

## ADVICE TO MINISTER

ESTIMATES NOTE (2015) <b>Confidential</b>  Ministry of Environment  Date: February 19, 2015	ISSUE TITLE:  <b>Climate Risk and Adaptation</b>
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### KEY MESSAGES:

#### **Key message #1**

- The Province is taking action to manage the risks associated with climate change, including sea level rise, a changing water cycle and more frequent and intense weather extremes.

#### **Key message #2**

- The Climate Action Secretariat facilitates and supports initiatives across government to ensure that investments in infrastructure and programs and our management of natural resources address current climate hazards and anticipate future climate risks.

### CURRENT STATUS:

#### **Key message #1:**

- **Preparing for Climate Change: British Columbia's Adaptation Strategy (2010)** outlines steps the provincial government is taking to moderate harm and take advantage of new opportunities associated with a changing climate.
- The Climate Action Secretariat (CAS) is responsible for coordinating the overall government approach to managing adaptation, which focuses on:
  - sustaining and enhancing regionally relevant climate science and decision support tools;
  - ensuring government can continue to deliver on its priorities as the climate changes; and,
  - collaborating with other levels of government, the private sector and civil society to enhance BC's resilience to weather and climate.
- CAS has partnered with other ministries and organizations across BC to leverage federal funding for adaptation projects on issues relating to coastal management, economic instruments and the natural resource sector.
- Ministry efforts to modernize the water act will introduce more flexibility and efficiency in the water allocation system, and accommodate variable water flows expected as a result of climate change.

#### **Key message #2:**

- Other ministries are developing their own understanding of how climate change might impact their priorities and are planning their response accordingly:

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- The Ministry of Forests, Lands and Natural Resources Operations (FLNRO) is implementing the BC Forest Stewardship Action Plan for Climate Change Adaptation (released in 2012), and is working with regional offices on regional adaptation strategies.
- Through federal *Growing Forward* funding, the Ministry of Agriculture is supporting the efforts of industry to develop innovative products, tools and processes to adapt to climate change. The Ministry has also completed an assessment of how its policies and programs can further support adaptation.
- The Ministry of Transportation and Infrastructure has assessed climate change impacts to the province's transportation infrastructure, and is addressing and revising standards where appropriate.

### **KEY FACTS/BACKGROUND**

- Recent reports by the Intergovernmental Panel on Climate Change (IPCC)<sup>3</sup>, U.S. Global Change Research Program<sup>4</sup> and Natural Resources Canada<sup>5</sup> emphasize that climate change is already impacting North America, Canada and British Columbia and additional impacts to our natural environment, economic prosperity and the health of British Columbians are anticipated. Further action on adaptation will be required to address these risks.
- Adaptation is a shared responsibility between all levels of government and the private sector. The province's investments in improving climate science support adaptation planning at multiple levels.
- Local governments have a significant role to play in ensuring that British Columbia is prepared for unavoidable climate change impacts. Many local governments in BC have developed and are starting to implement plans to reduce risk and vulnerability related to climate change and its impacts.
- The Government of Canada is spending \$1.6 billion over 5 years (2011-2016) to help Canada adapt to climate change. The funding covers nine departments and agencies in the areas of health, first nations, environment, natural resources, fisheries and oceans, parks and transport. The Climate Action Secretariat works closely with relevant Federal Government departments to enhance program delivery in BC.
- The Government of Canada has announced a \$200 million investment over five years for the National Disaster Mitigation Program, beginning April 1, 2015. CAS will support Emergency Management BC (JAG) to implement this program and align disaster risk reduction and climate adaptation in BC.

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<sup>3</sup> Fifth Assessment Report (AR5)

<sup>4</sup> 2014 National Climate Assessment

<sup>5</sup> Canada in a Changing Climate: Sector Perspectives on Impacts and Adaptation

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#### **Key message #1**

- **Warming of the climate system is unequivocal. According to the IPCC, it is “*extremely likely* that human influence has been the dominant cause of the observed warming since the mid-20th century”.**

#### **Key message #2**

- **Continued emissions of greenhouse gases will cause further warming and changes in all components of the climate system. Most aspects of climate change will persist for many centuries even if emissions of CO<sub>2</sub> are stopped.**

### KEY FACTS/BACKGROUND

#### **Key message #1:**

- Recent reports by the Intergovernmental Panel on Climate Change (IPCC)<sup>6</sup>, U.S. Global Change Research Program<sup>7</sup> and Natural Resources Canada<sup>8</sup> emphasize that climate change is already impacting North America, Canada, and British Columbia:
  - Canada's climate is changing, with observed changes in air temperature, precipitation, snow and ice cover and other indicators.
  - Changes in climate are increasingly affecting Canada's natural environment, economic sectors and the health of Canadians.
  - Extreme weather events are a key concern for Canada and there is growing confidence that some types of extreme events will increase in frequency and/or intensity as the climate continues to warm.
- The World Meteorological Organization (WMO) has ranked 2014 as the hottest year on record. 14 of the 15 hottest years on record have occurred this century.
- Observed and expected impacts for British Columbia include:

<sup>6</sup> Fifth Assessment Report (AR5)

<sup>7</sup> 2014 National Climate Assessment

<sup>8</sup> Canada in a Changing Climate: Sector Perspectives on Impacts and Adaptation



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- Increased risk of summer drought, particularly in snowmelt systems due to declining snowpack and glaciers as well as earlier peak runoff and warmer summer temperatures;
- Increased risk of flooding due to more extreme precipitation and shifts to more winter rain in snowmelt systems;
- Impacts to infrastructure, including an increasing risk of damage, shortened asset life, and reduced safety performance due to sea level rise and higher storm surge, increased river flooding, more extreme heat and precipitation events;
- Impacts to terrestrial, aquatic, and marine ecosystems and related ecosystem services, including commercially important activities such as timber production, fisheries, and tourism due to ocean acidification, changes in water quality and streamflow volumes, forest fires and increased competition from invasive and non-native species; and,
- Increased risk of illness and death associated with more extreme heat events and reduced air quality.

### **Key Message #2:**

- Limiting climate change will require substantial and sustained reductions of greenhouse gas emissions. BC is taking action across the economy to reduce our emissions. Continued leadership in climate action along with our partners around the world will drive global emissions reductions. (*See note 11, BC's Future Climate Action, and note 15, BC's Efforts to Promote Climate Action Internationally*).
- Further changes in climate are inevitable, even if GHG emissions stop today. Adaptation is a necessary response to climate change, complementing global measures to reduce greenhouse gas emissions. BC can enhance the social and economic resilience of British Columbians to the negative impacts of climate change by adapting ahead of time (*see note 13, Climate Risk and Adaptation*).

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<b>ESTIMATES NOTE (2015)</b> <b>Confidential</b> <b>Ministry of Environment</b> <b>Date: February 2015</b>	<b>ISSUE TITLE:</b>  <b>Major Investigations</b>
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**KEY MESSAGES:**

- **Key message #1 - The Ministry of Environment (MoE) Conservation Officer Service is the lead agency for investigating major violations of natural resource laws. The COS Provincial Investigations Branch Major Investigations Unit is responsible for the majority of major investigations which are often high profile incidents that attract media attention.**
- **Key message #2 – The COS Major Investigations Unit manages large complex files by utilizing a major case management system (MCM) that allows the tracking of a large volume of evidence, staff time and financial resources allocated to these major investigations.**
- **Key Message #3 – The COS utilizes a joint team approach with other agencies to address major investigations and also considers and utilizes alternative resolutions to the criminal courts such as Community Environmental Justice Forums and civil forfeiture.**

**CURRENT STATUS:**

***Key message #1:***

- The COS has approximately 1766 open case files that range from tickets to major investigations of environmental non-compliance that threaten human health and safety. The COS Provincial Investigations Branch addresses these major investigations by utilizing plain clothes detectives in the Major Investigations Unit, undercover detectives of the Special Investigations Unit and detectives in the Intelligence Unit usually in a lead role or as a support to uniformed Conservation Officers. Cases can be referred to the Major Investigations Unit via the Investigation Referral Process (IRP).

***Key message #2:***

- The COS Provincial Investigations Branch developed a Major Case Management system in conjunction with the RCMP Office of Investigative Standards & Practices and the Combined Forces Special Investigations Unit that is reviewed and updated annually by the parties.
- The MCM system allows the COS investigative files to provide the same high standard product as RCMP and Police Major Crimes Units for submission to Crown

counsel in regards to major files.

- Major investigations can require investigators to gather, document, review and account for at times many thousands of pages or items of investigative evidence and track the officer effort and costs associated to major investigations. The MCM system results in all of that information being accountable and available for disclosure as required by court standards as well as internal and third party audits in an electronic format.

***Key message #3:***

- The COS Provincial Investigations Branch approach to major investigations is to where ever possible conduct a joint team investigative approach. The approach leverages the advantage of staff resources, experts and other enforcement options from our partner agencies to address major investigations which often require considerable resources. Our most common partners are the Ministry of Forests, Lands, and Natural Resource Operations Compliance and Enforcement division, the RCMP, Environment Canada, and the Department of Fisheries and Oceans.
- The COS has worked with the Civil Forfeiture Office to apply the *Civil Forfeiture Act* to natural resource major investigations where appropriate. The result has been the court forfeiture of items used in violation of natural resource law, which has a significant deterrence effect.
- The COS developed and implemented the Community Environmental Justice Forum process which is an alternative measures resolution to the over burdened criminal court system. CEJF is modeled similar to the Restorative Justice system utilized in First Nations communities. The CEJF has been successful and is recognized and endorsed by the Ministry of Attorney General Crown Counsel as an alternative to the criminal justice system. (See CEJF Estimates Note).

**KEY FACTS/BACKGROUND/OTHER AGENCIES:**

- Major investigations can be conducted proactively; however the majorities are unpredictable reactive responses, making them hard to plan and budget for.
- Major investigations are complex often requiring varying expert opinion on cause and impacts of the events that result in the longer time frames to conclude the investigations.

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ESTIMATES NOTE (2015) <b>Confidential</b> Ministry of Environment Date: February 2015	<b>ISSUE TITLE:</b>  <b>Mt. Polley Investigation</b>
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**KEY MESSAGES:**

**Key Message #1 – An independent investigation into the cause of the August 4, 2014, Mount Polley tailings pond breach is underway, being led by British Columbia's Conservation Officer Service (COS), and assisted by Environment Canada, Department of Fisheries and Oceans and the RCMP.**

**Key Message #2 – MIU officers, trained in specialized investigative techniques, focus on cases that are complex, involve corporations, are international or are multi-jurisdictional in scope. As law enforcement officers, conservation officers in the MIU are highly trained in complex investigations including person interview practices and evidence gathering techniques that can secure criminal prosecution.**

**Key Message #3 The Conservation Officer Service is an independent law enforcement body, and forwards recommendations for charges when warranted directly to provincial Crown Counsel.**

CURRENT STATUS:

**Key message #1:**

- The COS is the primary natural resource law enforcement agency in B.C. that specializes in commercial environmental and industrial investigations. The Conservation Officer Service enforces over 33 pieces of provincial and federal legislation, including the *Environmental Management Act* and the *Fisheries Act*. They are also Special Provincial Constables under the *Police Act* with a wide suite of powers associated with that designation.

**Key message #2:**

- The Conservation Officer Service uses the highest level of major case file management techniques, as well as internationally recognized systems such as the incident command system. Major Case Management supports major investigations by efficiently processing, organizing, indexing, and ultimately disclosing the large quantities of information derived from these investigations.

**Key message #3:**

- At the conclusion of the investigation, a determination is made by COS to issue a Report to Crown Counsel (RTCC) recommending charges. This RTCC is not made

public. It is sent directly to Crown Counsel. A determination is then made by Crown Counsel to pursue charges. At the time the charges are laid in court, the public would be made aware of the charges themselves. Information regarding the evidence that supports any charges would not be made available until the court case is heard.

KEY FACTS/BACKGROUND/OTHER AGENCIES:

- The Mt. Polley investigation is currently ongoing.
- Investigators are collecting evidence through a variety of means including interviews and judicial applications.
- The investigation is expected to continue for several months.
- Comments on the specifics of the investigation cannot be made as the investigation is ongoing.

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ESTIMATES NOTE (2015) <b>Confidential</b> <b>Ministry of Environment</b> <b>Date: February 2015</b>	<b>ISSUE TITLE:</b>  <b>Lemon Creek</b>
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**KEY MESSAGES:**

**Key Message #1** – The Conservation Officer Service conducted a detailed investigation into the July 26, 2013, Lemon Creek fuel spill near Slocan BC. After careful consideration of all of the facts and circumstances which lead to the incident, no report to Crown Counsel was forwarded and the investigation was closed.

**Key Message #2** – Often these types of investigations are multi-jurisdictional due to the nature of the incident and the applicable legislation involved (*Environmental Management Act, Fisheries Act*). In this particular investigation, the Conservation Officer Service is the lead agency and Environment Canada is assisting.

**Key Message #3** – On September 29, 2014, a private information was sworn in Nelson against Executive Flight Centre and the Government of British Columbia, Ministry of Transportation and Infrastructure pursuant to section 36(3) of the *Federal Fisheries Act*. (deposit deleterious substance)

**CURRENT STATUS:**

**Key message #1:** The Conservation Officer Service has reopened the investigation and are consulting with Public Prosecution Service of Canada (Federal Crown). A report to Crown Counsel maybe submitted if sufficient evidence is gathered to support an offence.

**Key message #2:** Environment Canada investigators continue to assist the COS in this matter.

**Key message #3:** The private information is now before the courts.

**KEY FACTS/BACKGROUND/OTHER AGENCIES:**

- The COS/Environment Canada have reopened the investigation.
- If sufficient evidence is gathered to support a charge pursuant to the *Federal Fisheries Act or Environmental Management Act*, a report to crown counsel will be submitted.
- We cannot comment on the specifics as this matter is currently before the courts.

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<b>ESTIMATES NOTE (2015)</b> <b>Confidential</b> <b>Ministry of Environment</b> <b>Date: February 2015</b>	<b>ISSUE TITLE:</b> <b>Controlled Alien Species (CAS)</b>
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**KEY MESSAGES:**

**Key message #1 – The Ministry of Environment (MoE) and Ministry of Forest Lands and Natural Resource Operations (MFLNRO) are working to ensure compliance with the Controlled Alien Species (CAS) regulation through the Permit and Authorization Service Bureau (MFLNRO) and by responding to reports of alleged non-compliance made to the Conservation Officer Service.**

**Key message #2 – Enforcement actions are being managed by the Ministry of Environment's Conservation Officer Service (COS) in response to those situations where there is the highest risk to public safety.**

**Key Message #3 – In December 2012 an amendment was made to the CAS regulation to include invasive species that could impact BC waters if introduced.**

CURRENT STATUS:

***Key message #1:***

- The Ministries are using an Incident Management Team (IMT) approach to respond to CAS non-compliance. The IMTs consist of Conservation Officers, MFLRNO staff and members from the academic and scientific community.

***Key message #2:***

- Quick Response Teams (QRTs) which have a core group of 16 officers trained in CAS handling respond to CAS non-compliance. QRTs are based in the North, the Coast and the Interior and are made up of COs trained in dealing with CAS.
- The QRTs respond in a prioritized manner to CAS non-compliance where public safety is at risk. The Major Investigations Unit Detective Sgts have also received training in CAS investigations.
- Not all reported non-compliance will be pursued immediately as it takes time to verify whether non-compliance is taking place. Numerous ads on the internet for the sale of CAS are hoaxes or in other jurisdictions.
- The time and resources necessary for compliance and enforcement of the Act must also be balanced against other public safety concerns such as human wildlife conflicts.
- As of January 2014, 16 Conservation Officers across B.C. have received CAS



training. Only these officers will be responding to CAS non-compliance to ensure that staff safety is protected. Training will continue to be delivered. Conservation Officers are further supported by approved veterinarians who specialize in handling exotic species.

- As of February 4, 2014; MFLNRO had approved 75 permit applications covering approx. 340 CAS animals (includes multiple animals of the same species).

***Key message #3:***

- In December 2012, an amendment was made to the CAS regulation to include invasive species that could impact BC waters if introduced. These species include snakeheads, Asian Carp, goby, Oriental weatherfish, bullheads, western mosquitofish, other cyprinids, zebra mussels, quagga mussels, and Conrad's false mussel.
- The added Aquatic Invasive CAS species will require additional COS effort to intercept and inspect vessels that enter into BC from Provinces and States where the mussel species exist and to focus on both the pet trade and live fish food trade that can bring in the aquatic invasive fish species. The impact of the introduction of any of these species in BC would be very high both environmentally and economically. The United States Congress estimated that the cost of mussel infestation to the US power industry alone is 3.1 billion dollars for the period from 1993-1999. Ontario hydro estimates a cost of \$376,000 spent annually per generating stations to mitigate mussel impacts on facilities and has spent \$20 million installing and maintaining chlorine applicators on Great Lakes facilities to deter mussels.
- As of May 2013, Conservation Officers in key entry areas into the Province have been trained in the identification of the invasive mussel species. Training is being delivered to the rest of the COS, FLNRO C&E and Dept of Fisheries and Oceans staff to increase the ability to intercept and inspect for the new invasive aquatic species.
- 4 CAS inspection stations will be set as 3-year program focused in the South East part of BC along the US border and Alberta border to intercept vessels being transported into BC. COS will provide support to the inspection stations when non-compliance is detected.

**KEY FACTS/BACKGROUND/OTHER AGENCIES:**

- No new positions or funding were provided to support the implementation of CAS. Instead, CAS has been prioritized as a work activity amongst the Ministries' other mandated activities.
- The CAS regulation controls the possession, breeding, shipping and releasing of animals not native to B.C. that pose a risk to the health or safety of people.

- The CAS regulation amendment protects BC waters from the introduction of foreign invasive species that pose both environmental and economic risks.
- Approximately 1,300 species are currently designated as CAS.
- Effective April 1, 2010, individuals cannot possess, breed, release or transport CAS with the exception of individuals who possessed non-invasive CAS prior to April 1, 2010 who can keep the animal until its death subject to being granted a permit from the ministry.
- The regulation ensures that recognized institutions and industries can continue to possess these animals under specific circumstances.
- Research, educational institutions and accredited zoos require a permit (and in some cases a management plan) to acquire, breed and possess CAS. The film industry requires a permit to temporarily bring CAS into B.C.
- In 2014 there were 10 CAS responses conducted by the COS.
- Currently, there are four facilities in British Columbia that are permitted to house CAS species.

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**KEY MESSAGES:**

- **Key message #1 – The Elk Valley Area Based Management Plan (ABMP) was approved November 18, 2014. This is a significant step towards taking action to invoke immediate change in the region's water quality trends so we can ensure the environment, wildlife, and health are protected.**
- **Key message #2 – Statutory decisions within the Elk Valley are now guided by the ABMP. The Environmental Management Act (EMA) permit issued in November 2014 considered the ABMP and set substantial legal requirements for immediate monitoring, management and prescribed a treatment schedule for ensuring improving water quality in the Elk Valley.**
- **Key message #3 – Substantial public and stakeholder consultation was undertaken during the ABMP development. Most importantly was the extensive consultation and technical discussions with the Ktunaxa Nation. The Ktunaxa support for the ABMP is a reflection of the commitment of the province, the Ktunaxa and the proponent (Teck) to see water quality levels stabilize and improve.**

**CURRENT STATUS:**

***Key message #1:***

- The regional economy of the Elk Valley and surrounding areas is heavily dependent on mining and related activities.
- The plan was developed by Teck Coal Limited over 12 months involving substantive public, stakeholder and government technical staff review. A Technical Advisory Committee (TAC) comprised of technical specialists from MOE, MEM, EAO, Env Canada, Ktunaxa Nation, Montana Dept of Env Quality, US EPA, and an independent third party scientist from UBC.
- The ABMP was submitted to government July 22, 2014. A thorough technical review of the plan was conducted by government technical & specialist staff and contractors.
- The plan includes substantive baseline information regarding the water quality and impacts to the aquatic environment in the Elk Valley, strategies and commitments to immediately begin to stabilize and reverse the concentrations of selenium, cadmium, sulphate, nitrate and the formation of calcite.
- This is the first ABMP issued under the EMA. This approved plan sets policy for EMA statutory decision makers to consider when making decisions within the area

designated under the plan.

***Key Message #2:***

- The EMA effluent discharge permit was issued November 19, 2014 to set legal requirements for Teck Coal Limited to meet water quality levels at various points within the Elk Valley.
- The permit requires comprehensive monitoring of water quality, sediment, fish and benthics. The permit also requires the establishment of an Environmental Monitoring Committee (EMC) which is responsible for reviewing data and many reports prior to submission to the ministry. The EMC is responsible for holding a minimum of one public open house(s) to share annually the data and progress made in improvements to the water quality in the Elk Valley.
- Teck is addressing management of waste rock and water, and deploying new and emerging water treatment technologies.
- The permit also sets requirements for the installation and operation of treatment plants.
- The B.C. government understands that it will take time for Teck to remediate water quality impacts resulting from many decades of mining. Regulatory decisions will be made in consideration of balancing the ongoing health of the watershed while allowing for continued sustainable mining.
- Failure to follow conditions in the EMA permit may be considered a violation of EMA and subject to enforcement action.
- The Ministry is monitoring the compliance of this permit very carefully.

***Key message #3:***

- The Ktunaxa Nation Council (KNC) have been constructive and collaborative throughout the development of the ABMP.
- The B.C. government appreciates the leadership of the KNC and the technical contributions made to the ABMP and valley permit during the consultation phases.
- The KNC are members on the EMC as well as participants in a Lake Koocanusa monitoring and research working group.

**KEY FACTS/BACKGROUND:**

- Teck Coal Ltd. owns and operates five coal mines in the Elk River Valley and the Elk River has seen selenium levels rise as a result of the historical mining activity.
- Selenium is released from the weathering of mining waste rock, which contaminates rain water flowing through the waste rock piles and into the tributaries and main stem of the Elk River, and into the boundary Lake Koocanusa. Selenium is a naturally occurring and essential element that bio-accumulates; high levels of selenium are harmful to birds, fish and other aquatic life and may be harmful to human health.
- On November 18th, 2014, the Minister of Environment approved Teck's area-based management plan for the Elk Valley watershed (the Elk Valley Water Quality Plan.)
- The plan was developed in response to a ministerial order issued to Teck on April

15, 2013, instructing the company to take steps to stabilize and reverse water quality concentrations for selenium, cadmium, nitrate and sulphate.

- The order defined specific environmental objectives and outcomes such as protection of aquatic ecosystems, protection of human health and protection of groundwater. The order also required Teck to identify short, medium and long-term water quality targets.
- The plan lays out a schedule for the installation of 9 active water treatment plants over the next 18 years.
- The long-term targets consider: 1) current contaminant concentrations, 2) current and emerging economically achievable treatment technologies, 3) sustained balance of environmental, economic and social costs and benefits and 4) current and emerging science regarding the fate and effects of contaminants.
- This approved plan covers the entire Elk Valley watershed, including Fording River and Lake Koocanusa, and will ensure any future decisions affecting water quality are made within the context of the entire watershed and not just individual sites.
- As part of the order, a technical advisory committee (TAC) was established to guide development of the plan. The TAC met seven times between September 27, 2013 and July 10, 2014.
- The committee included representatives from each of the following: Teck, the Province (MoE, MEM and EAO), Government of Canada (Environment Canada), U.S. Government, Montana State Government, The Ktunaxa Nation Council, and an independent third- scientist from UBC.
- The TAC provided over 700 science-based technical recommendations for Teck to consider in the development of their plan. The vast majority of this advice was incorporated into the plan and an explanation of how the advice was used is included in the plan.
- The Province is aware of Environment Canada's (EC) September 22, 2014 enforcement letter notifying Teck of alleged violations of the Fisheries Act related to selenium and westslope cutthroat trout.
- The Province reviewed the EC reports and this information was considered before a final decision on the plan was made.
- The approved ABMP is now policy which EMA statutory decision makers must consider when making any EMA decision within the Elk Valley.
- An EMA permit was issued November 19, 2014 to authorize the discharge of effluent – specifically the constituents included in the ABMP - from all 5 of the Teck mines in the Elk Valley.
- This permit is the legal instrument which requires Teck to install treatment, monitor, and meet specific water quality levels in the Elk Valley. The permitted Water Quality levels hold Teck to specified limits of Selenium, Nitrate and Sulphate, and set water quality levels which reduce over time.
- A compliance plan is in effect to monitor Teck's compliance with the permit.

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<b>ESTIMATES NOTE (2015)</b> <b>Confidential</b> <b>Ministry of Environment</b> <b>Date: February 5, 2015</b>	<b>ISSUE TITLE:</b> <b>Lemon Creek Fuel Spill clean-up</b>
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**KEY MESSAGES:**

- **Key message #1 – The ministry outlined clear endpoints for the cleanup of different shoreline environments along Lemon Creek and the Slocan River.**
- **Key message #2 – The ministry will continue to review data received, make any needed recommendations for changes to the long-term monitoring and remediation program and post information publicly.**
- **Key message #3 – As the matter is before the Court and we cannot provide any further details.**

**CURRENT STATUS:**

***Key message #1:***

- Regional ministry staff monitored the response and cleanup and provided input and technical advice.
- The cleanup phase was completed in September 2013 and transitioned to long-term monitoring and remediation.
- Executive Flight Centre was required to develop and implement a monitoring program to assess potential impacts and monitor ecosystem recovery associated with the Jet A1 fuel spill.
- The initial spill cleanup endpoints of no continuous sheen or odour in Lemon Creek and the Slocan River were met in late August 2013. The longer term endpoints of no detectable hydrocarbons in the environment have largely been met, and monitoring efforts will continue in Lemon Creek and the Slocan River.

***Key message #2:***

- SNC Lavalin provided the ministry with an Environmental Impact Assessment report in December 2013, which is posted publicly online.
- Monitoring by SNC Lavalin was completed following Environmental Monitoring Plans (EMPs), which were reviewed and approved by the ministry.
- Following the EMPs, water and sediment quality monitoring was done at numerous sites within Lemon Creek and the Slocan River for contaminants related to jet fuel.
- The environmental monitoring program evaluated aquatic life impacted by the spill in the summer and fall of 2014. A final report on the environmental monitoring program is expected on April 17, 2015 with a draft report available February 15, 2015.
- All Environmental Monitoring Plans and Impact Assessment Reports are available

on MoE's Lemon Creek website

- The ministry will continue to oversee implementation of monitoring activities to ensure the information generated meets the ministry's needs for assessing potential environmental impacts and monitoring ecosystem recovery. The ministry will continue to review the data it receives and make any needed adjustments to the long-term monitoring.

***Key message #3:***

- A lawsuit has been commenced concerning the Lemon Creek fuel spill and response involving various parties, including Executive Flight Centre and the Province.
- On December 20, 2014, a Provincial Court Judge ruled that a private citizen could bring charges under the Federal Fisheries Act against the BC Government and Executive Flight Centre in relation to the spill.

**KEY FACTS/BACKGROUND/OTHER AGENCIES:**

- On July 26, 2013, a tanker truck carrying approximately 35,000 litres of Jet A1 fuel rolled into Lemon Creek in the Slocan Valley. The tanker was en route to fuel helicopters fighting a forest fire in the area.
- Lemon Creek is a tributary of the Slocan River, which drains into the Kootenay River.
- The spill was reported to Emergency Management BC. Ministry staff arrived at the scene at 5 AM on July 27 to monitor the response and cleanup.
- The Ministry, Executive Flight Centre and Interior Health Authority organized response and issues management under a unified command structure.
- Executive Flight Centre hired Quantum Murray to help with the clean-up and SNC Lavalin to undertake environmental and wildlife assessments and monitoring.

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- Executive Flight Centre has also appealed the Director's decision to the Environmental Appeal Board (EAB) to recover costs incurred by the province in response to the spill. This appeal is before the EAB.

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ESTIMATES NOTE 2015 <b>Confidential</b>  Ministry of Environment  <b>Date: February 5, 2015</b>	<b>ISSUE TITLE:</b>  <b>Neucel Pulp Mill in Port Alice – production curtailment</b>
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### KEY MESSAGES

- **Key message #1 – Neucel Specialty Cellulose (Neucel) is a pulp mill and the primary employer in Port Alice, Vancouver Island. The mill has been facing financial challenges and on Feb 5 2015 the company announced a 6 month production curtailment (shutdown).**
- **Key message #2 – The Ministry has issued a draft Information Order to Neucel seeking information to ensure an appropriate shutdown plan and contingency plans are in place. Discussions between the Ministry and Neucel are ongoing and it is premature to publicly comment further on the issue.**

### **CURRENT STATUS:**

#### ***Key message #1***

- Despite some investment by Fulda (mill owner), the Port Alice pulp mill is inefficient due to deferred upgrades by previous mill owners, resulting in higher than average production costs. This, combined with the lower price of cellulose, has led to financial challenges.
- Due to budget pressures, Neucel closed operations on November 7, 2014 for a two month period. Ministry of Jobs, Tourism and Skills Training (JTST) has been providing assistance and support before and during this time, and continues to do so.
- The mill was restarted on Jan 18, 2015. Neucel will operate the mill until Feb 21 to use up their supply of logs on site. They are not sourcing additional fiber at this time, and only have enough chemicals on hand to operate for the 1 month.
- On Feb 5, 2015 Neucel announced that *“in order to ensure the long term viability of the mill, Neucel will take a 6-month production curtailment starting approximately Feb 21. During the curtailment, the company will investigate alternative operating strategies for the future of Neucel”*.

#### ***Key message #2***

- Ministry staff are actively engaged in discussions with the company about the planned curtailment.
- There are often hazardous materials on site at pulp mills, and there are pollution control systems in place that need to be managed in accordance with the *Environmental Management Act* during mill closures.
- To ensure that environmental issues are managed appropriately, Ministry staff have



shared a draft Information Order with the company, asking them to provide details including: plans/schedule for an orderly shutdown; updated contact information (they have begun to lay off staff); inventory of chemicals and products on site; Operational Plans for the shut-down period (treatment works, landfill management. etc.); a Risk Assessment; and an updated Emergency Response Plan.

- The decision regarding formal issuance of the Order will depend on the outcome of future discussions between the company and the Ministry.

#### KEY FACTS/BACKGROUND/OTHER AGENCIES:

- Neucel Specialty Cellulose (Neucel) is a pulp mill located in Port Alice, a remote community on the northwest coast of Vancouver Island. Neucel is the main employer in the community (approximately 400 employees).
- Since operations began in 1918, the pulp mill has undergone a number of changes in ownership, particularly in the last decade. In 2004, owner Doman Industries declared bankruptcy s.13,s.17  
s.13,s.17
- In April 2006, the Province provided an environmental indemnity to the purchaser (Neucel) and successors. s.13,s.17  
s.13,s.17
- Since 2011 Neucel has been owned by Fulida Group Holdings Ltd of China. Fulida is one of the leading producers of rayon in the world and is a financially secure company.
- Despite a \$100 million investment by Fulida, the mill is inefficient due to deferred upgrades by previous mill owners resulting in higher than average production costs.
- The mill has had some permit non-compliances in recent years; contributing factors appear to include things such as aging infrastructure, employee turnover and training, and a relatively vulnerable power supply. s.13,s.15,s.16  
s.13,s.15,s.16
- s.13,s.17
- Ministry staff are actively involved in discussions with the mill regarding an orderly shutdown and appropriate management of environmental issues during the curtailment (shutdown) period.

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<p>ESTIMATES NOTE 2015 <b>Confidential</b></p> <p>Ministry of Environment</p> <p><b>Date: February 19, 2015</b></p>	<p><b>ISSUE TITLE:</b></p> <p><b>Division of Responsibilities between the Ministry of Environment / Ministry of Forests, Lands and Natural Resource Operations (MFLNRO)</b></p>
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#### KEY MESSAGES

- **Key message #1 – The division of responsibilities between the Ministry of Environment (Ministry) and Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) are associated with water, habitat, species at risk, fish and wildlife protection and sustainability.**
- **Key message #2 – The Ministry's role in these areas is to develop policy, legislation, standards and undertake effectiveness monitoring. In addition, the Ministry coordinates the provincial ambient monitoring for these business areas; as well as air quality and snow pack levels for use in MFLNRO operational decision making.**
- **Key message #3 – MFLNRO is accountable for delivery of legislation, policies, standards and programs for the activities mandated by the: *Water Act, Wildlife Act, Fish Protection Act, Fisheries Act, Forest and Range Practices Act*, and portions of *The Ministry of Environment Act*.**
- **Key message #4 – The overall accountability for the *Oil and Gas Activities Act* resides with the Ministry of Energy and Mines (MEM). The Minister of Environment has delegated authorities under this *Act*.**
  - **The Ministry authorities under this *Act* include setting objectives pertaining to water quality, aquifers and ground water recharge areas, watersheds, species and habitat and other natural values (OGAAR sec 103) and for undertaking audits (OGAA sec10). MFLRNO and MEM's role is to implement these objectives.**
- **Key message #5 – The Conservation Officer Service, Parks and Protected Areas and Environmental Protection legislation, policy and business lines are entirely the responsibility of the Ministry.**

#### CURRENT STATUS:

- The Ministry works collaboratively with MFLNRO in these areas. MFLNRO staff provide advice to the Ministry in the development of policy and legislation. Ministry staff also provide technical support to MFLNRO in the implementation of legislation and programs.

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- The Conservation Officer Service (COS) provides government with environmental enforcement services. Compliance and administrative sanctions are still provided by the parent ministry who holds the legislative accountability. An example being administrative sanctions under the *Wildlife Act* which are the responsibility of the Director responsible for wildlife. If there are enforcement actions associated with those administrative responses, they fall to the COS. This is status quo with how decisions were made previously.
- With respect to policy development and application: policy work such as provincial grizzly bear management (or caribou management) is led by Ministry staff with assistance of MFLNRO field biologists. Once approved, policy work is applied in regions by MFLNRO regional staff with technical support from Ministry policy specialists.

### KEY FACTS/BACKGROUND/OTHER AGENCIES:

Specific Accountabilities by legislation are as follows:

Function	Environment	Forest, Lands and Natural Resource Operations
<b>Fish and Wildlife Act and Management</b>		
<i>Guide outfitting/trapping</i>	Establish legislation, policy and standards related to the sustainability, conservation and recovery of species and ecosystems.	Apply and administer the <i>Wildlife Act</i> including all statutory decisions pertaining to licensing and administration of Guide Outfitting, recreational hunting trapping and angling.
<i>Species assessment and utilization</i>	<p>Conduct status assessments on all provincial species and ecological communities</p> <p>e.g. making determinations if a species population is healthy, of special concern, or threatened.</p> <p>Grizzly bear populations have been listed as a species of concern; Mountain, boreal and northern caribou population have been listed as a threatened species. MoE develops objectives,</p>	<p>Establish and administer policy for the utilization and allocation of wildlife.</p> <p>Make determinations on the annual allowable harvest.</p> <p>Manage licensing programs for angling and hunting. Work with other levels of government and stakeholders in the development of hunting and angling regulations and allocation.</p> <p>Gather data on game species and statistics on</p>

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	strategies and management frameworks for the recovery of these species and the protection of habitat.	recreational use/success.  MFLNRO implements strategies for the management of species and habitats.
<i>International Trade in Animals</i>	Scientific authority for CITES (Convention on International Trade in Endangered Species) and COSEWIC (Committee on the Status of Endangered Wildlife in Canada).	Issues CITES permits.
<i>Decision Making/Enforcement</i>	Enforce the <i>Wildlife Act</i> through the Conservation Officer Service.  Enforce CITES Permits.	Determine season length and types of opportunities.  Make statutory decisions on licence suspensions and or cancellations.
<i>Park Management hunting and fishing</i>	Apply and administer the <i>Park Act, Ecological Reserve Act, Environment and Land Use Act</i> as it applies to provincial protected areas and fish and wildlife harvest.  Develop and approve parks and protected areas policy and management plans which guide the management of all activities occurring within protected areas, including hunting as it pertains to other protected area management objectives.	Apply Parks policy as it pertains to game harvest timing and location.
<i>Wildlife and Fisheries Health</i>	Monitor Species Health trends.	Provincial Veterinarian Policy and decision making on fish and wildlife trans-regional/provincial transplants.
<i>Invasive Species</i>	Provide policy and scientific expertise on Invasive plants and animals. Represent	Implement policy; deliver invasive species management program.

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	the province in national and international forums.	
<i>Riparian Area Regulation</i>	Update regulation as required; policy development; and effectiveness monitoring.	Implement and monitor regulation; work with qualified professionals; and authorize exceptions.
<i>Species At Risk</i>	Establish policy, and planning framework; legislation; provide scientific expertise; undertake assessments; maintain species listings and make statutory decisions on the provincial listing of species and identified wildlife. Undertake monitoring and effectiveness monitoring. Liaise and coordinate with Federal Government on species listings.	Lead the implementation of planning and species recovery programs.  Leading stewardship initiatives; stakeholder engagement.
<i>Fish and Wildlife Management Monitoring</i>	Establish monitoring networks; synthesize data provided by MFLNRO; and produce trend data.	Establishing spatial features on the landscape to protect legally identified species.  Establishing operational policy.  Monitoring for compliance with Standards.  Providing regional knowledge, advice and expertise on species/habitat condition and management.  Providing mitigation and offset advice on major projects Gather data and submit for trend monitoring; develop management strategies based on data synthesis and trends.
<b>Forest and Range Practices Act (MFLNRO) /Oil and Gas Activity Act (MEM)</b>		

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<i>Forest, Range, Oil and Gas Environmental Management</i>	Developing environmental component of Forest, Oil and Gas legislation and policy.	Contributing to environmental legislation and policy.  Implementing legislation and policy.
<i>Natural Management Values</i>	<p>Identifying and legislating identified species.</p> <p>Developing management standards for species to apply spatially on the landscape.</p> <p>Support MFLNRO operational policy development for implementing strategic policy and legislation.</p> <p>Conduct effectiveness monitoring.</p>	<p>Establishing spatial features on the landscape to protect legally identified species.</p> <p>Establishing operational policy.</p> <p>Monitoring for compliance with standards.</p> <p>Providing regional knowledge, advice and expertise on species/habitat condition and management.</p> <p>Providing mitigation and offset advice on major projects.</p>
<b>Water Act and Management</b>		
<i>Policy and Legislation</i>	Establish legislation, policy and standards related to the sustainable use, protection and governance framework for water.	Provide input on strategic policy direction and legislative development. Develop operational policy for implementation.
<i>Dams and Dikes</i>	Draft legislation; and assist in legislative updates.	Dam and dike safety, flood management, drought management policy development, implementation, and management.
<i>Water Authorizations Surface and Ground water</i>	Draft legislation; and assist in legislative updates. Set strategic policy framework for water governance and use.	Apply and administer the <i>Water Act</i> with respect to all statutory decisions pertaining to licensing and administration of activities authorized under the act including water use licensing, groundwater

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		<p>protection, and establishing water use committees.</p> <p>Establish and administer policy for the utilization and allocation of water.</p>
<i>Water Science</i>	Provide water science expertise on ground and surface water.	Issues identification, data gathering and monitoring.
<i>Drought Management</i>	Set strategic policy framework for water conservation.	Work with other levels of government and stakeholders in the development of water use, and drought management plans.
<i>Flood Management</i>	Provide snow pack information.	Develop policy management framework; lead/coordinate flood management.
<i>Enforcement</i>	Support the enforcement of the <i>Water Act</i> and <i>Fish Protection Act</i> through the Conservation Officer Service.	Issue order under the <i>Fish Protection Act</i> .
<i>Water/Snow Monitoring</i>	Establish monitoring networks; synthesize data provided by MFLNRO; and produce trend data.	Gather data and submit; and develop management strategies based on data synthesis and trends.

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ESTIMATES NOTE (2015) <b>Confidential</b>  Ministry of Environment  <b>Date: February 12, 2015</b>	<b>ISSUE TITLE:</b>  <b>Status of Research at the Ministry of Environment</b>
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#### **KEY MESSAGES:**

- **Key message #1 – Science-based knowledge is a core component in managing BC's natural resources for sustainable environmental, economic, and social benefits. The Ministry of Environment employs a range of science expertise to support the development of policies, legislation and natural resource decisions.**
- **Key message #2 – MOE takes a leadership role in acquiring new knowledge through a modest applied research program that leverages its capacity through effective partnerships with academia, other levels of government, industry, and other research institutes.**

#### CURRENT STATUS:

##### **Key message #1:**

- There is often significant uncertainty related to natural resource management decisions and decision makers depend on science staff to assemble and interpret the best available information to evaluate the likely outcomes related to alternative decision scenarios. This often requires the development of predictive models and other science-based tools to evaluate risks and uncertainties.
- Internal expertise is necessary to fulfill this role and MOE staff have expertise in a wide range of physical and biological disciplines including: climate, air and water quality, toxicology and contaminant management, hydrology, soil science, geomorphology and watershed processes, fisheries and wildlife sciences, species-at-risk and biodiversity, ecosystem science, conservation biology and cumulative effects.

##### **Key message #2:**

- Research is a structured process to fill knowledge gaps and resolve uncertainty. Applied research focuses on practical questions, many of which are of only marginal interest to traditional academia. MOE requires in-house research expertise to ensure that key areas of uncertainty can be addressed in a timely fashion.
- MOE's research activities are highly integrated with MFLNRO and are focused on joint priorities including: cumulative effects management, evaluating the effectiveness of forest practices to ensure desired outcomes are achieved (e.g. soil productivity, fish and riparian habitat), evaluating watershed processes (e.g. slope stability and channel structure), instream flow requirements to maintain healthy fish populations, species-at-risk management and recovery (e.g. caribou,



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white sturgeon, amphibians, fisher) and invasive species management.

- The capacity of MOE's research activities are greatly enhanced through the development of research partnerships and external funding agreements.
  - Funding agreements often leverage financial capacity by a factor of 10 or more;
  - Many research staff have adjunct appointments at various Universities, giving them access to institutional resources and the opportunity to develop research partnerships.
  - MOE staff also effectively use graduate students to undertake relevant research (which is very cost-effective) while mentoring the next generation of research scientists. This provides a positive experience which may create more interest in students for pursuing a government science career.
- The Technical Services Section in MOE's Knowledge Management Branch provides knowledge management services in support of NR Sector research activities including: The Natural Resources Library, the Analytical Chemistry Laboratory, Production Resources for scientific and technical publishing, and forest Research Information Systems.

## **KEY FACTS/BACKGROUND/OTHER AGENCIES:**

### ***Key message #1:***

- The NRS Sector as a whole has committed to using best available science to inform decisions. The scientific approach provides a formal and consistent means of evaluating management alternatives with respect to outcomes and ensures uncertainties are explicitly described and evaluated during the decision making process.
- A strong science program establishes credibility for management actions and natural resource decisions.

### ***Key message #2***

- MOE has worked closely with MFLNRO on the development and implementation of a Natural Resource Sector Strategic Science Framework. Success of the Framework requires cross-Sector agreement regarding resourcing for the supporting technical services.
- The two Ministries have developed a process to establish Sector-wide research priorities to ensure that the available financial and human resources are used in the most effective manner to deliver relevant research products.

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ESTIMATES NOTE (2015) <b>Confidential</b>  Ministry of Environment  <b>Date: February 16, 2015</b>	<b>ISSUE TITLE:</b>  <b>Invasive Species</b>
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#### KEY MESSAGES:

- **Key message #1 - Invasive species are a major threat to BC's environment, economy, and society.**
- **Key message #2 - The Ministry of Environment is involved in a number of initiatives to manage and restrict the spread of invasive species in BC.**

#### CURRENT STATUS:

##### **Key message #1:**

- Invasive species are the second largest threat to species and ecosystems, after habitat loss.
- Invasive species also impose substantial economic and social impacts, including loss of productivity to agriculture, aquaculture, and forestry; impacts on infrastructure; hazards to human health and safety; and degradation of recreational areas such as parks.
- In 2013, the ministry commissioned a study on the potential economic impacts in BC of several invasive animal species. The study found that zebra and quagga mussels could impose annual damages of over \$28M to infrastructure and recreational boating; impacts to fisheries would also be substantial but can't yet be quantified. European fire ants could impose annual damages of \$100M to public and private property.
- Successful management of invasive species depends on cross-jurisdictional collaboration and partnerships with all levels of government, academia, and non-government organisations.

##### **Key message #2:**

- BC has a well established program for invasive plants, and is working toward a similar program for invasive animals.
- The Inter-Ministry Invasive Species Working Group (IMISWG) is the coordinating body for invasive species management and has representation from all resource and land management ministries, including Environment.
- The IMISWG is developing options for improving our invasive species program and regulatory framework to more effectively address all invasive species and pathways of introduction.
- Invasive species do not respect borders, hence cross border / jurisdictional collaboration is a key to success. The province continues to work with neighbouring jurisdictions in the Pacific North-West to prevent the introduction and spread of zebra and quagga mussels as well as other invasive species.
- The province is working toward establishing a perimeter defence program in spring 2015 to prevent the introduction of invasive mussels into BC. This program is a key initiative for implementing the 2012 amendments to the Controlled Alien Species

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Regulation (*Wildlife Act*).

- Public education and media attention are potent tools for raising awareness of the impact and management of invasive species, as evidenced by the success and broad media coverage of the 10<sup>th</sup> anniversary Invasive Species Forum (Richmond, January 2015), held by the Invasive Species Council of BC and sponsored in part by the Provincial Government.

### **KEY FACTS/BACKGROUND/OTHER AGENCIES:**

- The IMISWG has provided policy direction, coordination and collaborative delivery of provincial invasive plant programs for the province since 2004. More recently it has expanded its mandate to include invasive animal species (vertebrates and invertebrates) in response to this growing threat.
- Since 2009, the MoE has taken an increasingly active role in addressing invasive species impacts, in particular for animal species.
- Through the IMISWG, MoE is coordinating and providing linkages into other key program areas such as the environmental mitigation policy, cumulative effects framework, and species and ecosystems at risk.
- Illegal introductions of non-native fish pose a risk to BC's freshwater fisheries and are being managed under a non-native fish policy through research in combination with control, and eradication programs- within the limits of available resources.
- Bullfrogs impact native amphibian species through predation and competition. Provincially endorsed eradication efforts are underway in areas in the Province (e.g. Okanagan) where eradication is deemed feasible. Where eradication is not feasible habitat restoration may minimise bullfrog impacts and allow their coexistence with native amphibians.
- The province is working with the Invasive Species Council of BC to prevent invasive species introductions by raising awareness through behaviour change programs such as "Clean, Drain, and Dry" (for recreational boaters) and "Grow Me Instead" (for gardeners and horticulture trades)
- MoE and FLNRO are working with Fisheries and Oceans Canada to monitor for zebra and quagga mussels across BC.
- Partnerships with academia fill knowledge gaps about invasive species distribution, impacts, and removals (e.g. snakehead fish, European fire ants, grey squirrels, bullfrogs, smallmouth bass, and yellow perch).
- MoE is working with FLNRO, Ducks Unlimited, Port of Vancouver and other groups to fulfill BC's commitment to eradicate invasive intertidal cordgrass (*Spartina spp*) from our coastline. Chemical treatments were completed in 2013 and 2014 and will also be conducted in 2015.

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ESTIMATES NOTE (2015) <b>Confidential</b>  Ministry of Environment  <b>Date: Feb. 13, 2015</b>	<b>ISSUE TITLE:</b>  <b>Invasive Mussels</b>
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#### KEY MESSAGES:

- **Key message #1 – BC recognises invasive mussels as a significant economic and ecological risk.**
- **Key message #2 - The Ministry of Environment is involved in a number of initiatives to prevent the introduction of invasive mussels into BC waters.**

#### CURRENT STATUS:

##### **Key message #1:**

- In 2013, the Ministry commissioned a study on the potential economic impacts in BC of several invasive animal species. The study found that Zebra and Quagga mussels could impose annual damages of over \$28M to hydroelectric facilities, municipal waterworks and recreational boating while a recent analysis estimated that damages to agricultural irrigation could approach \$15M annually. Impacts to fisheries would also be substantial but can't yet be quantified.
- An Ecological Risk Assessment has found most of BC to be suitable environment for invasive Zebra and Quagga mussels.
- A recent summary of the Idaho boat inspection program indicates that 10% of mussel-infested boats and trailers moving through Idaho were destined for BC.
- The discovery of Zebra mussels in Lake Winnipeg in November 2013 and the subsequent failed eradication attempt increases the risk for an introduction of invasive mussels to BC significantly.
- BC is working toward initiating a mandatory roadside inspection program to be in place for this boating season.

##### **Key message #2:**

###### *New legislation – federal / provincial*

- Amendments to the Controlled Alien Species Regulation (under the BC *Wildlife Act*) which prohibit the possession, transportation and sale of a number of aquatic invasive species including live or dead Zebra and Quagga mussels were brought into force the Dec. 2012. MoE is leading on the implementation of this regulation.
- The federal government published the federal Aquatic Invasive Species legislation under the federal *Fisheries Act* in Gazette 1 in December 2014. This proposed legislation would ban the importation of Zebra and Quagga mussels into SK, AB, and BC, which would allow BC to work with Canadian Border Services to detect, inspect and decontaminate infested boats crossing the international border.

###### *Collaboration national / international*

- The Ministry is reducing the risk of invasive species introductions through cross-jurisdictional collaboration and partnerships with all levels of government, academia,

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and non-government organisations.

- Invasive species do not respect borders, hence cross border / jurisdictional collaboration is a key to success. In 2009, BC (led by MoE) joined neighbouring US states as well as federal and tribal agencies by signing onto the Columbia Basin Rapid Response Plan designed to prevent the invasion of Zebra and Quagga mussels into the Columbia Basin.
- Through this collaboration BC has been notified, on average, of 10 trailered boats infested with Zebra or Quagga mussels destined for BC waters per year, allowing for their decontamination prior to them entering our lakes and rivers.
- BC is coordinating its invasive mussel prevention program with Alberta, Saskatchewan and Manitoba to maximize its effectiveness.

### ***BC Invasive mussel prevention***

- The provincial government has established an Inter-Ministry Invasive Species Working Group (IMISWG) - with representation from all resource and land management ministries to coordinate on invasive species management in BC.
- MOE, and FLNR, have completed the provincial Zebra and Quagga mussel Early Detection and Rapid Response (EDRR) Plan, to allow a focused and effective response to a potential mussel introduction in the future. The plan is closely linked to the Provincial and Columbia River Basin EDRR plans.
- MOE and FLNR are working with Fisheries and Oceans Canada to monitor for Zebra and Quagga mussels across BC. To date there have been no invasive mussel populations detected in BC waters.
- MOE is working closely with the Invasive Species Council of BC on a major outreach project to reduce the risk of invasive mussel movement or introduction by promoting 'Clean, Drain, and Dry' with recreational boaters.
- Consistent with the Pacific North-West Economic Region (PNWER) recommendation, MOE and FLNR are working closely with neighbouring provinces and states to develop a regional perimeter defence to prevent invasive mussel introduction to the Pacific Northwest and western Canada.
- MOE and FLNR are working to establish a BC Mussel Defence program which would include roadside inspection crews operating throughout the boating season, in conjunction with a comprehensive education and outreach effort.

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ESTIMATES NOTE (2015) <b>Confidential</b>  Ministry of Environment  <b>Date: February 17, 2015</b>	<b>ISSUE TITLE:</b>  <b>OAG Audit of Biodiversity Conservation</b>
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#### **KEY MESSAGES:**

- **Key message #1 – The B.C. government has recognized that effective conservation of biodiversity in the 21<sup>st</sup> century required a fundamental shift to how we manage natural resources in BC.**
- **Key message #2 – Government continues to implement a shift from a ministry-by-ministry approach to a coordinated, natural resource sector approach that will incorporate biodiversity objectives (along with other social, economic and environmental objectives) into all natural resource decisions.**
- **Key message #3 – The audit focused only on habitat protection measures under the *Forest and Range Practices Act* and the Conservation Framework. However, there are many other measures in place in BC that help conserve biodiversity.**
- **Key message #4 –The audit and its six recommendations – which the Province responded to with a series of specific actions and associated timelines – will help support our ongoing efforts to manage and conserve British Columbia’s biodiversity.**

#### CURRENT STATUS:

##### **Key message #1:**

- In 2011/12 the Office of the Auditor General (OAG) conducted an audit titled “Audit of Biodiversity in BC: Assessing the Effectiveness of Key Tools”
- On November 18, 2013, MOE & MFLNRO Sr. staff appeared as witnesses to the Select Standing Committee on Public Accounts and answered questions relating to the Auditor General’s Report. Details are available via Hansard.
- The Ministries of Environment and Forests Lands & Natural Resource Operations submitted a self-assessment (as required) to the OAG in February (2014).

##### **Key message #2:**

- The consolidation of much of the decision making for natural resource development and use within FLNRO was an important step towards coordinated and consistent approaches to managing for government’s strategic outcomes- including biodiversity.
- Key policy initiatives including ‘Integrated Decision Making’, Environmental Mitigation Policy and the Cumulative Effects Assessment Framework are all linked to the effort to create a more coordinated and robust decision making process.

##### **Key message #3:**

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- The OAG concluded that significant gaps exist in the understanding of biodiversity, ability to determine if government actions are conserving biodiversity, and government monitoring and reporting on biodiversity.
- Government's general response to the audit included a description of the suite of management tools and designations currently in place that contribute to the management of biodiversity, but that were not included within the scope of the tools assessed within the audit. These designations (e.g., protected areas, wildlife habitat areas, wildlife management areas, other conservation lands) and tools (e.g., Integrated Decision Making, Cumulative Effects Analyses) are critical components of government's ongoing management of biodiversity.

### **Key message #4:**

- Government's response to the 6 recommendations included 12 specific actions. Some of these are currently underway and had significant achievements for the February 2014 review. Others have progressed since that time or are in planning stages and have much longer time frames for completion.

## **KEY FACTS/BACKGROUND/OTHER AGENCIES:**

### **Key message #1:**

- The audit focused on conservation of biodiversity on Crown land (excluding BC Parks), and focused on the habitat protection actions of the Ministry of Environment and the Ministry of Forests, Lands and Natural Resource Operations – the two ministries with primary responsibility for conserving biodiversity in the province.

### **Key message #3**

- The legislation to conserve key components of biodiversity (species, ecosystems and habitats) is found in a number of different acts including: The Ministry of Environment Act, Wildlife Act, Forest and Range Practices Act, Oil and Gas Activities Act, Fish Protection Act and the Land Act and consideration of these values are mandated within the Environment and Land Use Act.
- The audit included case studies on habitat protection measures under the Forest and Range Practices Act to evaluate government's effectiveness in meeting its goals. This evaluation featured habitat protection measures, such as Wildlife Habitat Areas, Ungulate Winter Ranges, and Fisheries Sensitive Watersheds that apply to specific industrial sectors (forestry, oil & gas). BC has limited protection measures that apply across all sectors and land types.

### **Key message #4**

- The audit resulted in 6 recommendations to government:
  1. Make a long-term commitment to collect sufficient and reliable information about the status of biodiversity in BC and apply this information to make informed decisions about the conservation of biodiversity;
  2. Review its legislative framework to ensure that any significant gaps, inconsistencies or barriers to achieving conservation of biodiversity are identified and addressed;
  3. Assign responsibilities and timelines for its conservation actions and demonstrate how the prioritization of these actions is conserving biodiversity;
  4. Establish goals, objectives, targets and timelines to fully implement its

<p>ESTIMATES NOTE (2015)  <b>Confidential</b></p> <p>Ministry of Environment</p> <p><b>Date: February 2015</b></p>	<p><b>ISSUE TITLE:</b></p> <p><b>Southern Strait of Georgia National  Marine Conservation Area Reserve  Feasibility Assessment</b></p>
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***KEY MESSAGES:***

- **Key message #1** – Since 2003, the Province has engaged collaboratively with Parks Canada in assessing the feasibility of establishing a National Marine Conservation Area Reserve in the Southern Strait of Georgia. A draft boundary concept for consultation was announced by the two governments in October, 2011.
- **Key message #2** – BC and Canada have been working together to complete the feasibility study, focussing efforts on consultations with the First Nations affected by the proposal, the public, local governments and key stakeholders.
- **Key Message #3** – Upon completion of the feasibility study, a decision will be made whether B.C. agrees that a National Marine Conservation Area Reserve is feasible and desirable.

**CURRENT STATUS:**

**Key message #1:**

- Since 2003, the Ministry has worked with Parks Canada to determine the feasibility of establishing a National Marine Conservation Area Reserve (NMCAR) in the Southern Strait of Georgia . The key steps to date have been to determine an appropriate study area boundary and initiate consultation.
- A number of technical studies for the feasibility study have been completed, including a conservation analysis, a socio-economic baseline study, a mineral potential analysis and a hydrocarbon resource study.

**Key message #2:**

- Public consultations between 2004 and 2008 indicate general support for the proposal. Consultation since 2008 has focused on First Nations, local government and key stakeholders.
- There are 19 First Nations potentially affected by the proposal and there has been ongoing dialogue between Parks Canada and these First Nations. Parks Canada is now reviewing progress to date on First Nation consultation and considering future consultation efforts.
- Since the boundary announcement in 2011, Parks Canada and B.C. government staff have met with all the affected local governments. Feedback from local governments has been largely supportive of the NMCAR proposal.
- Consultation with key stakeholders, particularly marine industries and tenure holders, is ongoing.



- Costs associated with the feasibility study are mainly borne by Canada. The Province contributes staff time and expertise.
- The boundary proposed for consultation includes approximately 1,400 sq. km. in the Southern Strait of Georgia stretching from central Saanich in the south, to Gabriola Passage and southern Gabriola Island in the north, including Saanich Inlet.

***Key Message #3:***

- Due to the complexity of issues in this area, the ongoing consultations with First Nations and local governments, and the number of stakeholders involved, the feasibility study has taken longer than originally intended.
- While it was hoped that the feasibility study could be completed by the Fall of 2013, it became clear from ongoing consultation that additional time would be required to resolve issues raised by First Nations and stakeholders during the consultation process.
- B.C. and Canada will take the time necessary to respectfully engage with First Nations and meaningfully consult with stakeholders in this process. The project team is hoping that the feasibility study can be concluded in 2016.

**KEY FACTS/BACKGROUND/OTHER AGENCIES:**

There are 3 steps to creating a National Marine Conservation Area Reserve:

- 1) **Feasibility Study** – Examines issues such as local support, First Nations perspectives and land use conflicts.
  - 2) **Establishment Agreement** – Explains the details for the transfer of provincial lands to Canada, sharing of costs between the parties, regional economic benefits and compensation for affected resource tenure holders as required.
  - 3) **Establishment of National Marine Conservation Area Reserve** – Includes the actual transfer of lands to Canada and the establishment of the marine conservation area in federal legislation. Before this occurs, the final proposal is brought back to the B.C. Cabinet for approval.
- National Marine Conservation Area Reserves are areas managed for sustainable use by Parks Canada in cooperation with the Department of Fisheries and Oceans and Transport Canada.
  - The Canada *National Marine Conservation Areas Act* requires that each National Marine Conservation Area Reserve contain at least one area zoned for multiple uses and one zoned for full protection.
  - The only activities that are entirely prohibited in a National Marine Conservation Area Reserve are non-renewable resource exploration and development.
  - Other activities, such as commercial shipping and marine transportation, commercial fishing, utility corridors, tourism and recreation can continue in a NMCAR, as long as they do not impair the structure and function of the ecosystem.
  - If BC agrees to the establishment of the National Marine Conservation Area Reserve, the seabed in the Southern Strait of Georgia that is currently owned by B.C. would be transferred to the ownership of Canada. On December 3, 2010, the

Province of B.C. approved, subject to the positive outcome of the feasibility study, the transfer of provincially-owned seabed to Canada to enable the establishment of a National Marine Conservation Area Reserve.

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<p>ESTIMATES NOTE (2015)  <b>Confidential</b></p> <p>Ministry of Environment</p> <p><b>Date: February 2015</b></p>	<p><b>ISSUE TITLE:</b></p> <p><b>Halkett Bay Artificial Reef</b></p>
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**KEY MESSAGES:**

**Key message #1 - Environment Canada's disposal at sea permit will undergo a judicial review in late February 2015. The Artificial Reef Society of BC (ARSBC) can't move or sink the vessel until the judicial review is completed.**

**Key message #2 – The ARSBC has obtained formal authorization from Transport Canada, Environment Canada and Department of Fisheries (DFO) to sink the vessel in Halkett Bay Marine Park. Delays as a result of legal challenges presented by the “Save e Halkett Bay Marine Park Society”, means the ARSBC will need to request amendments to their federal permits.**

**Key message #3 – Stakeholder consultation was completed by the ARSBC and BC Parks. Squamish and Tsleil-Waututh First Nations and the diving community strongly support the proposal while some Halkett Bay property owners are opposed to the artificial reef.**

**Key message #4 – Previous Ministers Terry Lake and Murray Coell and other key stakeholders were committed to the project to sink the vessel in Halkett Bay Park as an artificial reef.** s.13,s.14

s.13,s.14

**CURRENT STATUS:**

***Key message #1:***

- The Federal Court granted an injunction on January 12, 2015, until a judicial review is complete in late February 2015, in regards to Environment Canada's disposal at sea permit. The “Save Halkett Bay Marine Park Society” claim that Environment Canada has no authority to issue the permit given the anti-fouling bottom paint on the vessel contains tributyltin chloride and dichloride (TBTs). The society claims the TBTs are toxic and beyond acceptable limits pertaining to existing Federal regulations.
- Environment Canada presented a written response to the “Save Halkett Bay Marine Park Society” formal petition in regards to the authorization (permit) issued on January 7, 2015. Environment Canada upon reviewing all the evidence, found no rational to rescind the original authorization. It was upon receiving this decision the “Save Halkett Bay Marine Park Society” petitioned the Federal Court for an injunction to stop the relocation and sinking of the vessel.
- The ARSBC did not have the financial capacity to remove the polychlorinated biphenyls (PCBs) found on the vessel. Environment Canada agreed to removes the

PCBs from the ship and this work, which involved the removal of insulation and paint, was completed on July 2, 2014 at a cost of \$1.6 million. The Province of BC contributed \$1.6 million through a cost sharing agreement with the Federal Government.

***Key Message #2:***

- Transport Canada is the lead agency for vessel navigation and safety, and has granted clearance for the ARSBC to sink the vessel for disposal at sea. The permit is valid until August 2015.
- Environment Canada issued their authorization (permit) which is valid from October 14, 2014 to October 13, 2015. The permit will need to be re-issued if the Federal Court rules the permit is not valid at the end of February.
- DFO is the lead agency responsible for addressing the loss of fish habitat resulting from the vessel's hull placement on the bottom of the sea bed. The ARSBC received formal authorization to sink the vessel, but during a limited window of opportunity from August 15, 2014 to January 31, 2015. ARSBC will require DFO to amend the valid date of authorization prior to sinking the vessel.
- BC Parks issued a park use permit to the ARSBC on November 3, 2014 to sink the vessel in Halkett Bay Provincial Marine Park. A formal gifting agreement was also signed which allows the Province to become the owner of the vessel once it rests on the substrate of Halkett Bay Park.

***Key message #3:***

- Halkett Bay property owners continue to oppose the artificial reef citing a variety of concerns. Halkett Bay property owners are not satisfied with the consultation process and cite concerns about increased boat traffic, inadequate sinking location, environmental contamination, and ship breakup from wave action.
- The United Church, a property owner in Halkett Bay, was also initially concerned about where the vessel would be placed as an artificial reef. They can exercise a foreshore removal clause, but have reserved their decision when the ARSBC changed the sinking location for the vessel. The sinking location is now beyond the boundary of the United Church's property interest, as defined in a purchase and sale agreement with the Province.
- Squamish and Tsleil-Waututh First Nations are strong and very vocal supporters of the ARSBC Halkett Bay artificial reef proposal. Strong support also comes from the diving industry.

***Key message #4:***

- The previous Minister, Terry Lake has been to Gambier Island to view the vessel from the water and visited Halkett Bay and the proposed sinking location for the vessel in the park.
- The previous Minister, Terry Lake met with the ARSBC, Halkett Bay property owners, and representatives from the United Church and camp Fircom.
- The current Minister of Environment, the Honorable Mary Polak, approved the ARSBC artificial reef project upon completion of the ARSBC obtaining full clearance

and authorization from Transport Canada, Environment Canada and Department of Fisheries and Oceans.

- Minister Coell, on March 8, 2011 accepted the gift of the HMCS *Annapolis* and the services from the Artificial Reef Society of British Columbia (ARSBC) to sink the vessel in Halkett Bay Marine Park to create an artificial reef.
- The ARSBC's park use permit application was denied on August 25, 2010 <sup>s.13,s.14</sup>  
s.13,s.14 After reviewing all options, gifting the vessel to the Minister was identified as the preferred option. <sup>s.13,s.14</sup>  
s.13,s.14
- The park use permit will ensure the Province is fully compliant with the *Park Act* and is protected from liability when the ARSBC will undertake the sinking of the vessel and the related expenses. The permit will also ensure the ARSBC conducts ongoing maintenance and research on the artificial reef.

#### KEY FACTS/BACKGROUND/OTHER AGENCIES:

- s.13,s.14
- Parks' management plan identifies scuba diving as an existing low use activity, and is silent on the creation of an artificial reef. However, the plan supports the development of new marine based recreational opportunities.
- Consultation meetings with key stakeholder have been completed by both ARSBC and BC Parks.
- Artificial reef has the ability to enhance rock fish species which are rare. This is a very important goal of Squamish and Tsleil-Waututh First Nations.
- The sinking and scuba diving activity on the artificial reef will not impact the glass sponge reef south east of Halkett Bay. The distance from the planned artificial reef to the glass sponge reef is 1.3 kilometers.

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