Forests, Lands and Natural Resource Operations

2011/12 to 2013/14

Land Based Investment Strategy

FOREWORD

Each year, activities on the land base need to be re-evaluated to ensure investments support healthy and vibrant forests and range along with the industries they support now and into the future.

In developing the 2011/12 Land Based Investment Strategy (LBIS), feedback from consultation with stakeholders was considered along with government priorities and the continuing impacts of the mountain pine beetle infestation, recent wildfires, and current economic conditions.

The 2011/12 LBIS focuses funding on categories and activities that directly support service plan performance measures for the former Ministry of Forests, Mines, and Lands as well as the former Ministry of Natural Resource Operations.

Table of Contents

Contents

Purpose

The Forests, Lands and Natural Resource Operations 2011/12 – 2013/14 Land Based Investment Strategy (LBIS) provides strategic guidance for land based investments and aligns the targets and outputs for eligible activities with government's goals and objectives.

Effective and efficient delivery of this investment strategy will provide economic and social benefits to British Columbians through the realization of increased timber supplies and increased forest and range values. In addition, investment may increase carbon sequestration, mitigate climate change impacts on our forests and range, and protect our forests and range from significant health and natural disturbance impacts.

Broadly, through the Land Based Investment Strategy, the Ministry of Forests, Lands, and Natural Resource Operations (FLNR) supports these goals as outlined in the 2011/12 – 2013/14 Service Plans for the former ministries[1] (Appendix 1):

1) Maximum productivity of forest resources.

2) Sustainable development of forest resources.

3) Coordinated, integrated and sustainable management, development and use of natural resources.

The LBIS focus will be on the service plan strategic objectives for the:

1) Best return from investments and activities on the forest and range land base.

2) Encourage investments to benefit forest and range resources.

The LBIS will also focus on the additional government objectives to:

3) Manage impacts on forest and range resources from pests, disease, and wildfire.

4) Mitigate mid-term timber supply shortfalls.

5) Maximize timber growth in the provincial forests.

- Performance measure of an annual timber volume gain of 6.8 M m3 (millions of cubic metres) from silviculture investments.

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[1] Ministry of Forests, Mines and Lands (MFML) and Ministry of Natural Resource Operations (MNRO).

Scope[2]

Investment categories of the LBIS include:

- Forests for Tomorrow (FFT)
    i. Timber supply mitigation[3]
        - Fertilization
        - Spacing
        - Elimination of backlog NSR[4]

    ii. Current reforestation[5]

        - Priority given to those areas throughout the province where the catastrophic disturbance has caused drops in mid- and long-term timber supply (Appendix 3).

    iii. Forest health and invasive plants
        - Focus on areas and impacts with significant forest health issues.

- Tree improvement
    - Focus on increasing genetic gain in tree productivity throughout the province.

- Forest inventory activities
    - Priority given to inventory activities (e.g. site productivity, vegetation resource inventory, visual quality) that support land based investment decisions or help mitigate impacts to timber supply.

- Fire management
    - Focus on planning to minimize fire hazard risk on forest resources and investments.

- Fish passage
    - Focus investments within watersheds or watershed groups where greater than 75% of the fish habitat will be accessible to migrating fish (as identified in the Strategic Approach to Fish Passage). [6]

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[2] The Deputy Minister of Forests, Lands and Natural Resource Operations, may add new investment categories, targets or outputs during a planning year that are directly linked to government's goals, objectives, or strategic priorities.
[3] Treatments to address provincial-level issues.
[4] Initial emphasis should be the appropriate re-classification of polygons.
[5] Reforestation of areas impacted by catastrophic disturbance.

- Ecosystem restoration

  - Target the recovery of ecosystems that have been degraded, damaged, or destroyed by re-establishing structural characteristics, species composition, and ecological processes.

- Range

  - Focus on those range areas impacted by catastrophic disturbance such as mountain pine beetle, wildfire, and drought.

Land Based Investment Strategy Priorities

Within the scope of the Land Based Investment Strategy, and consistent with the *Forest and Range Practices Act,* and other relevant legislation and standards, the implementation priorities include specific government commitments that need to be addressed when striving to achieve the goals, objectives, and strategic priorities.

Forests for Tomorrow

i.   *Timber supply mitigation – mid-term timber supply*

- Fertilization, spacing, and backlog brushing in the central Interior will focus on mitigating the reduction in the mid-term timber supply by targeting these activities within the "economic fibre-baskets[7]" associated with the following areas[8]:

  - Priority 1: Lakes, Quesnel, Prince George, Williams Lake
  - Priority 2: 100 Mile House, Merritt, Morice, Okanagan
  - Priority 3: Cranbrook, Kamloops, Invermere, Arrow

- Spacing treatments should be focused on managing density of repressed, or potentially repressed, stands with low forest health risks.

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[6] The objective will be to provide unrestricted access to the <u>lowermost</u> parts of the stream network with the emphasis on providing access to the lowest gradient reaches and therefore the most optimal fish habitat.

[7] Wood fibre, within a reasonable economical distance (e.g. 8.5 hour cycle time), that might be able to assist in addressing the mid-term timber supply shortfalls in an adjacent management unit.

[8] All forest management units (e.g. Tree Farm Licences, Woodlot Licences, Community Forest Agreements, Timber Supply Areas, etc.) encompassed by the broader TSA name indicated are eligible for treatment if they meet the overall management objective. Priority designation classifies units by the degree of decrease in potential mid-term timber supply. If all factors are equal, treatment should occur within a higher priority unit before a lower priority unit.

- Stands and spacing densities should be targeted for future fertilization treatments.

ii. Current reforestation

- Maintain adequate growth rates on existing government-funded land based investments through vegetation management.

- Annual reforestation level of 13 million[9] seedlings (at least) with a variety of species[10], on areas where the mid- and long-term timber supply has been impacted by catastrophic disturbance.

- Plant 60 million[11] seedlings over four years (2008/09 – 2011/12)[12] on areas impacted by wildfire and mountain pine beetle.

- Eliminate the provincial backlog (pre-1987) Not Satisfactorily Restocked (NSR) by 2015[13].

- Establish fibre plantations[14], including short rotation plantations, where ecologically and economically feasible[15].

iii. Forest health and invasive plants

- Support improved tree growth by managing and preventing the impacts on the forest and range from pests, disease, and invasive plants

iv. Timber supply mitigation – constrained timber supply

- Fertilization and stand tending (juvenile spacing) on coastal, northwest[16] and southeast[17] forest management units to improve timber availability and value.

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[9] Excludes seedlings planted under Forest and Range Practices Act section 108.

[10] Follow Forest For Tomorrow Management of tee species composition policy (#1) and Assisted species migration guidance.

[11] 60M seedling commitment includes seedlings planted under FRPA section 108.

[12] Throne speech commitment 2008.

[13] Throne speech commitment 2009.

[14] See Fibre Plantations in British Columbia (Land Based Investment Program).

[15] Roundtable on Forestry Recommendation 2009.

[16] Skeena-Stikine and Kalum forest districts.

[17] Districts within the Kootenay-Boundary region.

- Focus on Coast, Northwest, and Southeast forest management units with constrained timber supply and where highest return-on-investment will be achieved.

  o Focus on establishing stands suitable for future fertilization and value improvement.

Tree improvement

- Tree breeding, seed production in orchards, and modifying seed transfer guidance to establish faster growing trees, with more valuable wood, and higher resilience to climate change.[18]

Inventory

- Focus site productivity and forest inventory updates on priority units for mid-term timber supply mitigation in the Interior and on ecosystem-based management units on the Coast.

Fire management

- Creation of fire risk planning tools to assist in reducing risk to forest resources and investments.

Fish passage

- Optimize fish habitat gains by targeting high-value sites with the best potential for providing significant fish returns.[19]

Range

- Restore range areas impacted by catastrophic disturbance such as mountain pine beetle, wildfire, and drought.

Ecosystem restoration

- Restore ecosystem function of in-grown open forests and native grasslands.

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[18] As per the Forest Genetics Council Strategic Plan (2009/2014).

[19] Maintain emphasis on culvert assessments, as they drive strategic prioritization of sites for remediation.

Land Based Investment Strategy planning

- Planning, evaluation, and monitoring of future, current, and past land based investment strategies for continuous improvement.

Budget 2011/12 – 2013/14 (detail in Appendix 2)

Investment category	Sub Category	2011/12 ($M)	Sub ($M)
Forests for Tomorrow	Current Reforestation	54.125	34.515
	Timber Supply Mitigation		11.85
	Forest Health		7.16
	Invasive Plants		0.60
Tree improvement		3.5	3.50
Inventory	VRI/Site Productivity	6.1	5.45
	EBM		0.50
	Visual		0.15
Fish Passage		1.50	1.50
Fire Management		0.085	0.085
Ecosystem Restoration		0.75	0.75
Range		0.50	0.50
LBI		1.44	1.44
Total		68.0	

Investment Principles

1) Funds will be allocated between and within investment categories considering the potential contribution to the goals, objectives, and strategic priorities of the Land Based Investment Strategy, relative to cost.

- Allocation of investments will be based on consideration of the following factors[20] (in order):

  i. Magnitude[21] of the impact in addressing the goals, objectives, and strategic priorities resulting from the activity.

  ii. Activities that address timber supply:

  a. Maintain adequate growth rates on existing government-funded land based investments.

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[20] Consideration will be given to strength of evidence that the expenditure will have the impact that is claimed
[21] The size of the contribution and importance of the contribution to the goals, objectives, and strategic priorities.

   b. Address critical mid-term time periods when second growth timber must be available in sufficient quantities and size to meet supply demands.

   c. Reforest catastrophic disturbance where mid- and long-term timber supply has been impacted.

  iii. Activities that are dependent on a specific biological window where delays could result in lost opportunities.

  iv. Additional benefits that can be achieved from the activity.

  v. The ability to leverage funding from other sources.

2) Determination of specific treatment activities must consider the direction contained within relevant existing local plans and strategies (e.g. silviculture strategies, forest health strategies, community wildfire protection plans, sustainable forest management plans, ecosystem restoration plans, future forest strategies, wildlife habitat plans).

3) Where practical to determine, a target of 2% (or greater) return on investment has been set to optimize fiscal performance for any prescribed treatment regime. Variation to the return on investment threshold will be allowed where benefits to timber supply or other resource values reflect a higher social priority or a return on investment calculation is not practical

4) Land based investment activities will be delivered using the method deemed most effective and efficient to achieve the provincial goals and objectives.

5) All investment category planning teams will seek additional external funding, where possible, to assist in achieving the provincial goals and objectives of the Land Based Investment Strategy.

6) The planning and allocation process will be open and transparent.

Appendix 1- Priorities Relevant to Land Based Investments[22]

Strategic Document	Goal	Objectives /Strategies
Service Plan MFML 2011/12-2013/14	Goal 1: Maximum productivity of forest resources.	∗ Silviculture investment to increase timber quality and supply. ∗ Mitigate mid-term supply impacts caused by the mountain pine beetle. ∗ Ensure ministry policies facilitate bioenergy opportunities. o Goal 1 has a performance measure of an annual timber volume gain of 6.8 M m3 (millions of cubic metres) from silviculture investments.
	Goal 2: Sustainable development of forests.	Public and consumer trust that forests are sustainably managed. ∗ Ensure appropriate standards are in place to increase ecosystem resilience and adapt forest practices for a changing climate.
Service Plan MNRO 2011/12-2013/14	Goal 2: Coordinated, integrated and sustainable management, development and use of natural resources.	∗ Ensure management practices are adaptive for a changing climate and enhance ecosystem. ∗ Enhance protection, management and stewardship of all natural resources, including ecosystems, water quality and quantity, fish and wildlife habitat, and species at risk.
Mountain Pine Beetle Action Plan 2006-2011	Prevent or reduce damage to forests in areas that are susceptible but not yet experiencing epidemic infestations.	∗ Conduct timely and appropriate detection and assessment surveys to monitor the level of infestation and success of mitigation actions.
	Restore the forest resources in areas affected by the epidemic.	∗ Reforest on a priority basis to return the best sites to timber productivity quickly. ∗ Undertake stand treatments on a priority basis to ensure timber will be available for harvest sooner than originally planned.
Roundtable Recommendations	∗ Review forest management and silviculture practices to ensure that they encourage maximum productivity, value and support forest resilience.	
	∗ Enable the establishment of short rotation fibre plantations.	
Great Goal	∗ Lead the world in sustainable environmental management, with the best air and water quality, and the best fisheries management, bar none.	

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[22] Future land based investment strategies may reflect a broader mandate of the new Ministry of Forests, Lands and Natural Resource Operations.

Appendix 2- Land Base Investment Strategy Operational Budget (salaries excluded)

Linkage to LBIS Goal/Objective/Priority	Activity	$ M	Outputs 2011/12	Targets 2011/12	Targets 2012/13	Targets 2013/14
Investment Category: Forests for Tomorrow – Current Reforestation						
Goal: Maximum productivity **Objective:** Best return on investments **Priority:** Manage impacts from pest, disease, and wildfire	• Deployment of government funded silviculture in basic reforestation of wildfire, MPB killed areas. • On the ground surveys to update forest inventory and land status (e.g. NSR) in key units. • Assessments in community watersheds and fisheries sensitive watersheds impacted by MPB and wildfire.	32.515	• **14 million** trees planted. • Surveys as to land status and necessary treatments in MPB impacted areas. • Maintenance of growth rates and survival on past FFT and FIA planting. • **40,000 ha** of backlog (pre 87 NSR) assessed. • Fund legal liabilities associated with approved FRPA 108 applications (restoring licensee areas burned by fire). • Assessments in critical watersheds as needed to determine where silviculture treatments can help mitigate risk.	• **2.68 million m³** in 65 years • **2.6 million tonnes** CO2e in 65 years • **$311 million** GDP in 65 years	• **2.61 million m³** in 65 years. • **2.6 million tonnes** CO2e in 65 years • **$303 million** GDP in 65 years	• **2.61 million m³** in 65 years. • **2.6 million tonnes** CO2e in 65 years • **$303 million** GDP in 65 years
	• Meet government objectives under FRPA section 108.	2.0	• FRPA section 108 applications are processed consistent with legislative requirements.	• Damaged obligation areas are **rehabilitated** in a timely manner	• Damaged obligations areas are **rehabilitated** in a timely manner	• Damaged obligations areasare **rehabilitated** in a timely manner
SUB-TOTAL		34.515				

Linkage to LBIS Goal/Objective/Priority	Activity	$ M	Outputs 2011/12	Targets 2011/12	Targets 2012/13	Targets 2013/14
Investment Category: Forests for Tomorrow – Timber Supply Mitigation						
Goal: Maximum productivity **Objective:** Best return on investments **Priority:** Maximize timber grown	• Fertilization in priority interior forest management units for midterm timber supply mitigation. • Fertilization on key forest management units on the Coast and in the Northwest.	11.85	• **24,000 ha fertilized**. Approximately 65% of area fertilized to be in the Interior and 35% of area fertilized to be on the Coast. • Purchase of fertilizer for 2012/13 application.	• **479,000 m^3** additional wood in 10 years. • **479,000 tonnes** of CO2e in 10 years. • **$56 million** GDP in 10 years.	• **479,000 m^3** additional wood in 10 years. • **479,000 tonnes** of CO2e in 10 years. • **$56 million** GDP in 10 years	• **479,000 m^3** additional wood in 10 years. • **479,000 tonnes** of CO2e in 10 years. • **$56 million** GDP in 10 years
	• Juvenile spacing and backlog brushing in priority interior forest management units for midterm timber supply mitigation. • Juvenile spacing on key forest management units on the Coast and in the Northwest.		• **1200 ha** of stand tending focusing on the priority units for interior mid-term timber supply mitigation and to improve coastal and Northwest timber availability and value.	• **1200 ha** of currently over dense stands are available for harvest in 10-30 years. • **360,000 m^3** shifted from future harvest into the mid-term through spacing.	• **1200 ha** of currently over dense stands are available for harvest in 10-30 years. • **360,0000 m^3** shifted from future harvest into the mid-term through spacing.	• **1200 ha** of currently over dense stands are available for harvest in 10-30 years. • **360,000** shifted from future harvest into the mid-term through spacing.
SUB-TOTAL		11.85				

Linkage to LBIS Goal/Objective/ Priority	Activity	$ M	Outputs 2011/12	Targets 2011/12	Targets 2012/13	Targets 2013/14
Investment Category: Forests for Tomorrow – Forest Health						
Goal: Sustainable development **Objective**: Encourage investments to improve forest resources **Priority:** Manage impacts on forest resources from pest, disease, and wildfire	• Annually update forest health conditions to implement cost effective treatments and update timber supply impacts.	7.16	•**80%** of the province is flown with qualified surveyors.	• **Protected** standing timber inventory through strategic information available for cost effective decision making in harvesting and treatments. • **Monitored** impacts of climate change as indicated by changes in pest activity.	• **Protected** standing timber inventory through strategic information available for cost effective decision making in harvesting and treatments. • **Monitored** impacts of climate change as indicated by changes in pest activity.	• **Protected** standing timber inventory through strategic information available for cost effective decision making in harvesting and treatments. • **Monitored** impacts of climate change as indicated by changes in pest activity.
	• Survey training, quality control and provincial contract oversight and coordination.		•**10%** quality check, coordinated and streamlined delivery, and provincial forest health conditions reported. •**Updated** training package.	• **Informed** program planning, decision making, secure and accessible data and informed resource professionals.	• **Informed** program planning, decision making, secure and accessible data and informed resource professionals.	• **Informed** program planning, decision making, secure and accessible data and informed resource professionals.
	• Early detection of unexpected pest outbreaks to ensure an appropriate response is rapidly implemented.		• Various aerial and ground surveys are conducted as needed. Initial estimate of **20** investigations per year province-wide.	• **Minimized** risk of forest health losses through the early diagnosis and application of best management practices.	• **Minimized** risk of forest health losses through the early diagnosis and application of best management practices.	• **Minimized** risk of forest health losses through the early diagnosis and application of best management practices.

Linkage to LBIS Goal/Objective/ Priority	Activity	$ M	Outputs 2011/12	Targets 2011/12	Targets 2012/13	Targets 2013/14
• *Investment Category: Forests for Tomorrow – Forest Health (continued)*						
Goal: Sustainable development **Objective**: Encourage investments to improve forest resources **Priority:** Manage impacts on forest resources from pest, disease, and wildfire	• Develop and deploy best management practices to ensure the protection and production of healthy mid-term and long-term timber supply.		• Forest Health Strategies updated to address the top 5 forest health pests on second growth stands.	• **Minimized** risk of forest health losses through the application of best management practices. • All new or extended Forest stewardship plans have stocking standards **adjusted** to reflect forest health conditions.	• **Minimized** risk of forest health losses through the application of best management practices. • All new or extended Forest stewardship plans have stocking standards **adjusted** to reflect forest health conditions.	• **Minimized** risk of forest health losses through the application of best management practices. • All new or extended Forest stewardship plans have stocking standards **adjusted** to reflect forest health conditions.
	• Strategic deployment of spruce budworm control.		• **48,000 ha** of spruce budworm sprayed.	• **1 million m^3** of mid-term timber supply saved.	• **2 million m^3** of mid-term timber supply saved.	• **2 million m^3** of mid-term timber supply saved.
	• Management activities to identify, map and treat spruce and Douglas-fir bark beetle infestations to stop spread and protect surrounding forests from loss.		• Areas with trees infested with spruce and Douglas-fir beetle are identified and mapped for treatment. • Identified areas are treated by small scale salvage program and other licensees.	• Spread of spruce and Douglas-fir beetle **maintained below** critical spread thresholds in units with critical mid-term timber supply issues.	• Spread of spruce and Douglas-fir beetle **maintained below** critical spread thresholds in units with critical mid-term timber supply issues.	• Spread of spruce and Douglas-fir beetle **maintained below** critical spread thresholds in units with critical mid-term timber supply issues.
	• Management activities to identify and treat new mountain pine beetle infestations to suppress or slow the rate of infestation to extend the life of the pine timber supply.		• Critical mountain pine beetle infestation centres are identified and treated.	• Spread of mountain pine beetle **slowed or halted** and outbreaks **prevented**. • Opportunity to carry out orderly harvesting and maximize stumpage revenue is	• Spread of mountain pine beetle **slowed or halted** and outbreaks **prevented**. • Opportunity to carry out orderly harvesting and maximize stumpage revenue is	• Spread of mountain pine beetle **slowed or halted** and outbreaks **prevented**. • Opportunity to carry out orderly harvesting and maximize stumpage revenue is

Linkage to LBIS Goal/Objective/ Priority	Activity	$ M	Outputs 2011/12	Targets 2011/12	Targets 2012/13	Targets 2013/14
				maintained.	**maintained.**	**maintained.**
• *Investment Category: Forests for Tomorrow – Forest Health (continued)*
Goal: Sustainable development **Objective**: Encourage investments to improve forest resources **Priority:** Manage impacts on forest resources from pest, disease, and wildfire	• Deploy controls for Douglas-fir tussock moth.		• **8,500 ha** of Douglas-fir Tussock moth treated. • Btk purchase for 2011/12.	• Urban Douglas-fir **protected** and public health issues (asthma and severe allergies) **avoided**.	• Urban Douglas-fir **protected** and public health issues (asthma and severe allergies) **avoided**.	• Urban Douglas-fir **protected** and public health issues (asthma and severe allergies) **avoided**.
	• Conduct early stand growth performance assessments. • Revise site productivity estimates. • Revise stand structure estimates. • Incidence of forest health agents. • Update inventory labels.		• 10 Early stand growth assessments*: Prince George, Lakes, Quesnel, Williams Lake, Morice, Merritt, Okanagan, 100 Mile House, Kamloops, Arrow, Cranbrook, Invermere, Coast Region.*	• Provides **updated** inventory label added to mid-term TSR assumptions and guides strategic planning for FFT and incremental silviculture.	• Provides **updated** inventory label added to mid-term TSR assumptions and guides strategic planning for FFT and incremental silviculture.	• Provides **updated** inventory label added to mid-term TSR assumptions and guides strategic planning for FFT and incremental silviculture.
	• Create hazard maps for high priority pests of young stands in priority TSAs.		• Hard pine stem rust hazard mapping completed for Vanderhoof and Nadina forest districts.	• Forest management decisions in Vanderhoof and Nadina are **informed** by hard pine hazard ratings	• Forest management decisions in Fort St. James and Prince George are **informed** by hard pine hazard ratings	• Forest management decisions in Quesnel are **informed** by hard pine hazard ratings
	• Septoria risk assessment.		• Determination of impact to hybrid poplars and native black cottonwood from this non-native disease.	• **Delineation** of disease spread and host susceptibility.	• **Determination** of impact to hybrid poplars and native black cottonwood from this non-native disease.	• **Development** of risk mitigation measures to protect short-rotation hybrid poplar plantations and native riparian habitat. **Mitigation** of trade issues.

Linkage to LBIS Goal/Objective/ Priority	Activity	$ M	Outputs 2011/12	Targets 2011/12	Targets 2012/13	Targets 2013/14
• *Investment Category: Forests for Tomorrow – Forest Health (continued)*						
Goal: Sustainable development **Objective**: Encourage investments to improve forest resources **Priority:** Manage impacts on forest resources from pest, disease, and wildfire	• Deploy gypsy moth control program in the Lower Mainland.		• Gypsy moth populations in Richmond and Harrison Hot Springs are eliminated. • Btk purchase for 2011/12.	• **Protection** of forests, farms and Richmond residents' trees and continued access to international forest product markets with no quarantine.	• **Protection** of forests, farms and Richmond residents' trees and continued access to international forest product markets with no quarantine.	• **Protection** of forests, farms and Richmond residents' trees and continued access to international forest product markets with no quarantine.
Goal: Sustainable development **Objective**: Encourage investments to improve forest resources **Priority:** Manage impacts on forest resources from pest, disease, and wildfire	• Undertake invasive plant management activities to identify, survey and treat priority species to prevent establishment of new invasive plants (early detection and rapid response), and minimize the spread of others.	0.6	• **2000** priority invasive plant sites inspected and/or treated; • Provincial EDRR plan implemented on 7 species. No new invasive plant species established. • Inventory and incursion surveys completed in **a minimum of 3** drainages. • **10%** of critical sites controlled or eradicated.	• **No new** invasive plant species establishment on Crown land. • Infestations of toadflax and hound's-tongue **under biological control**. • Highest provincial priority invasive plant species are **controlled** outside containment lines.	• **No new** invasive plant species establishment on Crown land. • Infestations of toadflax and hound's-tongue **under biological control**. • Highest provincial priority invasive plant species are **controlled** outside containment lines.	• **No new** invasive plant species establishment on Crown land. • Infestations of toadflax and hound's-tongue **under biological control**. • Highest provincial priority invasive plant species are **controlled** outside containment lines.

Linkage to LBIS Goal/Objective/ Priority	Activity	$ M	Outputs 2011/12	Targets 2011/12	Targets 2012/13	Targets 2013/14
			Investment Category: Forests For Tomorrow – Forest Health (continued)			
Goal: Sustainable development **Objective**: Encourage investments to improve forest resources **Priority:** Manage impacts on forest resources from pest, disease, and wildfire	• Survey all known priority invasive plant infestations within 2010 wildfire areas, adjacent areas of soil disturbance, and staging/marshalling areas. • Treat all new and expanding infestations of priority species.		•Helicopter and ground reconnaissance surveys completed on all identified potential vectors or points of introduction of invasive plants related to the wildfires. •Treatment of all new and expanding priority species found.	• **Minimal** expansion of existing priority invasive plant sites within the 2010 wildfire areas. • **No** establishment of new invasive plant species due to fire control activities.	• **Minimal** expansion of existing priority invasive plant sites within the 2011 wildfire areas. • **Minimal** establishment of new invasive plant species due to fire control activities.	• **Minimal** expansion of existing priority invasive plant sites within the 2012 wildfire areas;. • **Minimal** establishment of new invasive plant species due to fire control activities.
	• Maintain partnership delivery of invasive plant activities with regional weed committees and regional district weed programs including support for First Nations Invasive Plant Partnership Programs.		•Partnerships and pooled resource delivery models reduced with emphasis placed on on-ground delivery and First Nations Invasive Plant Partnership Programs. •No establishment of new regional invasive plant incursions. •Invasive Plant Strategies reviewed and updated as appropriate.	• **No new** invasive plant species establishment in areas where partnership delivery models are in place. • **Containment** of priority species, including marsh plume thistle, hoary alyssum, and field scabious is maintained. • **Reduced** expansion of hawkweed and oxeye daisy into the Peace.	• **No new** invasive plant species establishment in areas where partnership delivery models are in place. • **Containment** of priority species, including marsh plume thistle, hoary alyssum, and field scabious is maintained. • **Reduced** expansion of hawkweed and oxeye daisy into the Peace.	• **No new** invasive plant species establishment in areas where partnership delivery models are in place. • **Containment** of priority species, including marsh plume thistle, hoary alyssum, and field scabious is maintained. • **Reduced** expansion of hawkweed and oxeye daisy into the Peace.
SUB-TOTAL		7.76				

Linkage to LBIS Goal/Objective/ Priority	Activity	$ M	Outputs 2011/12	Targets 2011/12	Targets 2012/13	Targets 2013/14
Investment Category: Tree Improvement						
Goal: Maximum productivity **Objective:** Best return on investments **Priority:** Maximize timber grown	Provincial tree improvement program: activities: • Tree breeding. • Seed production in orchards. • Modifying seed transfer for climate change. Tree Improvement Branch leads delivery.	3.5	• **108,000 ha** reforested with "select seed" with an average genetic improvement over wild seed of 16%.	• **3.65 million m³** in 65 years. • **3.6 million tonnes** CO2e in 65 years. • **$423 million** GDP in 65 years.	• **3.75 million m³** in 65 years. • **3.7million tonnes** CO2e in 65 years. • **$435 million** GDP in 65 years.	• **3.8 million m³** in 65 years. • **3.8 million tonnes** CO2e in 65 years. • **$441 million** GDP in 65 years.
SUB-TOTAL		3.5				

Linkage to LBIS Goal/Objective/ Priority	Activity	$ M	Outputs 2011/12	Targets 2011/12	Targets 2012/13	Targets 2013/14
Investment Category: Inventory					
Goal: Sustainable development **Objective:** Best return on investments **Priority:** Mitigate mid-term timber supply shortfalls	• Complete forest inventories with significant past investments and • Focus new inventory activities to the highest priority units.	5.45	**Completion** of the following inventory (VRI) products: • Williams Lake TSA and 100 Mile House TSA air photo acquisition. • Williams Lake TSA (east, non-PI) photo interpretation. • Ft St John TSA NVAF sampling (75 trees) and sample data analysis. • TFL 46 NVAF sampling (11 trees) and sample data analysis. • Development of a monitoring strategy, standards, and collection of change information in MPB stands spanning three management units	Improved information for decision making by natural resource sector managers including: • **20** AAC determinations. • **10+** strategic analyses in addition to addressing emerging mid-term timber supply questions; First Nations Treaty negotiations; carbon estimation.	Improved information for decision making by natural resource sector managers including: • **20** AAC determinations. • **10+** strategic analyses in addition to addressing emerging mid-term timber supply questions; First Nations Treaty negotiations; carbon estimation.	Improved information for decision making by natural resource sector managers including: • **20** AAC determinations. • **10+** strategic analyses in addition to addressing emerging mid-term timber supply questions; First Nations Treaty negotiations; carbon estimation.

Linkage to LBIS Goal/Objective/ Priority	Activity	$ M	Outputs 2011/12	Targets 2011/12	Targets 2012/13	Targets 2013/14
• *Investment Category: Inventory (continued)*						
Goal: Sustainable development **Objective:** Best return on investments **Priority:** Mitigate mid-term timber supply shortfalls			**Continuation** of Mid Coast TSA photo interpretation (VRI inventory product).	• **Enhanced** ability to address licensees issues and concerns. • **Focus** land based investments to the highest priorities and returns. • **Inform** those pursuing emerging opportunities. • **Assist** in government policy development.	• **Enhanced** ability to address licensees issues and concerns. • **Focus** land based investments to the highest priorities and returns. • **Inform** those pursuing emerging opportunities. • **Assist** in government policy development.	• **Enhanced** ability to address licensees issues and concerns. • **Focus** land based investments to the highest priorities and returns. • **Inform** those pursuing emerging opportunities. • **Assist** in government policy development.

Forests, Lands, & Natural Resource Operations 2011/12 to 2013/14 Land Based Investment Strategy

Linkage to LBIS Goal/Objective/ Priority	Activity	$ M	Outputs 2011/12	Targets 2011/12	Targets 2012/13	Targets 2013/14
•*Investment Category: Inventory (continued)*						
Goal: Sustainable development **Objective:** Best return on investments **Priority:** Mitigate mid-term timber supply shortfalls			**Initiation** of the following inventory (VRI) products: • Haida Gwaii air photo interpretation. • 100 Mile House TSA photo interpretation. • Kamloops TSA, TFL 23, and TFL 14 air photo acquisition. • Kamloops TSA air photo interpretation. • TFL 23 air photo interpretation. • TFL 14 air photo interpretation. • Mackenzie TSA audit sampling (70 ground samples). • Kootenay Lake TSA audit sampling (70 ground samples). • TFL 18 audit sampling (70 ground samples). • TFL 53 audit sampling (70 ground samples). • Cranbrook TSA audit sampling (70 ground samples). • Quesnel TSA ground sample data analysis. • TFL 18 ground sample data analysis. • Evaluation of new technologies and procedures for application in MPB impacted inventories. • Preparation of 3 VRI	•Inventories on key impacted units are not older than **10** **years.**	•Inventories on key impacted units are not older than **10** **years.**	•Inventories on key impacted units are not older than **10** **years.**

Linkage to LBIS Goal/Objective/ Priority	Activity	$ M	Outputs 2011/12	Targets 2011/12	Targets 2012/13	Targets 2013/14
			implementation plans.			
• *Investment Category: Inventory (continued)*						
Goal: Sustainable development **Objective:** Best return on investments **Priority:** Mitigate mid-term timber supply shortfalls	• Improve estimates of site productivity and growth expectations on existing and future managed stands in priority management units.		• Initiate the cataloguing of all available PEM, TEM, SIBEC and SIA data. Make data available through LRDW as a spatial layer and in tabular format. • Completion of PEM reconciliation in the **Vanderhoof** portion of the **Prince George TSA.** • Crosswalk PEM to new BEC in **Okanagan** dry belt and initiate SIBEC sampling. • Conclude **Kootenay Lake** PEM and initiate accuracy assessment. Completion of Kootenay Lake can also be used in **Arrow**. • Initiate new PEM in **Arrow.** First generation PEM in this unit cannot be used again for TSR. • SIBEC sampling in **Morice** as needed to complete this unit. • Complete BEC revision in **Merritt** to update existing PEM. Conduct SIBEC sampling as needed. • Complete necessary BEC update in **Lilloet** to use in PEM AA, complete SIBEC.	• **Improved** forecasts of the productivity on existing and future second growth stands.	• **Improved** forecasts of the productivity on existing and future second growth stands.	• **Improved** forecasts of the productivity on existing and future second growth stands.

Linkage to LBIS Goal/Objective/ Priority	Activity	$ M	Outputs 2011/12	Targets 2011/12	Targets 2012/13	Targets 2013/14
• *Investment Category: Inventory (continued)*						
Goal: Sustainable development **Objective:** Best return on investments **Priority:** Mitigate mid-term timber supply shortfalls	**Visual Inventory** • Complete re-inventory in those areas with significant past investment. • Direct new inventory work to occur in priority units.	0.15	**Priority 1 & 2 Areas plus EBM areas per LBIS** • *100 Mile House*: Complete carryover project • *Central Cariboo*: Update key areas of the district that are out of date to tighten linework. • *Okanagan-Shuswap*: Update 1/3 of district to correct line work accuracy issues • *Fort St. James*: Replace North Road broad polygon with detailed mapping. • *Vanderhoof*: Replace broad scenic area mapping with detailed inventory for Nechako River Corridor. • *Mid Coast & Kingcome TSAs*: Improved visibility mapping. • *Sunshine Coast*: re-inventory Sunshine Coast TSA. • *Provincia:l Project* to carry out QA on new VLI data and to cut new data to district tiles in preparation for upload to geographic warehouse.	• **Reduced** visually constrained area within *Williams Lake, Quesnel, Okanagan-Shuswap, Rocky Mountain, Fort St. James Vanderhoof, Mid-Coast, North Coast, Kingcome, Sunshine Coast,* and *100 Mile House* management units.	• Reduced amount of visually constrained area benefitting timber supply while not negatively impacting the visual resource.	• Reduced amount of visually constrained area benefitting timber supply while not negatively impacting the visual resource.
	EBM • Mapping support for implementation of old growth retention targets at the site series level.	0.5	• Complete terrestrial ecosystem mapping on **30** landscape units	• **400,000 ha** Terrestrial ecosystem mapped.	• **400,000 ha** Terrestrial ecosystem mapped.	• **400,000 ha** Terrestrial ecosystem mapped.
	SUB-TOTAL	6.1				

Linkage to LBIS Goal/Objective/ Priority	Activity	$ M	Outputs 2011/12	Targets 2011/12	Targets 2012/13	Targets 2013/14
Investment Category: Fish Passage						
Goal: Coordinated, integrated and sustainable management, development and use of natural resources **Objective:** Encourage investments to improve forest and range resources **Priority:** Restore access to fish habitat	• Assessment of culverts for fish passage. • Data analysis. • Priority remediation actions.	1.50	• Perform approximately **5,500** fish stream crossing (culvert) assessments and rank priorities. • Remediate approximately 4 priority fish stream crossings suitable as demonstration projects.	• **Assess** the highest provincial priority watersheds for fish stream crossings that may present barriers to fish passage. • **Remediate** high priority crossings; and that are suitable for demonstration projects, integrating video production opportunities. • **Re-connect** fish habitat.	• **Assess** the highest provincial priority watersheds for fish stream crossings that may present barriers to fish passage. • **Remediate** the highest priority crossings that re-connect the greatest amount of highest quality habitat. • **Re-connect** fish habitat.	• **Assess** the highest provincial priority watersheds for fish stream crossings that may present barriers to fish passage. • **Remediate** the highest priority crossings that re-connect the greatest amount of highest quality habitat. • **Re-connect** fish habitat.
	• Develop program strategy, deliver extension and training. • Data administration, collection, analysis and storage.		• Release revised Stream Crossing Guidebook. • Complete testing, load data and release stream crossing database. • Prepare program strategy and funding proposal. • Update fish passage course. • Update data submission and engineering standards.	• Completed modules for fish passage course. • Informed resource professionals. • Secure and accessible data. • Informed program planning and decision making.	• Informed resource professionals. • Secure and accessible data. • Informed program planning and decision making (using database).	• **Informed** resource professionals. • **Secure** and accessible data. • **Informed** program planning and decision making (using database).
SUB-TOTAL		1.5				

Linkage to LBIS Goal/Objective/ Priority	Activity	$ M	Outputs 2011/12	Targets 2011/12	Targets 2012/13	Targets 2013/14
Investment Category: Fire management						
Goal: Sustainable development **Objective:** Encourage investments to improve forest resources **Priority:** Manage impacts on forest resources from pest, disease, and wildfire	• Landscape fire management planning and implementation (for the enhancement and protection of values, resources and investments as they relate to fire).	0.085	• Development of a landscape fire hazard and risk analysis methodology. • Update algorithm for fuel types in B.C. • Development of a protocol for the integration of fire management, including hazard and risk analysis, into other resource management activities.	• **Enhanced Protection** of silvicultural Investments and other values identified within Fire Management Plans, by planning and identifying fire hazard on the landscape.	• **Enhanced Protection** of silvicultural Investments and other values identified within Fire Management Plans, by planning and identifying fire hazard on the landscape.	• **Enhanced Protection** of silvicultural Investments and other values identified within Fire Management Plans, by planning and identifying fire hazard on the landscape.
	SUB-TOTAL	0.085				

Linkage to LBIS Goal/Objective/ Priority	Activity	$ M	Outputs 2011/12	Targets 2011/12	Targets 2012/13	Targets 2013/14
Investment Category: Ecosystem Restoration						
Goal: Coordinated, integrated and sustainable management, development and use of natural resources **Objective:** Encourage investments to improve forest and range resources **Priority:** Manage impacts on forest and range resources from pest, disease, and wildfire	• Undertake ecosystem restoration treatments in key priority areas identified by local ER Steering Committees by applying various combinations of harvesting, spacing/thinning and prescribed fire.	0.75	• **2,000 ha** mechanical ER spacing/thinning. • **2,000 ha** of applied ER prescribed fire treatments. • Update **three** district 5-year Strategic ER Plans.	• **Restoration** treatments applied to **4000 ha** of key ecosystems to create landscapes more resilient to climate change. • **Contribute** 175,000 m^3 annually throughout the short and mid-term timber supply, and create other potential biomass opportunities. • **Reducing** excessive fuel loads, through spacing and prescribed fire, helps to mitigate wildfire risks, maintain community water supplies, protect air quality, endangered species and ecosystems, enhance First Nations values, and increase fibre availability. • **Maintain** a 3-1 funding ratio with our partner groups (results not included in these targets).	• **Restoration** treatments applied to **4000 ha** of key ecosystems to create landscapes more resilient to climate change. • **Contribute** 175,000 m^3 annually throughout the short and mid-term timber supply, and create other potential biomass opportunities. • **Reducing** excessive fuel loads, through spacing and prescribed fire, helps to mitigate wildfire risks, maintain community water supplies, protect air quality, endangered species and ecosystems, enhance First Nations values, and increase fibre availability. • **Maintain** a 3-1 funding ratio with our partner groups (results not included in these targets).	• N/A **Restoration** treatments applied to **4000 ha** of key ecosystems to create landscapes more resilient to climate change. • **Contribute** 175,000 m^3 annually throughout the short and mid-term timber supply, and create other potential biomass opportunities. • **Reducing** excessive fuel loads, through spacing and prescribed fire, helps to mitigate wildfire risks, maintain community water supplies, protect air quality, endangered species and ecosystems, enhance First Nations values, and increase fibre availability. • **Maintain** a 3-1 funding ratio with our partner groups (results not included in these targets).
SUB-TOTAL		0.75				

Linkage to LBIS Goal/Objective/ Priority	Activity	$ M	Outputs 2011/12	Targets 2011/12	Targets 2012/13	Targets 2013/14
Investment Category: Range						
Goal: Coordinated, integrated and sustainable management, development and use of natural resources **Objective:** Encourage investments to improve forest and range resources **Priority:** Manage impacts on forest and range resources from pest, disease, and wildfire	• Address issues identified in the government's Ranchers Task Force.	0.50	• Fence reconstruction. • Livestock watering facilities constructed and rehabilitated. • Damaged or degraded rangeland rehabilitation seeding.	• **Restoration** 14,500 **ha** of range land.	• **Restoration** 14,500 **ha** of range land.	• **Restoration** 14,500 **ha** of range land.
SUB-TOTAL		0.50				

Linkage to LBIS Goal/Objective/Priority	Activity	$ M	Outputs 2011/12	Targets 2011/12	Targets 2012/13	Targets 2013/14
LBI Development, Monitoring, and Continuous Improvement						
Goal: Sustainable development **Objective:** Best return on investment **Priority:** All	• Funding for FPIB for strategic planning, performance measure development, reporting and program support.	1.44	• Develop, refine and monitor the strategic plan, provide support for field operations, creation of standards and development best management practices.	• Investment strategy **delivered.** Strategic information to support decision making and improve mid-term timber supply forecasting is completed in *Lakes, Quesnel, Prince George and Williams Lake TSAs.*	• Investment strategy **delivered**. Strategic information to support decision making and improve mid-term timber supply forecasting is completed in *100 Mile house, Merritt, Morrice, and Okanagan TSAs.*	• Investment strategy **delivered**. Strategic information to support decision making and improve mid-term timber supply forecasting is completed in *Cranbrook, Kamloops, Invermere, and Arrow TSAs.*
SUB-TOTAL		1.444				
TOTAL		68.00				

Appendix 3 – Current Priority for Forest for Tomorrow

Proposed activities must be on provincial Crown land, primarily within the Timber Harvesting Land Base, and impacted by recent catastrophic disturbance that has affected mid- or long-term timber supply (e.g. wildfire or mountain pine beetle). Those Timber Supply Areas, followed in priority by Tree Farm Licences, most in need of long-term timber supply mitigation have been identified from silviculture strategies. Where possible, watersheds or wildfire-affected areas greater than 250 hectares within these management units will be selected as large project areas for an effective and efficient scale of operations, and specific project areas determined based on the program eligibility criteria.