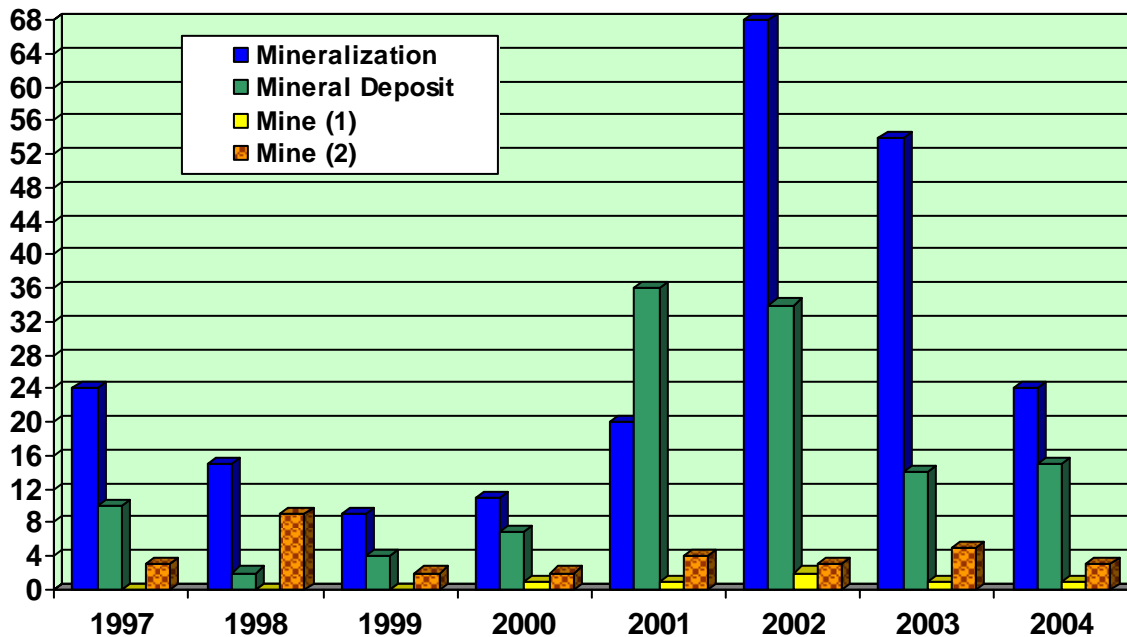
Source: Metals Economic Group  
 Notes: Converted from USD at exchange rate of 1.458

**Figure 10 – Total flow-through financings raised by junior and senior companies (1998-2004)**



Source: Gamah International Limited

**Figure 11 – New discoveries in Canada (1997-2004)**



*Note on sources: The data used for this figure derive from the PDAC's database on new discoveries in Canada from 1997 onwards. This database is compiled from information collected from the following sources: Northern Miner, MECO (Mining and Exploration Company Financings) published by Gamah International Ltd., and federal, provincial, and territorial reports.*

**Definitions of terms used:**

- **Mineral Occurrence**  
A mineral occurrence is defined as mineralization that has been identified on the basis of assay results from systematic surface and/or drill hole sampling. This may be a completely new occurrence (no field work or related technical work had been previously performed on the occurrence) or an extension to a previously known occurrence. An extension is defined as a zone that spatially extends the original occurrence. In the case of diamonds, a mineral occurrence is defined as a diamondiferous kimberlite body.
- **Mineral Deposit**  
A deposit is defined as a mineralized zone on which a resource or reserve calculation has been completed. It is the result of further work beyond that required for the identification of a mineral occurrence. In the case of diamonds, the term mineral deposit has been used when a bulk sample of at least 100 tonnes has been conducted on one or more diamondiferous kimberlite bodies.
- **New mine**  
A mine is defined as a deposit which is currently in production or committed to production. A mine is the result of further work beyond that required for the identification of a mineral deposit, including deposit appraisal and bankable feasibility studies.  
New mine<sup>(1)</sup> results from a discovery made during the period 1997-2004.  
New mine<sup>(2)</sup> results from a discovery made prior to 1997.