

Forests, Lands and Natural Resource Operations

2013/14
to 2015/16



Land Based Investment Strategy

Introduction

The Land Based Investment Strategy is a program that supports investments for a broad range of on-the-ground activities that manage, protect or conserve B.C.'s natural resources.

Purpose:

The purpose of the strategy is to guide ongoing resource investments and short-term targeted investments in British Columbia's natural resources to realize environmental sustainability and economic prosperity.

Goals:

The 2013/14 goals of the Land Based Investment Strategy are to:

- Actively manage a portfolio of natural resources to uphold and enhance their value.
- Mitigate impacts due to catastrophic environmental disturbance or human action.
- Act on immediate needs/emerging priorities to enable the use of B.C.'s natural resources and contribute to the achievement of economic, social and environmental benefits.

Scope:

Eligible investment categories and priorities will be determined annually using the strategic direction from the following sources:

- The Ministry's service plan goals and objectives.
- Annual regional and provincial work plans that identify key priorities and projects.
- Other government commitments and specific initiatives.

Some of the existing activities and projects may have long-term strategies that identify priority work to be completed over a number of years.

As well, projects should meet the following government commitments:

- Eliminate the backlog NSR (pre 1987) by 2015.
- Continue remediating priority fish passage crossings, as per ministerial response to Forest Practices Board Special Investigation Report 25.

- Plant 20 million trees annually for the next 15 years on MPB and wildfire impacted lands
- Improving mid-term timber supplies through investments in incremental silviculture and tree improvement.
- Improve provincial forest inventories consistent with the 10 year inventory strategic plan.
- Prevent new, and reduce existing invasive plant impacts on forest and range resources acceptable to levels that are environmentally and economically acceptable.
- Protect the provinces international trade through the eradication of Gypsy Moth
- 2013/14-2015/16 Ministry Service Plan Performance Goals

Eligible Investment Categories and Priorities for 2013/14 to 2015/16

Eligible investment categories and priorities are aligned with the overall program goals and purpose described above.

Eligible Investment Category	Focus	Implementation Priorities
Forests for Tomorrow Program Current reforestation	<p>Priority given to those areas throughout the province where catastrophic disturbance has caused drops in mid- and long-term timber supply.</p> <p>Eliminate backlog NSR.</p> <p>Service Plan Performance Measure # 7 (Timber volume gain from Silviculture investments)</p>	<ul style="list-style-type: none"> • Annual reforestation level of 20 million¹ seedlings (at least) with a variety of species², on areas where the mid- and long-term timber supply has been impacted by catastrophic disturbance³. • Maintain adequate growth rates on existing government-funded land based investments through vegetation management. • Meet government obligations under <i>Forest and Range Practices Act</i> section 108. • Eliminate the provincial backlog (pre-1987) Not Satisfactorily Restocked (NSR) by 2015. Initial emphasis should be the appropriate re-classification of polygons.

¹ Excludes seedlings planted under FRPA S. 108

² Follow Forest For Tomorrow [Management of tree species composition policy \(#1\)](#), [FFT species and density indicators and targets](#), and [Assisted species migration guidance](#)

³ Requires significant levels of survey of impacted stands to inform decision-making when investing in, and delivering, reforestation and stand tending activities

Eligible Investment Category	Focus	Implementation Priorities
Forests for Tomorrow Program - Timber Supply Mitigation	Mitigate impacts on timber supply caused by catastrophic disturbance or constrained ⁴ timber Service Plan Performance Measure # 7 (Timber volume gain from Silviculture investments) Mid-term Timber Supply Action Plan	<ul style="list-style-type: none"> 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-baskets⁵” associated with the following areas⁶: <ul style="list-style-type: none"> Priority 1: Lakes, Quesnel, Prince George, Williams Lake Priority 2: 100 Mile House, Morice, Kamloops Okanagan Priority 3: Merritt, Cranbrook, , Invermere, Arrow Fertilization and stand tending (juvenile spacing) on coastal, southeast⁷, and northwest⁸ forest management units with constrained timber supply and where highest return-on-investment will be achieved to improve timber availability and value.
Forest Health	Focus on areas and impacts with significant forest health issues and opportunities to protect short and mid-term timber supplies	Support improved tree growth by managing and preventing the impacts on the forest and range from pests and disease.
Tree improvement	Focus on increasing genetic gain in tree productivity throughout the province as per the Forest Genetics Council Strategic Plan 2009-2014 . Service Plan Performance Measure # 7 (Timber volume gain from Silviculture investments) Mid-term Timber Supply Action Plan	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.

⁴ Public policy decisions that reduce harvest levels (e.g. Government Action Regulations)

⁵ Economic fibre-baskets defined as: 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.

⁶ 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.

⁷ Districts within the Kootenay-Boundary region.

⁸ Skeena-Stikine and Kalum districts.

Eligible Investment Category	Focus	Implementation Priorities
Inventory - Vegetation Resource Inventory and Site Productivity	Priority given to inventory activities (e.g. site productivity, vegetation resource inventory) that support land based investment decisions or help mitigate impacts to timber supply as per ten year plan.	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.
Inventory – Ecosystem Based Management	Priority given to inventory activities (including terrestrial ecosystem mapping, BEC refinement, and site productivity evaluation) that support land based investment decisions, help mitigate impacts to timber and habitat supply, and refine site productivity estimates.	Focus ecosystem delineation and site productivity updates within ecosystem-based management units on the Coast that represent priorities for timber supply mitigation and operational planning.
Inventory – Visual Quality	Priority given to inventory activities (e.g. Visual Quality) that help mitigate impacts to timber supply.	Focus visual quality updates on priority units for mid-term timber supply mitigation in the Interior and on ecosystem-based management units on the Coast.
Fire management	Focus on planning to minimize fire hazard risk on forest resources and investments.	Creation of fire risk planning tools to assist in reducing risk to forest resources and investments.
Fish –Fish passage	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).	Optimize fish habitat gains by targeting high-value watersheds and sites within those watersheds. Maintain emphasis on culvert assessments in watersheds without fish stream culvert assessment data, to provide a defensible basis for strategic prioritization of sites for remediation. The objective will be to provide unrestricted access to the lowermost parts of the stream network with the emphasis on providing access to the lowest gradient reaches and therefore the most optimal fish habitat. Priority will be given to fish species at risk and salmonids.
Ecosystem Restoration	Target the recovery of ecosystems that have been degraded, damaged or destroyed by re-establishing structural characteristics, species composition, and ecological processes. Service Plan Performance Measure # 6 (Recovery of open forest and grassland ecosystems)	Restore ecosystem function of in-grown open forests and native grasslands.

Eligible Investment Category	Focus	Implementation Priorities
Invasive Plants	Focus on areas and impacts with significant invasive plant issues as per the Ministry's Invasive Plant Strategy.	Managing and preventing the impacts on the forest and range from pests and disease.
Water	Support management activities undertaken by government and industry by providing information on risks to water and water related resources	Government will act to ensure our fresh water remains a rich resource that meets economic, social and environmental needs for generations to come.
Wildlife	Focus on identifying and designating protection and management actions for species and ecosystems at risk or of management priority to inform environmentally sustainable resource management, including sustainable use of wildlife.	The Conservation Framework drives prioritization for Species At Risk recovery plans, big game inventories, and Government Action Regulation implementation strategies.
Range	Focus on those range areas impacted by catastrophic disturbance such as mountain pine beetle, wildfire and drought.	Restore range areas impacted by catastrophic disturbance such as mountain pine beetle, wildfire, and drought.
Recreation sites and trails	Focus on maintaining recreation sites and trails to keep them open and safe for public use, while providing economic, social, health and environmental benefits to families, the general public, rural communities, and the Province.	Conduct maintenance and rehabilitation efforts to extend the life of existing recreation sites and trails; develop new sites and trails where the opportunity, demand and community support is high; lower operating costs and increase service capacity and the quality of outdoor recreation experiences through effective partnerships.

Budget 2013/14 (detail on targets and outputs in Appendix 1)

Investment category	Sub Category	2013/14(\$M)	Sub (\$M)
Forests For Tomorrow	Current Reforestation	23.5	23.5
	Timber supply mitigation		0.0*
Invasive Plants		0.3	0.3
Forest Health		3.5	3.5
Tree Improvement		3.0	3.0
Inventory	VRI/Site Productivity	8.55	8.0
	EBM		0.5
	Visual		0.05
Fish		1.0	1.0
Fire Management		0.1	0.1
Ecosystem Restoration		0.5	0.5
Range		0.2	0.2
Water		0.2	0.2
Wildlife	Inventory	1.0	0.5
	GAR/SAR		0.5
Recreation		0.5	0.5
Total		42.3	

*funding projected to be restored in 2014/15

Appendix 1- Land Base Investment Strategy Operational Budget (salaries excluded)

Investment Category	Activity	\$ M	Outputs 2013/14	Targets 2013/14	Targets 2014/15	Targets 2015/16
Forests for Tomorrow – Current Reforestation	<ul style="list-style-type: none">• 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.	\$ 23.5	<ul style="list-style-type: none">• 22.7 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.	<ul style="list-style-type: none">• 3.5 million m³ in 65 years• 2.8 million tonnes CO2e in 65 years• \$406 million GDP in 65 years• 72,000 pd short term employment• 3,678 FTE long-term employment in 65 years	<ul style="list-style-type: none">• 3.1 million m³ in 65 years.• 2.6 million tonnes CO2e in 65 years• \$366 million GDP in 65 years• 78,000 pd⁹ short term employment• 3,314 FTE long-term employment in 65 years	<ul style="list-style-type: none">• 3.1 million m³ in 65 years.• 2.6 million tonnes CO2e in 65 years• \$366 million GDP in 65 years• 78,000 pd short term employment• 3,314 FTE long-term employment in 65 years
	<ul style="list-style-type: none">• Meet government objectives under FRPA section 108.		<ul style="list-style-type: none">• FRPA section 108 applications are processed consistent with legislative requirements.	• Damaged obligation areas are rehabilitated in a timely manner		
SUB-TOTAL		\$ 23.5				

⁹ Increase in short-term employment due to projected increase in survey activity.

Forests, Lands and Natural Resource Operations 2013/14 to 2015/16 Land Based Investment Strategy

Investment Category	Activity	\$ M	Outputs 2013/14	Targets 2013/14	Targets 2014/15	Targets 2015/16
Forest Health	Annually update forest health conditions to implement cost effective treatments and update timber supply impacts.		80% of the province is flown with qualified surveyors.	Strategic information available for cost effective decision making in harvesting and treatments to protect stand inventory.		
	Survey training, quality control and provincial contract oversight and coordination.		10% quality check, coordinated and streamlined delivery, and provincial forest health conditions report. Updated training package.	Informed program planning, decision making, secure and accessible data and informed resource professionals.		
	Strategic deployment of spruce budworm control.		70,000 ha of Spruce Budworm sprayed.	0.75 million m ³ of mid-term timber supply saved in 13/14 with targets increasing to 1 M m ³ in 14/15 and 15/16..		
	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 primarily by harvesting (major licensees, BCTS and Small Scale Salvage) and a minor amount by single tree treatments.	Maintaining spruce and Douglas-fir beetle infestations at levels that allow maintenance of status as Aggressive Emergency Management Units in TSAs with critical mid term timber supply issues.		
	Management activities to identify, map and treat mountain pine beetle infestations to stop spread and protect surrounding forests from loss.		Mountain pine beetle infestations are identified for treatment through directed harvesting and, if funding available, by single tree treatments.	Spread of mountain pine beetle are maintained below critical thresholds (units will remain classed as suppression units).		
	Deploy Gypsy Moth control program in the Lower mainland.		Gypsy Moth populations are at a historic low but monitoring must be maintained to detect new infestations.	Protection of forests, farms and southern BC residents' trees and continued access to international forest product markets with no quarantine.		
	SUB-TOTAL		\$ 3.5			

Investment Category	Activity	\$ M	Outputs 2013/14	Targets 2013/14	Targets 2014/15	Targets 2015/16
Invasive Plants	<ul style="list-style-type: none"> Invasive Plant Early Detection and Rapid Response (EDRR) 	0.3	<ul style="list-style-type: none"> Provincial EDRR plan updated and implemented on 17 invasive plant species with historic accounts, and on any new species incursions discovered. 	<ul style="list-style-type: none"> All 17 historic candidate EDRR invasive plant species reviewed; control or containment action determined and implemented. No new invasive plant species established in the province. 	<ul style="list-style-type: none"> All historic candidate EDRR species sites addressed. No new invasive plant species established in the province. 	<ul style="list-style-type: none"> No new invasive plant species established in the province.
	<ul style="list-style-type: none"> Invasive Plant Inventory 		<ul style="list-style-type: none"> Inventory and incursion surveys completed in a minimum of 2 priority drainages. 	<ul style="list-style-type: none"> 20% of Invasive Plant inventory data for provincial restricted species in high risk areas is not older than 6 years. 	<ul style="list-style-type: none"> 45% of invasive plant inventory data for provincial restricted species in high risk areas is not older than 6 years. 	<ul style="list-style-type: none"> 75% of invasive plant inventory data for provincial restricted species in high risk areas is not older than 6 years.
	<ul style="list-style-type: none"> Invasive Plant surveys/treatments 		<ul style="list-style-type: none"> 30%* of highest provincial priority invasive plant species (i.e. Invasive Plant Program Goal 3 species) sites on Crown land are inspected and/or treated outside containment lines. <p><i>* achievement dependent upon partnership delivery funding level – target could drop to <5% with only LBIS 2013/14 fiscal resources).</i></p>	<ul style="list-style-type: none"> Some expansion of highest provincial priority invasive plant species beyond established containment lines 12% of highest provincial priority invasive plant species treatment sites are eradicated. 	<ul style="list-style-type: none"> Some expansion of highest provincial priority invasive plant species beyond established containment lines; limited reductions in target species density and distribution. 15% of highest provincial priority invasive plant species treatment sites are eradicated. 	<ul style="list-style-type: none"> Minimal expansion of highest provincial priority invasive plant species beyond established containment lines; some reductions in target species density and distribution. 15% of highest provincial priority invasive plant species treatment sites are eradicated.

<p>Invasive Plants (Continued)</p>	<ul style="list-style-type: none"> • Knapweed biological control agent dispersal monitoring completed in 2 districts. • Available operational biological control agents distributed to fill gaps; 20 % of efficacy monitoring sites reviewed. 		<ul style="list-style-type: none"> • Gaps in knapweed biocontrol agent distribution identified and fine-tuning of bioagent habitat preference determined. • Infestations of Dalmatian toadflax, hound's-tongue, and diffuse knapweed are under biological control. 	<ul style="list-style-type: none"> • Gaps in invasive plant biocontrol agent distribution and fine-tuning of bioagent habitat preference determined. • Infestations of Dalmatian toadflax, hound's-tongue, and diffuse knapweed, and spotted knapweed in lower elevations in the south are under biological control. 	<ul style="list-style-type: none"> • Gaps in invasive plant biocontrol agent distribution and fine-tuning of bioagent habitat preference determined. • Infestations of Dalmatian toadflax, hound's-tongue, and diffuse knapweed, and spotted knapweed in lower elevations in the south are under biological control. 	<ul style="list-style-type: none"> • Gaps in knapweed biocontrol agent distribution identified and fine-tuning of bioagent habitat preference determined. • Infestations of Dalmatian toadflax, hound's-tongue, and diffuse knapweed are under biological control.
	<ul style="list-style-type: none"> • Invasive Plant Partnership Delivery 	<p><i>Additional Funding dependant</i></p>	<ul style="list-style-type: none"> • 3500 invasive plant sites treated on Crown land through partnership delivery. • 75% of highest provincial priority invasive plant species (i.e. IPP Goal 3 species) sites on Crown land are inspected and/or treated outside containment lines. • 28 multi-stakeholder and local government partnerships for invasive plant management delivery are maintained. • 15 Local government weed programs 	<ul style="list-style-type: none"> • No regionally new invasive plant species establishment in areas where partnership delivery models are in place. • Containment of high priority species, including marsh plume thistle, hoary alyssum, and field scabious is maintained. • Reduced expansion of hawkweed and oxeye daisy into the Peace. • Treatment of knotweed in coastal areas increased by 10%. • Regional, Multi-Stakeholder Invasive 	<ul style="list-style-type: none"> • No regionally 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; one or more lines are pushed back. • Reduced expansion of hawkweed and limited expansion oxeye daisy into 	<ul style="list-style-type: none"> • No regionally 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; one or more lines are pushed back. • No expansion of oxeye daisy, and reduced expansion of hawkweed into

Forests, Lands and Natural Resource Operations 2013/14 to 2015/16 Land Based Investment Strategy

			leveraged. •12 First Nations Invasive Plant Partnership Programs maintained. •No establishment of new regional invasive plant incursions. •Existing Invasive Plant Strategic Plans reviewed and updated; new strategies developed in other areas.	Plant Strategic plans completed in 75% of the areas.	the Peace. • Treatment of knotweed in coastal areas increased by 10%. • Regional, Multi-Stakeholder Invasive Plant Strategic plans completed in 100% of the province.	the Peace. • Treatment of knotweed in coastal areas increased by 10%.
<i>Invasive Plants</i> (Continued)	<ul style="list-style-type: none"> Addressing Invasive Animal Species Incursions 		•Prevent establishment of species listed in <i>Wildlife Act</i> , Controlled Alien Species Regulation by responding to 100% of reports. Limit expansion of highest risk invasive animal species (e.g. European fire ants; New Zealand mud snail; grey squirrels)	<ul style="list-style-type: none"> Finalize and Implement EDRR plan for invasive species on 100% of new, high risk species (eg. Zebra or quagga mussels) incursions. Highest risk invasive animal species contained to current distribution 	<ul style="list-style-type: none"> No new high risk invasive animal species established in BC. Highest risk invasive animal species contained to current distribution. 	<ul style="list-style-type: none"> No new high risk invasive animal species established in BC. Highest risk invasive animal species contained to current distribution.
SUB-TOTAL		\$ 0.3				

Forests, Lands and Natural Resource Operations 2013/14 to 2015/16 Land Based Investment Strategy

Investment Category	Activity	\$ M	Outputs 2013/14	Targets 2013/14	Targets 2014/15	Targets 2015/16
Water	Assessments and/or management activities to identify or mitigate risk in community watersheds / watersheds where water is diverted for human consumption / fisheries sensitive watersheds and watersheds impacted by the MPB, wildfire or range activities	\$0.2	<ul style="list-style-type: none">–To complete assessments that assist in the identification of risks:to: water quality in community watersheds; the identification of Fisheries Sensitive Watersheds (FSW's); and impacts to water quality and quantity in areas experiencing forest management.	<ul style="list-style-type: none">Assessments to identify and/or mitigate risk to water quality:<ul style="list-style-type: none">- community / watersheds where water is diverted for human consumption;- fisheries sensitive watersheds and;- watersheds at by MPB, wildfire or range activities is identified.		
SUB-TOTAL		\$ 0.2				

Investment Category	Activity	\$ M	Outputs 2013/14	Targets 2013/14	Targets 2014/15	Targets 2015/16
<i>Tree Improvement</i>	<p>Provincial tree improvement program: activities:</p> <ul style="list-style-type: none">• Tree breeding.• Seed production in orchards.• Modifying seed transfer for climate change. <p>Tree Improvement Branch leads delivery.</p>	\$ 3.0	<ul style="list-style-type: none">• 123,750 ha reforested with "select seed" with an average genetic improvement over wild seed of 16%.	<ul style="list-style-type: none">• 4.95 million m³ in 65 years.• 4.9 million tonnes CO2e in 65 years.• \$474 million GDP in 65 years.• 1,046 FTE long-term employment in 65 years		
SUB-TOTAL		\$ 3.0				

Investment Category	Activity	\$ M	Outputs 2013/14	Targets 2013/14	Targets 2014/15	Targets 2015/16
<i>Inventory</i>	<ul style="list-style-type: none"> Complete forest inventories with significant past investments and direct all new inventory activities to the highest risk units. Investigate new technologies and methodologies to deliver cost effective inventory information in a timely manner. 	\$ 8.0	<ul style="list-style-type: none"> Complete the following VRI Projects: Photo interpretation in the 100 Mile House TSA, Williams Lake TSA (east), Haida Gwaii Forest District, Kamloops TSA, TFL 23 and TFL 35; Landscape Vegetation Inventory in the Williams Lake TSA (west); Photo sampling and analysis in the Prince George/Ft St James (south) Forest Districts; Lidar-based inventory on Northern Vancouver Island; several inventory analyses Acquisition of aerial photography in the following higher risk management units: Quesnel and Morice Forest Districts Initiation of the following VRI Projects: Photo interpretation in the Vanderhoof and Lakes TSAs; several audit and monitoring ground sampling initiatives in the Quesnel, Williams Lake, 100 Mile House, and Merritt TSAs; NVAF sampling in the Morice, Robson Valley, and the south Coast 	<p>Improved information for decision making by natural resource sector managers including:</p> <ul style="list-style-type: none"> 20 AAC determinations. 10+ strategic analyses in addition to addressing emerging mid-term timber supply questions; First Nations Treaty negotiations; carbon estimation. Enhanced ability to address licensees issues and concerns, help focus land based investments to the highest priorities and returns, inform those pursuing emerging opportunities; and better assist in government policy development.. Inventory information is current and complete for high risk management units. 		

Investment Category	Activity	\$ M	Outputs 2013/14	Targets 2013/14	Targets 2014/15	Targets 2015/16
Inventory (continued)			<ul style="list-style-type: none"> • Development and implementation of non-standard inventory processes and activities for priority MPB-impacted areas (i.e. using semi-automated classification of satellite imagery and MPB-issues specific sampling) • PSP re-measurements in the Quesnel and Mackenzie TSAs. Additional targeted data collection for growth and yield model calibration and validation. Release of improved versions of ministry GY models. 			
	<ul style="list-style-type: none"> • Improve estimates of site productivity and growth expectations on existing and future managed stands in high risk management units 		<ul style="list-style-type: none"> • Release version 2 of provincial site index GIS layer; Continue SIBEC sampling in the following management units: Cranbrook TSA and Arrow TSA 	<ul style="list-style-type: none"> • Forecasts of the productivity on existing and future second growth stands are improved. • Complete full draft PEM, develop AA sample plan • Preliminary sampling plan for PEM and SIBEC prepared 		

Forests, Lands and Natural Resource Operations 2013/14 to 2015/16 Land Based Investment Strategy

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Visual Quality	Complete re-inventory in those areas with significant past investment and direct new inventory work to occur in priority units.	0.05	Complete re-inventory of Sunshine Coast District Phase 3 Discovery Archipelago \$20,000. Provincial project to carryout Quality Assessment on new Visual Landscape Inventory (VLI) data and to cut new data to district tiles in preparation for upload to geographic warehouse. \$30,000	Visually constrained area potentially reduced within, Sunshine Coast District. Government Action Regulation Orders and VLI data uploaded in a timely manner.	Measure will be difference in ha between district tile on Land and Resource Data Warehouse (LRDW) March 31, 2015 and after completion of Inventory Work.	Measure will be difference in ha between district tile on LRDW March 31, 2016 and after completion of Inventory Work.
SUB-TOTAL		\$0.05				

Investment Category	Activity	\$ M	Outputs 2013/14	Targets 2013/14	Targets 2014/15	Targets 2015/16
Ecosystem Based Management	<p>Mapping support for</p> <p>(1) implementation of old growth retention targets at the site series level;</p> <p>(2) application of improved SIBEC estimates for assessment of timber supply;</p> <p>(3) SLR design</p>	\$0.5	<ul style="list-style-type: none"> Complete level R field data and spatial mapping for approximately 550,000 ha; 11 LUs: Machmell, Killippi, Sheemahant, Waswash, South Bentinck, Calvert, Clayton, Smitley/Noeick, Taleomey/Asseek, Twin, Labouchere Independent Accuracy Assessment of TEM _ North Coast TSA complete seamless TEM-PEM layer to support operational implementation (representation target setting, TSA) and analysis of options for inventory use where TEM is not yet completed (e.g., ssPEM, VRI) and provide revised TEM standards methodologies (provincial) - initial seamless map layer derived; evaluation by stakeholders and updates of layer ongoing; first revision to provincial standards completed partnership development with FN in current mapping and project mapping areas; and evaluation of joint TEM use and feasibility for capacity building within FN resource departments - initial joint meetings held onsite with Heiltsuk representatives including joint TEM flight; partnership meetings held with additional partners (Hakai Institute, SFU) and mapping consultants (Blackwell) 	<p>(1) 550,000 ha (approximately 7% of EBM land base) mapped with Level R Terrestrial Ecosystem Mapping (TEM) including MidCoast TSA LUs⁴ and NorthCoast TSA LUs⁵; priorities determined in part through stakeholder consultation and coordination with VRI progress to bring mapping coverage to approx. 60% of EBM land base</p> <p>(2) training and capacity development of Ecosystem Mappers within contractor community and FN communities in the Plan Area</p> <p>(3) Independent AA of LUs mapped in previous years;</p> <p>(4) Quantitative comparison of emerging mapping standards and approaches relative to traditional TEM;</p> <p>(5) Completion of seamless TEM for operational use, incorporating crosswalked ecosystem units for all 2012-14 data and any updated provincial BEC linework;</p> <p>(6) refinement of provincial BEC linework within any newly mapped areas - release of central coast mapping</p>	<p>□6)TEM for 1,000,000 ha, approximately 15% of EBM land base, to bring total mapping coverage to approximately 75% of land base</p>	<ul style="list-style-type: none"> TEM for approximately 1,000,000 ha to complete mapping on 90% of the EBM land base
SUB-TOTAL		\$ 0.5				

Investment Category	Activity	\$ M	Outputs 2013/14	Targets 2013/14	Targets 2014/15	Targets 2015/16
Fish	<ul style="list-style-type: none"> Assessment of culverts on fish streams for fish passage Confirm habitat gain in priority crossings, based on assessments Undertake site designs in priority crossings, based on habitat confirmations Undertake remediation actions for highest priority crossings Solicit program delivery with BCTS, districts, and/or engineering program 	\$1.0	<ul style="list-style-type: none"> Assess all fish stream crossings in priority third-order watersheds Remediate seven (7) high priority fish stream crossings: install 5 structures purchased in 2012/13, and deactivate 2 crossings where the road was re-routed away from the stream in 2012/13 May remediate a further four (4) high-priority fish stream crossings on Haida Gwaii: structures were pre-purchased in 12/13, but no field staff have yet been identified to tender/supervise the installations 	<ul style="list-style-type: none"> Assess the highest priority watersheds for fish stream crossings that may present barriers to fish passage Remediate the highest priority crossings Re-connect 18 km of high quality fish habitat plus access to a high value lake based on the seven (7) remediation crossings May re-connect an additional 2 km of high quality fish habitat if the four (4) additional crossings are remediated 	<ul style="list-style-type: none"> Assess the highest provincial priority watersheds for fish stream crossings that may present barriers to fish passage Remediate the highest priority crossings Re-connect the greatest amount of the highest quality fish habitat, with emphasis on salmonids and species-at-risk 	
	Fish Passage Technical Working Group (FPTWG): <ul style="list-style-type: none"> Represent entire NR sector Create linkages to other government agencies Provide expertise Data management Implement appropriate recommendations from the 2012/13 program assessment Undertake quality assurance (QA) 		<ul style="list-style-type: none"> Include Ministry of Transportation and Infrastructure, Oil and Gas Commission, and Ministry of Energy, Mines, and Natural Gas to FPTWG Maintain/update Provincial Stream Crossing Information System (PSCIS) database Maintain fish passage web training course. Improve program considering recommendations from program assessment Undertake field Quality Assessments review of remediation work 	<ul style="list-style-type: none"> Web delivery of fish passage course module Informed resource professionals Secure and accessible data Informed program planning and decision-making (using PSCIS database) 	<ul style="list-style-type: none"> Informed resource professionals Secure and accessible data Informed program planning and decision-making (using PSCIS database) Improved delivery considering QA field reviews 	
SUB-TOTAL		\$1				

Forests, Lands and Natural Resource Operations 2013/14 to 2015/16 Land Based Investment Strategy

Investment Category	Activity	\$ M	Outputs 2013/14	Targets 2013/14	Targets 2014/15	Targets 2015/16
<i>Fire Management</i>	Undertake landscape fire management planning and implementation for the enhancement and protection of values, resources, and investments as they relate to fire hazard and risks.	\$0.1	<ul style="list-style-type: none"> Fire/Fuel treatment implementation plans partially developed in 3 Districts that will be used to prioritize Ministry program spending toward high wildfire risk areas to mitigate impacts on priority values (ex. FFT and Ecosystem Restoration). 	<ul style="list-style-type: none"> Reduced fire hazard and risk to communities and priority natural resource values where planning and management has taken place ex. Mid Term Timber Supply, at risk Community Watersheds, Silviculture Investments. Landscape fire management plans that will be used to inform land management activities that include suppression, midterm timber supply planning and harvesting, and Forest Renewal Strategy District plans. 		
SUB-TOTAL		\$ 0.1				

Forests, Lands and Natural Resource Operations 2013/14 to 2015/16 Land Based Investment Strategy

Investment Category	Activity	\$ M	Outputs 2013/14	Targets 2013/14	Targets 2014/15	Targets 2015/16
Ecosystem Restoration	<ul style="list-style-type: none">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	0.5	<ul style="list-style-type: none">1400 ha mechanical ER spacing/thinning2000 ha of applied ER prescribed fire treatments, andUpdate three district 5-year Strategic ER Plans	<ul style="list-style-type: none">Restoration treatments applied to 2800 ha of key ecosystems to create landscapes more resilient to climate change.Contribute 110,000 m3 annually to 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.		
SUB-TOTAL		\$0.5				

Forests, Lands and Natural Resource Operations 2013/14 to 2015/16 Land Based Investment Strategy

Investment Category	Activity	\$ M	Outputs 2013/14	Targets 2013/14	Targets 2014/15	Targets 2015/16
Range	<ul style="list-style-type: none">Address issues identified in the government's Ranchers Task Force.	\$0.2	<ul style="list-style-type: none">Livestock watering infrastructure constructed and rehabilitated.Fence reconstruction.	<ul style="list-style-type: none">Restoration 3,000 ha of rangeland each year.		
SUB-TOTAL		\$0.2				

Forests, Lands and Natural Resource Operations 2013/14 to 2015/16 Land Based Investment Strategy

Investment Category	Activity	\$ M	Outputs 2013/14	Targets 2013/14	Targets 2014/15	Targets 2015/16
Recreation	<ul style="list-style-type: none">Manage approximately 25 % of the recreation sites and trails - includes maintenance and rehabilitation and high priority development projects .	0.5	<ul style="list-style-type: none">Maintain and as necessary rehabilitate 320 recreation sites and 200 trails.	<ul style="list-style-type: none">Sustain existing levels of use at recreation sites and trails.	<ul style="list-style-type: none">5% increase in use at recreation sites and trails (over previous year).	<ul style="list-style-type: none">5% increase in use at recreation sites and trails (over previous year).
	<ul style="list-style-type: none">Maintain partnership delivery of recreation site and trail program; including support from First Nations, Forest Industry and community groups		<ul style="list-style-type: none">Leverage 211 partnership agreements in place for managing and maintaining recreation sites and trails essential to communities.	<ul style="list-style-type: none">Extended the life of recreation sites and trails.Provide communities safe, healthy and sustainable outdoor rec opportunities.		
SUB-TOTAL		\$ 0.5				

Investment Category	Activity	\$ M	Outputs 2013/14	Targets 2013/14	Targets 2014/15	Targets 2015/16
Wildlife	<ul style="list-style-type: none"> GAR/EMPR Implementation- WHA 	0.5	Protocol development, habitat inventories and stakeholder consultation to locate and designate candidate WHAs, UWRs, FSWs, and TSSs	Decrease the backlog of GAR/EMPR habitat authority designations		
	<ul style="list-style-type: none"> GAR/EMPR Implementation- UWR 					
	<ul style="list-style-type: none"> GAR/EMPR Implementation- FSW/TSS 					
	<ul style="list-style-type: none"> Species at Risk 		Rank 50 species at risk, map 200 new occurrences	Annually, on a priority basis, review ranks of 50 species, map and make available 200 new species at risk occurrences, complete 3-5 recovery plans, complete 1-2 implementation plans, support 5-10 projects to implement actions from species at risk recovery plans.		
	<ul style="list-style-type: none"> Effectiveness Monitoring for Ecological values 		Refine protocols and develop approaches in support of integrated ecosystem monitoring and effectiveness evaluation.	Refine protocols and develop approaches in support of integrated ecosystem monitoring and effectiveness evaluation.		
	<ul style="list-style-type: none"> Ecosystem Level Tools 		Work through NRS to bring environmental values into integrated decision making, including application of environmental mitigation by working with proponents and government staff.	Work through NRS to bring environmental values into integrated decision making, including application of environmental mitigation by working with proponents and government staff.		

Investment Category	Activity	\$ M	Outputs 2013/14	Targets 2013/14	Targets 2014/15	Targets 2015/16
Wildlife (continued)	<ul style="list-style-type: none"> Data Management 	(cont.)	Functioning Data systems that: standardize the capture, provide effective and efficient storage, and allow for timely and suitable retrieval of data and information from across the natural resource sector and associated with habitat authorities, ecological inventories, and monitoring results..	Reduce or eliminated backlogs of fish, wildlife and terrestrial ecosystem data and information. Standardized data submission and workflow processes. Review and update 5 provincial standards related to inventory for fish, wildlife and terrestrial ecosystems. Maintain information management systems. Easy to use and relevant information access and analysis tools.		
	<ul style="list-style-type: none"> Fisheries Stock Assessment 		Assessments to support management decisions based on the best available science to meet fisheries conservation and use objectives for priority sport fish species	Provide provincial-scope planning and corporate accountability for the management of high profile fisheries; Optimize sustainable harvest; Increase angler opportunities and participation		
	<ul style="list-style-type: none"> Caribou Recovery Planning 		Monitor implementation of the Peace Northern Caribou Plan scheduled for completion in fall 2012 Donor herd for PS transplant and likely donor herd for captive breeding program To evaluate performance of transplant to meet recovery objectives Part of commitment to survey each herd every 3 year Federal recovery strategy is scheduled for release Fall 2012. BC Plan needs to be nearing completion	<ul style="list-style-type: none"> 		
	SUB-TOTAL	0.5				

Forests, Lands and Natural Resource Operations 2013/14 to 2015/16 Land Based Investment Strategy

Investment Category	Activity	\$ M	Outputs 2013/14	Targets 2013/14	Targets 2014/15	Targets 2015/16
<i>Wildlife Inventory</i>	<ul style="list-style-type: none"> Big game and fish inventory 	0.5	<p>Optimized, sustainable use of fish and wildlife to support First Nations needs, recreational hunting and fishing and an economically viable guide industry.</p> <ul style="list-style-type: none"> Inventories to address First Nations concerns with fish and wildlife populations and enable high priority authorizations to proceed. Specific inventory focus on moose populations to identify extent and degree of moose declines throughout BC. Use survey results to support provincial and regional moose management plans.. 	<ul style="list-style-type: none"> Maintain sustainable harvest of deer, and elk at 2010/11 levels where biologically feasible Maintain regional moose harvest at 2010/11 level where biologically feasible. Reduce authorization backlog 97,000 basic hunter licences sold 	<ul style="list-style-type: none"> Increase sustainable harvest of deer and elk by 12% over 2011/12 levels Maintain regional moose harvest at 2010/11 level where biologically feasible. Reduce authorization backlog 98,500 basic hunter licences sold 	<ul style="list-style-type: none"> Increase sustainable harvest of deer, and elk by 15% over 2011/12 levels Maintain regional moose harvest at 2010/11 level where biologically feasible. Reduce authorization backlog 100,000 basic hunter licences sold
SUB-TOTAL		\$ 0.5				
TOTAL 2013/14		\$42.3				

