

Beneficial Management Practices for Whitebark Pine

Loss Mitigation and Best Management Practices for Industry

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Presentation Outline

- Background
- Mitigation Hierarchy
- Baseline Data Collection
- Industries and Loss Mitigation
 - Recreation and discrete development
 - Forestry
 - Mining
- The Document!

Background

- Note: I am Canadian;
- Whitebark pine is protected under the federal Species at Risk Act in Canada – this provides limited protection;
- Whitebark pine is still cut during timber harvest, mining and mineral exploration, ski area maintenance, trail maintenance, etc. etc. (all permitted, with limited mitigation requirements);
- Industry and policy makers alike are looking for guidance on managing whitebark pine in the industrial context;
- This document is for practitioners, not whitebark pine recovery experts

Background

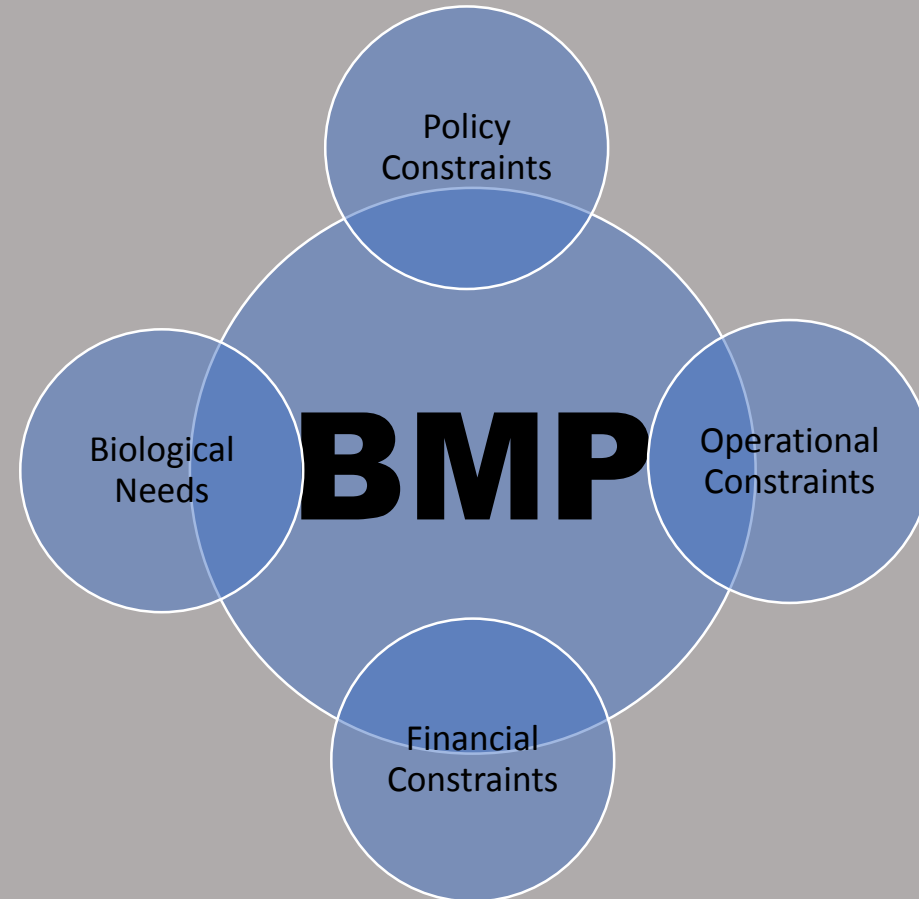
- Although human impact to whitebark pine is low, it still exceeds any recovery gains we have made;
- We are not looking to re-invent industrial practices but would like to see net recovery gains;
- With proper guidance, many industrial practices can result in recovery and restoration.

Background



Background

- Development of Best Management Practices for Industry – Not as straight forward as you think:



Mitigation Hierarchy



Mitigation Hierarchy

- The mitigation hierarchy is a process based hierarchy to limit industry impacts during large scale developments. Limiting impacts to the avoid and minimize categories is the most preferable level of disturbance:



Mitigation Hierarchy

Avoid

- Buffers

Minimize

- Pruning
- Thinning
- Timber Harvest
- Transplanting

Restore

- Cone Collections
- Seedling Planting

Offset

- Verbenone Application
- White Pine Blister Rust Resistance Screening
- Seed Orchards
- Seed Production Areas
- Seedling Production
- Prescribed Fire
- Public Education
- Financial Contributions

Baseline Data Collection



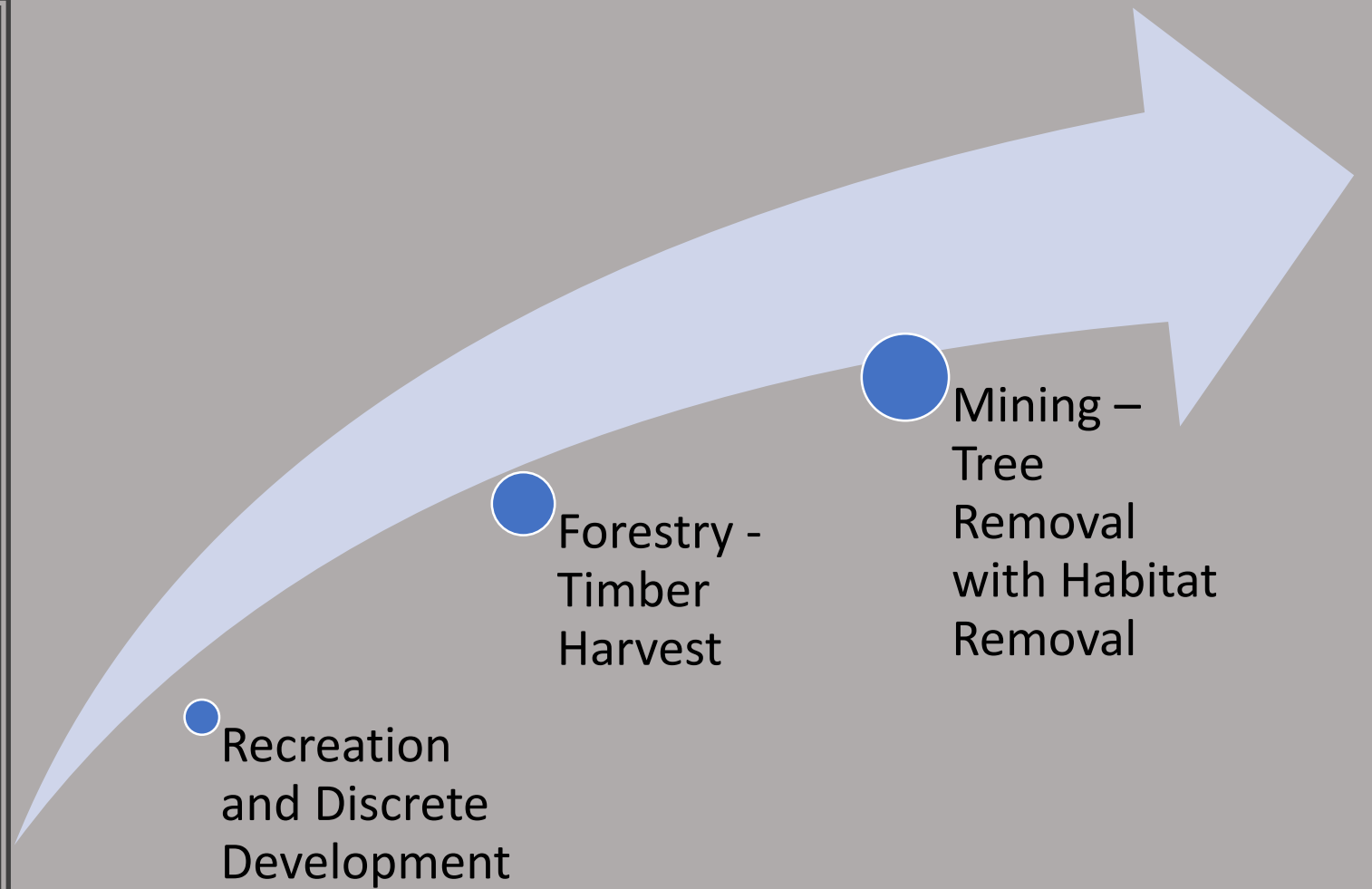
Baseline Data Collection

- Baseline data must be collected in the proposed project area in order to make proper management decisions;
- Regional health plots should be established where gaps are present;
- The potential to guide this data collection varies between industry:
 - Forestry
 - Implements a large number of standard surveys, modifying these to collect better whitebark pine data is the best approach.
 - Mining
 - Surveys are variable within sector and depend on phase of mining. Potential to guide whitebark pine surveys
 - Recreation
 - Very few standard surveys. Limited funds but typically willing group.

Industries and Loss Mitigation



Industries and Loss Mitigation



Increasing Disturbance and Mitigation Requirements

Industries and Loss Mitigation

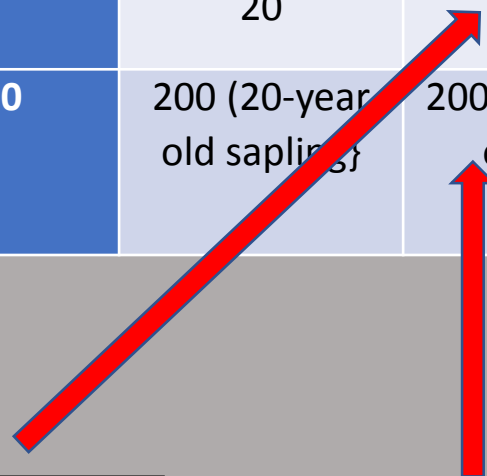
	Trees impacted		
Mitigation guideline	seedling or sapling	mature tree (cone bearing)	plus tree
Krakowski	20	100	200
Parks Canada Mitigation (10 seedlings per years-old)	200 (20-year old sapling}	2000 (200-year old tree)	40 scion cuttings + seedlings

Industries and Loss Mitigation

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0.25 ha
\$350 in Seedlings

5 ha
\$7000 in Seedlings



Recreation



Recreation

Planning

Inventory Mapping

Ecosystem Mapping

Public Education

Development

Training

Layout

Buffering

Pruning

Thinning

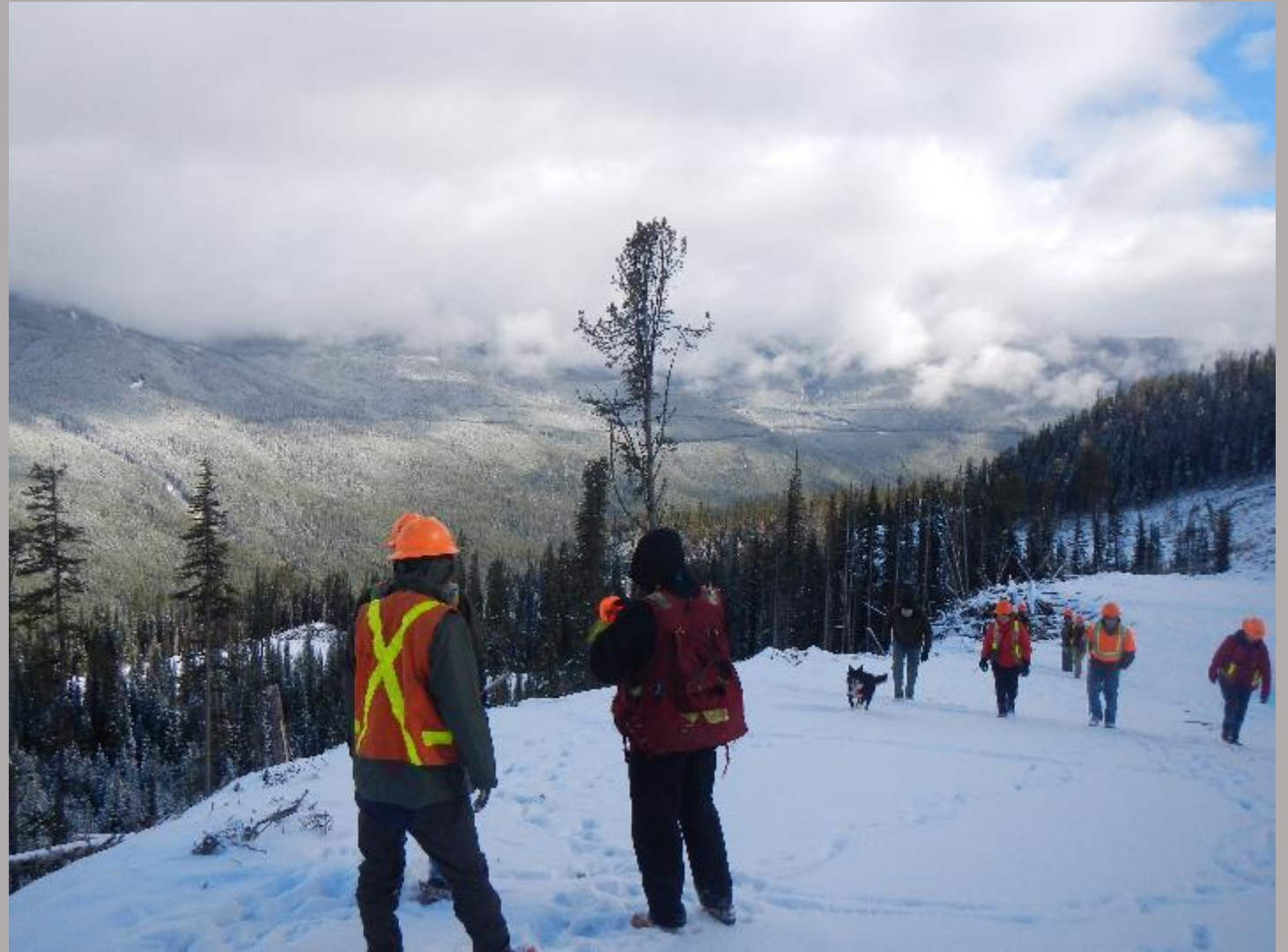
Verbenone Application

Public Education

Recreation

- Recreation presents a unique blend of opportunities and challenges for developing BMP's.
- Opportunities
 - Generally low impact industry
 - 'Potential' source of very remote data points
 - Audience is generally more conservation minded
- Challenges
 - Not well funded
 - No firm monitoring or oversight
 - In many instances groups or individuals are volunteers

Forestry



Forestry

Inventory and Higher Level Planning

Training

Monitoring Transects

Inventory Mapping

Reporting Data

Operations

Training

Timber Cruising

Layout

Buffering

Timber Harvest

Seedling Planting

Silviculture Surveys

Reporting Data

Whitebark Pine Dedicated Management

Permanent Monitoring
Transects

Public Education

Blister Rust Resistance
Screening

100 Tree Surveys

Cone Collections

Seed Orchards

Seedl Production Areas

Pruning

Thinning

Verbenone Application

Reporting Data

Financial Contributions

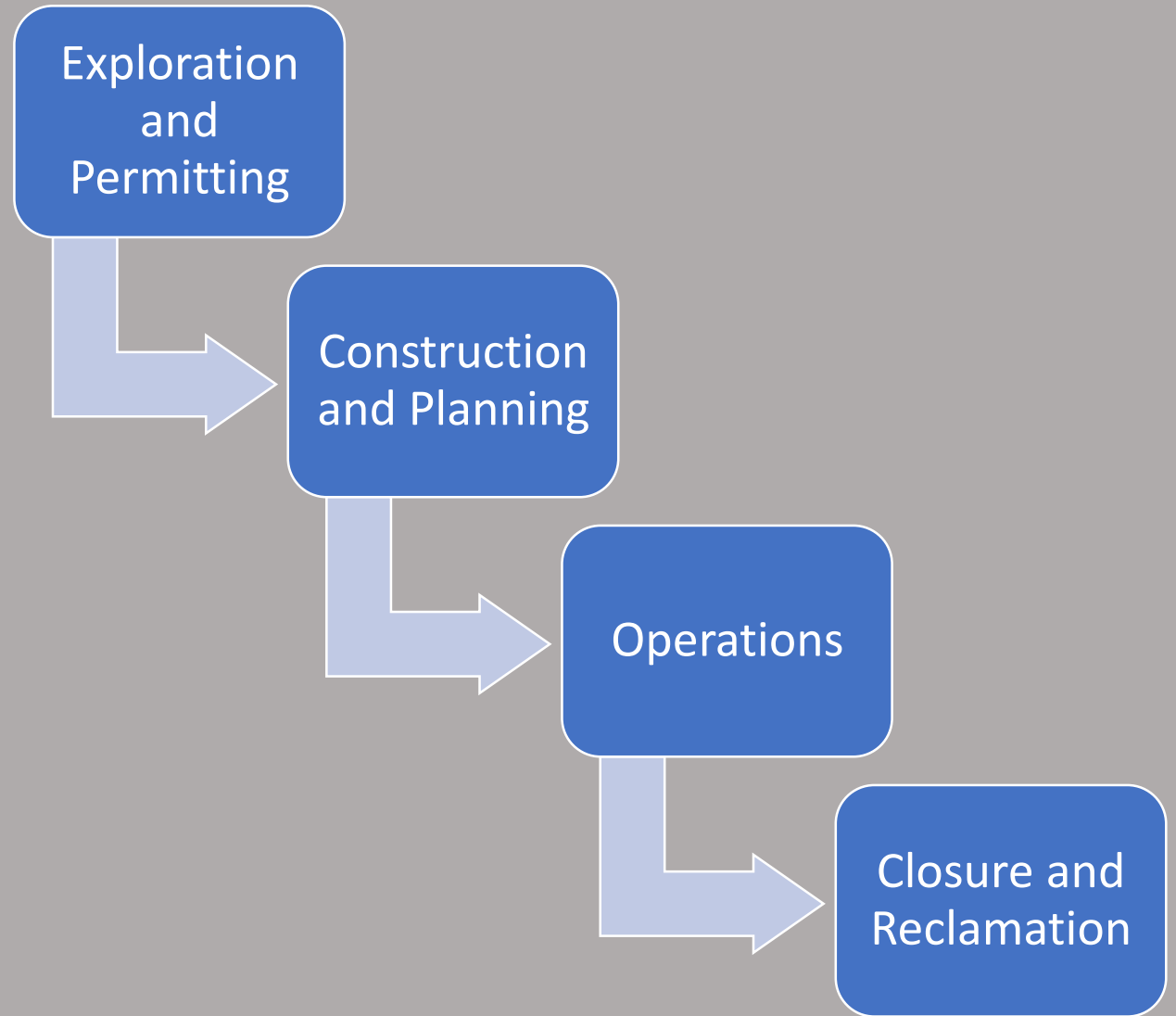
Forestry

- Forestry presents a unique blend of opportunities and challenges for developing BMP's.
- Opportunities
 - Survey a large number of trees to locate potential resistance
 - Large source of data
 - Modified harvest can equate to restoration
 - Proposed Critical Habitat can provide benchmarks
- Challenges
 - Prioritizing whitebark pine can impact long-term timber supply
 - Whitebark pine is not a merchantable species = Policy and Operational Barriers
 - Mindset of Industrial Foresters

Mining

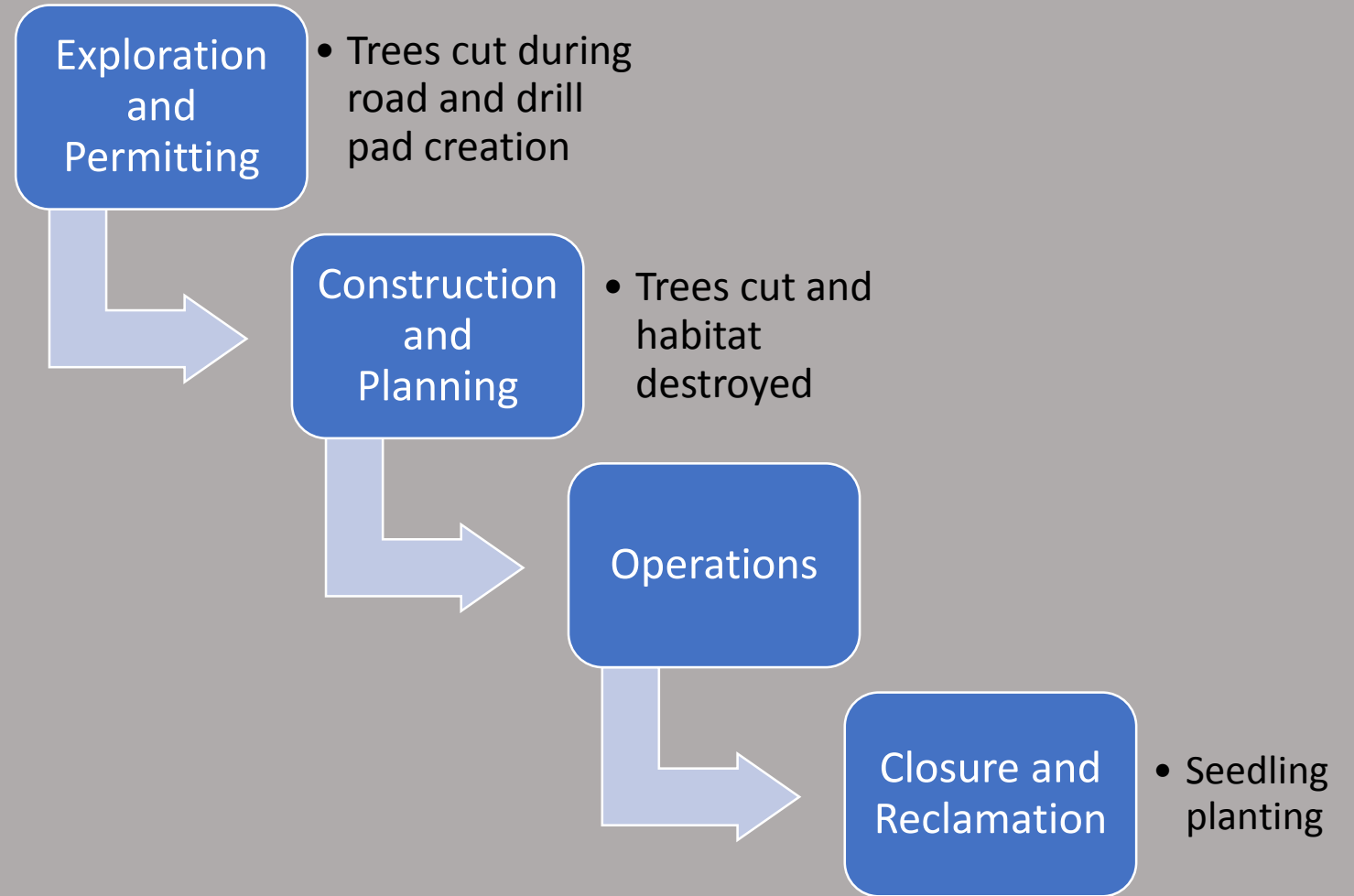


Mining



Lifecycle of a Mine

Mining



Lifecycle of a Mine

Mining

Exploration

Training

Mapping and
Surveys

Pruning

Buffering

Construction

Pruning

Buffering

Timber Harvest

Cone Collections

Transplanting

Operations

Buffering

Closure and Reclamation

Ecosystem Mapping

Cone Collections

Seedling Planting

Blister Rust
Resistance
Screening

Offsets

Monitoring
Transects

Thinning

Cone Collections

Seedling Planting

Verbenone
Application

Blister Rust
Resistance
Screening

Financial
Contributions

Mining

- Mining presents a unique blend of opportunities and challenges for developing BMP's.
- Opportunities
 - Many companies are striving for 'Net Positive Impact on Biodiversity'
 - Federal government reviews many mine applications, resulting in recommendations based on SARA listing
- Challenges
 - Quantifying impact and linking to restoration requirements
 - Accounting for habitat destruction
 - Accounting for time lag between construction and restoration
 - Offsetting not palatable

Mitigation Document



Mitigation Document

- Many good references within;
- Need to refine it to the appropriate audience;
- Need to provide clear prescriptive language for some actions;
- Need to find agreeable ways to quantify impacts and restoration;
- Needs less 'must' statements, we need to build bridges with industry, it's all voluntary right now.

Mitigation Document

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- Need to find agreeable ways to quantify impacts and restoration;
- Needs less 'must' statements, we need to build bridges with industry, it's all voluntary right now;
- Offsetting – let's make a deal!

Lake Louise Ski Resort faces trial next month on charge of cutting endangered trees

Resort pleaded not guilty and asked for trial to be stayed but a judge has decided it will proceed

The Canadian Press | Posted: Nov 02, 2017 2:11 PM MT | Last Updated: Nov 02, 2017 2:11 PM MT



Parks Canada is investigating the removal of trees from the back side of the Lake Louise leasehold in Banff National Park. (Lake Louise)

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A company accused of cutting down endangered trees at a popular ski resort in Banff National Park has lost its bid to avoid a trial on a charge laid under the federal Species at Risk Act.

Lake Louise Ski Area Ltd. was charged in 2015 after national park

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