

Defined Forest Area Data Set – 2009  
Indicators

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## Indicator 1: Percent of productive forest area more than 60 years old

Forest age may be an indicator of broader biodiversity attributes. The 60-year age category is selected as a significant indicator because it is the minimum age at which management treatments can begin to create the structural elements that support old growth biodiversity.

### Value: The representation of older forest (>60 years) in the DFA.

**Objective:** The representation of older forest (>60 years) in the DFA remains stable over time.

<b>Indicator 1:</b>	Percentage of productive forest area more than 60 years old.
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**Target:** 36%.

**Variance:** Any value greater than the target is acceptable.

**Forecast:** Age class distributions are forecast through the Timber Supply Analysis of the TFL 39 Management Plan.

**Legal Requirement:** None

### Data:

**Inventory:** The forest inventory for TFL 39, Block 2 is maintained on an ongoing basis by MIFO staff.

**Reporting:** The GIS analyst compiles the data annually and reports on the indicator performance in the annual SFM Report.

### Note:

The baseline dataset was established as of 2005, the last year of significant changes to the DFA.

### Performance:

The forests with the DFA remain within the objective.

Year	Age (by pct of productive forest area)	
	> 60 Years	> 150 Years
2005	46.7	40.6
2006	48.1	40.9
2007	47.2	40.1
2008	47.4	39.8
2009	48.2	39.7

## Indicator 2: Old growth (>250 years) representation by BEC variant

This indicator measures the amount of old growth forest in the DFA by broad ecological classification. Some species are specifically adapted to habitats found in old growth forest.

### Value: The representation of Old Growth seral stages at the landscape level.

**Objective:** At the landscape level, old growth representation of each Biogeoclimatic Ecosystem Classification (BEC) variant is retained.

<b>Indicator 2:</b>	The percentage of each Biogeoclimatic variant of the DFA that is classified as Old Growth (250+ years old).
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**Target:** Levels are such that they meet those identified in Table 3 of page 17 of the Biodiversity Guidebook (1995).

**Variance:** Continual improvement to decrease deficit.

**Forecast:** Draft Old Growth Management Areas are established and pending approval in 2009. Sayward LU OGMA's are established and approved.

**Legal Requirements:** FPCBCA s.4(2) (Repealed). Non-Spatial Old Growth Order – June 30/04.

### Data:

Old growth or old seral is defined by the MoF in the Biodiversity Guidebook as forests 250 years of age and older. Forest ages are determined from the forest inventory. For productive second-growth forest areas, age is determined by considering the difference between the current (or reference) year and the establishment year. For mature stands (established prior to 1866), age is determined by considering the current year, the year of the timber cruise and the age class assigned at the time of the timber cruise.

The map of BEC (Biogeoclimatic Ecosystem Classification) variants is obtained from the MoF and combined with the current forest inventory to generate the summary of old growth by variant within the DFA.

The FPC Biodiversity Guidebook defines the natural disturbance type and sets targets for retention of old seral stage forest by Biogeoclimatic unit. Landscape units and biodiversity emphasis is set by the Ministry of Forests, Campbell River District, through land use planning processes.

**Inventory:** The baseline data was compiled from the 1997 forest inventory less annual forest depletion records from 1998 to 2005. In 2005 the forest inventory was re-compiled and forms the basis of reporting, less annual depletion, going forward. This report will be re-compiled on an annual basis following the depletion update of the forest inventory.

**Reporting:** The GIS analyst compiles the data from the GIS database and reports on the indicator performance in the annual SFM Report.

### Performance:

As a result of historical harvest patterns, BEC variants in two landscape units are short of the old growth targets. Although below targets, OGMA's are established for the Sayward LU and draft OGMA's are proposed for the Salmon and all other Landscape Units. There will be no further harvesting of old growth within the Salmon LU until OGMA's become established there. Also, a recruitment strategy is in development to produce stands with OG characteristics.

LU_NAME	BECLABEL	TARGET %	OG_AGE	AREA_HA	BEC AREA	AVAILABLE OG
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Adam-Eve	CMA unp	85%	250+	104.8	121.1	86.5%
Adam-Eve	CWH vm 1	13%	250+	4,869.3	21,198.1	23.0%
Adam-Eve	CWH vm 2	13%	250+	8,131.2	13,323.8	61.0%
Adam-Eve	MH mm 1	19%	250+	4,791.1	5,632.5	85.1%
				17,896.4	40,275.5	44.4%

Salmon	CMA unp	85%	250+	15.3	15.3	100.0%
Salmon	CWH mm 1	9%	250+	4,881.6	23,198.4	21.0%
Salmon	CWH mm 2	9%	250+	3,365.5	8,232.9	40.9%
Salmon	CWH vm 1	13%	250+	552.8	1,277.1	43.3%
Salmon	CWH vm 2	13%	250+	337.3	474.9	71.0%
Salmon	CWH xm 2	9%	250+	803.9	14,180.9	5.7%
Salmon	MH mm 1	19%	250+	2,859.7	3,505.0	81.6%
				12,660.6	50,884.6	24.9%

Sayward	CWH mm 1	9%	250+	139.3	530.3	26.3%
Sayward	CWH mm 2	9%	250+	167.4	240.1	69.7%
Sayward	CWH xm 2	9%	250+	385.0	4,763.0	8.1%
Sayward	MH mm 1	19%	250+	24.9	25.1	99.4%
				716.6	5,558.4	12.9%

White	CMA unp	85%	250+	94.3	94.3	100.0%
White	CWH mm 1	13%	250+	235.8	732.4	32.2%
White	CWH mm 2	13%	250+	372.4	530.5	70.2%
White	CWH vm 1	19%	250+	5,149.1	15,238.7	33.8%
White	CWH vm 2	19%	250+	5,834.1	8,854.3	65.9%
White	CWH xm 2	13%	250+	213.5	1,417.1	15.1%
White	MH mm 1	28%	250+	4,201.5	4,731.8	88.8%
				16,100.8	31,599.1	51.0%

				47,374.4	128,317.6	36.9%
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### Indicator 3: Percent of total opening area harvested with non-clearcut systems

This indicator measures the proportion of opening area harvested annually that is not clearcut. Non-clearcut silviculture systems provide for diversity by increasing the range of habitat and stand structure that is retained.

#### Value: Forest retention at the landscape level.

**Objective:** An amount of existing stand variety is retained in harvested areas.

<b>Indicator 3:</b>	The percentage of Retention Systems (%RS) utilized over total annual opening area by RMZ and variant climatic class applied over a 5-year period.
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**Target (2010):** Minimum of - 50% in Enhanced Wet  
60% in Enhanced Dry and General Wet  
70% in General Dry

**Target (2009):** Half way towards 2010 target.

**Variance:** Any value greater than or equal to the target is acceptable. Once phase-in of the strategy is completed in 2010 the %RS targets will be applied over a 5-year period in order to maintain flexibility, given the need to adjust harvesting schedules for weather, markets or other conditions.

**Forecast:** In 2008, the Western Forest Strategy, a program for conserving biodiversity on company tenures, was implemented including the setting of retention system goals. A 3-year phase in period is required in order that new engineering layout may reflect the revised targets.

**Legal or Other Requirements:** The Western Forest Strategy is a corporate objective.

#### Data:

Openings are defined as non clear-cut if they meet or exceed the minimum standards for variable retention. Variable retention is achieved when more than half the total area of the opening is within one tree height from the base of a tree or group of trees, whether or not the tree or group of trees is inside the opening.

The total opening area includes areas (patches and individual trees) of retention that are within the opening.

**Inventory:** The silviculture system to be used is written into the site plan (SP) by the prescribing Forester during opening planning. The silviculture system of each opening is tracked in the CenFor database. Compliance with the SP is verified during the Post Harvest Assessment by forestry personnel.

**Reporting:** The Operations Forester compiles the annual data from the CenFor database and reports on the indicator performance in the annual SFM Report. Rationales are provided for any deviations of the data from the target.

**Performance:**

Resource Management Zone	Variant Climate Class	2010 Target %RS	2009 Target %RS	2009 %Achieved
Enhanced	Dry	60	80	100%
	Wet	50	75	90.5%
General	Dry	70	85	100%
	Wet	60	80	78.8%

**Definitions:**

Resource Management Zones of the Vancouver Island Land Use Plan

Variant Climate Class: Dry - CWHxm, mm1  
Wet - CWHmm2, vm1, vm2, MH

Silvicultural System:

*Retention system* means a silvicultural system that retains individual trees or groups of trees to:

- maintain structural diversity over the area of the cutblock for at least one rotation
- leave more than half the total area of the cutblock within one tree height from the base of a tree or group of trees, whether or not the tree or group of trees is inside the cutblock.

Retention can be dispersed throughout a cutblock as single trees or aggregated groups of trees.

#### Indicator 4: Forest age class distribution

Age class distribution is an indicator of sustainability for ecological, social and economic considerations.

**Value:** The age class distribution of the DFA forest inventory.

**Objective:** Ensure the age class distribution minimizes any future fall down effects of the AAC.

<b>Indicator 4:</b>	Forest Inventory by age class distribution with a LRSY run.
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**Target:** Minimize fall down effects of the AAC.

**Variance:** +/- 10%.

**Forecast:** Age class distributions are forecast as part of the Timber Supply Analysis of the Management Plan. The next TSA is expected in 2009.

**Legal Requirements:** None

#### Data:

Forest management in BC has proceeded in recent decades with the objective of converting the public forest from predominantly old growth to one with a large component of protected old growth and a commercially accessible remainder distributed primarily among age classes up to the age of rotation.

The primary instrument of this conversion has been the Annual Allowable Cut allocations established by the province's Chief Forester with consideration for various objectives.

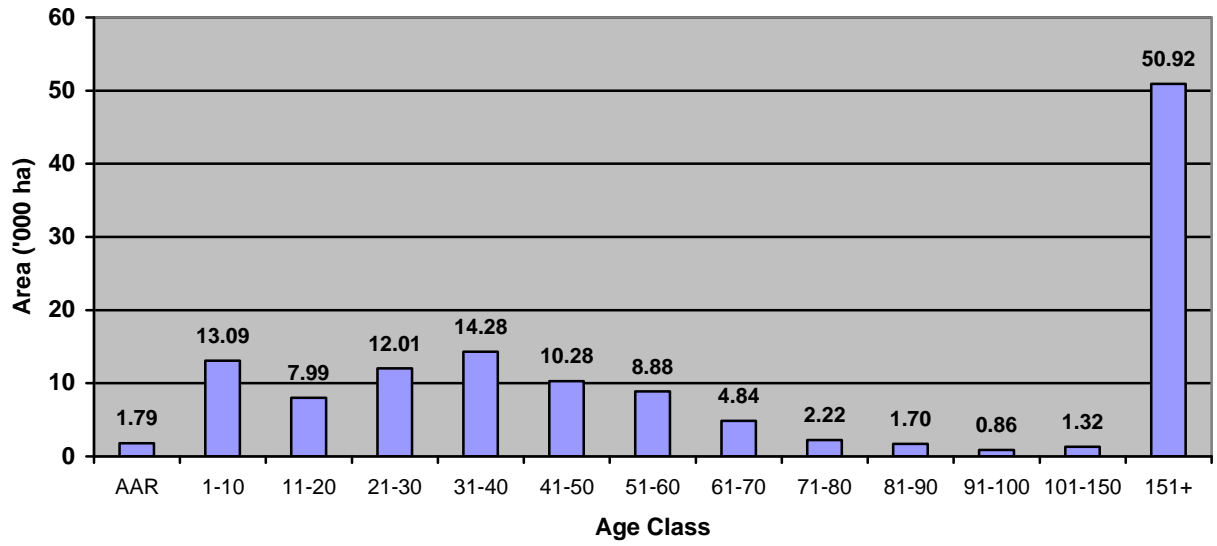
**Inventory:** WFP Corporate Inventory and Analysis department maintains 30 to 40 years of historic data on age class distribution by area for total productive forest lands. This is generally updated on an annual basis. This data is located in the Forest Inventory for TFL 39 Block 2.

**Reporting:** The GIS analyst compiles the data annually and reports on the indicator performance in the annual SFM Report.



**Performance:**

**2009 Forest Age Class Distribution**



## Indicator 5: Percent of primary, secondary and tertiary species (2nd growth)

This indicator measures the diversity of commercial tree species, which may be an indicator of broader biodiversity attributes.

### Value: Tree species representation in the new forest.

**Objective:** The representation of the existing native tree species in the regenerated forest remains stable over time.

<b>Indicator 5:</b>	The average annual percentage representation of each tree species in the composition of second growth.
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**Target:** Maintain percentages of second growth species that are comparable to those in the historic 2005 baseline inventory.

**Variance:** +/- 20% of the 2005 baseline.

**Forecast:** Climate change may effect representation of regenerated tree species. The establishment of Douglas-fir will likely increase while western hemlock and Amabilis fir may decrease with time.

**Legal Requirements:** FPPR s. 26.

### Data:

Since the 1980s, the DFA forest inventory has described each second growth stand according to the area occupied by its three most prevalent commercial species. This data includes only second growth areas that have been established since 1981.

Total species percentages for these second growth stands within the DFA are calculated by multiplying species percentages by hectares for each contributing stand, summing the hectares so derived for each species, and expressing them as percentages of the total area in the data set.

In describing only the three dominant species within each stand, this data is in most cases an understatement of actual species diversity within any given stand.

**Inventory:** Forest inventories have been maintained for 30 to 40 years for the DFA - Block 2 of TFL 39. The inventory is maintained by MIFO.

**Reporting:** The GIS analyst compiles the data annually and reports on the indicator performance in the annual SFM Report.

### Note:

The baseline datum has been reset to the year 2005 to reflect information about the current WFP MIFO Defined Forest Area. Pine and Spruce data at 0.1% and 0.7% of second growth inventory are not considered significant or reliable measures for purposes of this report.

**Performance:**

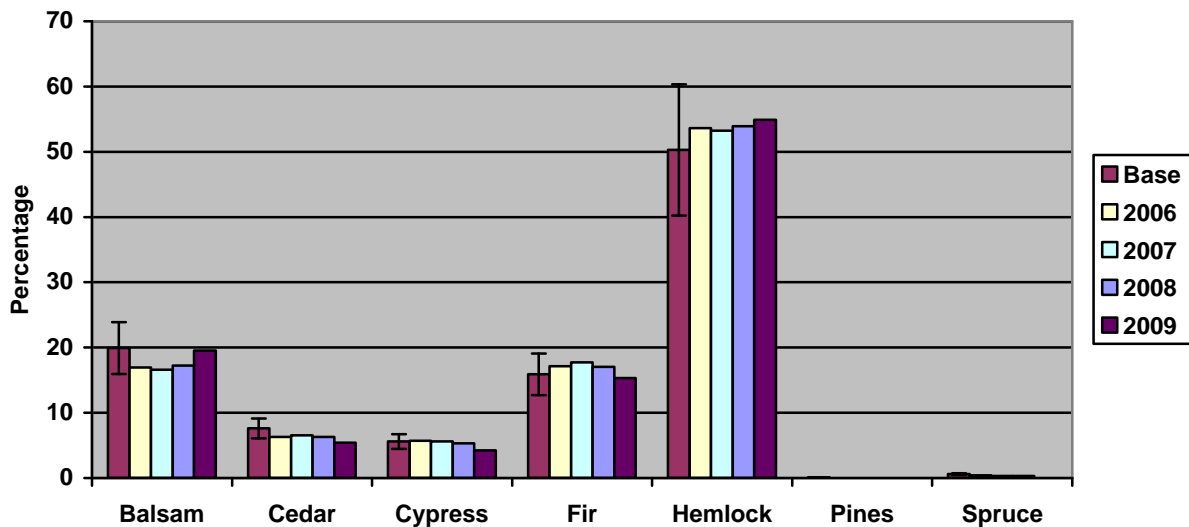
The table below shows second growth species by area (in hectares) and the percent of total area represented by each species. The error bars on the graph following represent the  $\pm$  20% acceptable variance.

Cumulative Years	Second growth species area and percent by the three dominant species								
	Balsam	Cedar	Cypress	Fir	Hemlock	Pine	Spruce	Total	
<b>B A S E</b>	2005	6,655	2,532	1,866	5,314	16,837	24	222	33,450
	Percent	19.9	7.6	5.6	15.9	50.3	0.1	0.7	100.0
	Variance: + 20% is	23.9	9.1	6.7	19.1	60.4	0.1	0.8	N/A
- 20% is	15.9	6.1	4.5	12.7	40.2	0.1	0.6		
2006	4,566	1,702	1,544	4,637	14,514	10	95	27,069	
Percent	16.9	6.3	5.7	17.1	53.6	0	0.4	100.0	
2007	4,806	1,889	1,625	5,120	15,416	10	100	28,966	
Percent	16.6	6.5	5.6	17.7	53.2	0	0.3	100.0	
2008	5,100	1,852	1,555	5,008	15,911	10	100	29,536	
Percent	17.2	6.3	5.3	17.0	53.9	0	0.3	100.0	
2009	5,752	1,591	1,243	4,506	16,178	26	113	29,409	
Percent	19.5	5.4	4.2	15.3	54.9	0	0	100.0	

*This indicator has been recompiled using NAD83 base map data.*

Areas without species data have been calculated using the species percentage at pre-harvest by year, except areas which have been planted, in which case percentages of species planted were used.

**Species as percent of total second growth area**



## Indicator 6: Gross volume by species of mature forest

Diversity of tree species may be an indicator of broader biodiversity attributes.

### Value: Tree species representation in the mature forest.

**Objective:** The species mix found in the mature forest is kept similar to the historic mix.

<b>Indicator 6:</b>	The percentage of the mature inventory of the DFA by species.
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**Target:** Maintain percentages of mature species that are comparable to those in the 2005 baseline inventory.

**Variance:** +/- 20% of the 2005 inventory.

**Forecast:** Given no further landbase withdrawals, mature inventory percentages should remain within allowable variance. Harvest percentages are forecast in the Timber Supply Analysis for the TFL.

**Legal Requirements:** None.

### Data:

“Mature” is defined here as forest areas established before 1868. In this instance it also includes “old growth,” which is described in most MoF publications as older than 250 years for coastal forests. Gross volumes (which include a volume reduction for estimated decay) for the seven coniferous species within this category are established by timber cruises.

Inventory: There are 30 to 40 years of historic data maintained by WFP corporate Inventory and Analysis department. Volumes are updated with each inventory revision, usually on an annual basis.

Reporting: The GIS analyst compiles the data annually and reports on the indicator performance in the annual SFM Report.

Note: In reference to the Pine and Spruce, the percentages are not considered significant, not visible on the ground and will not be a concern for compliance.

### Note:

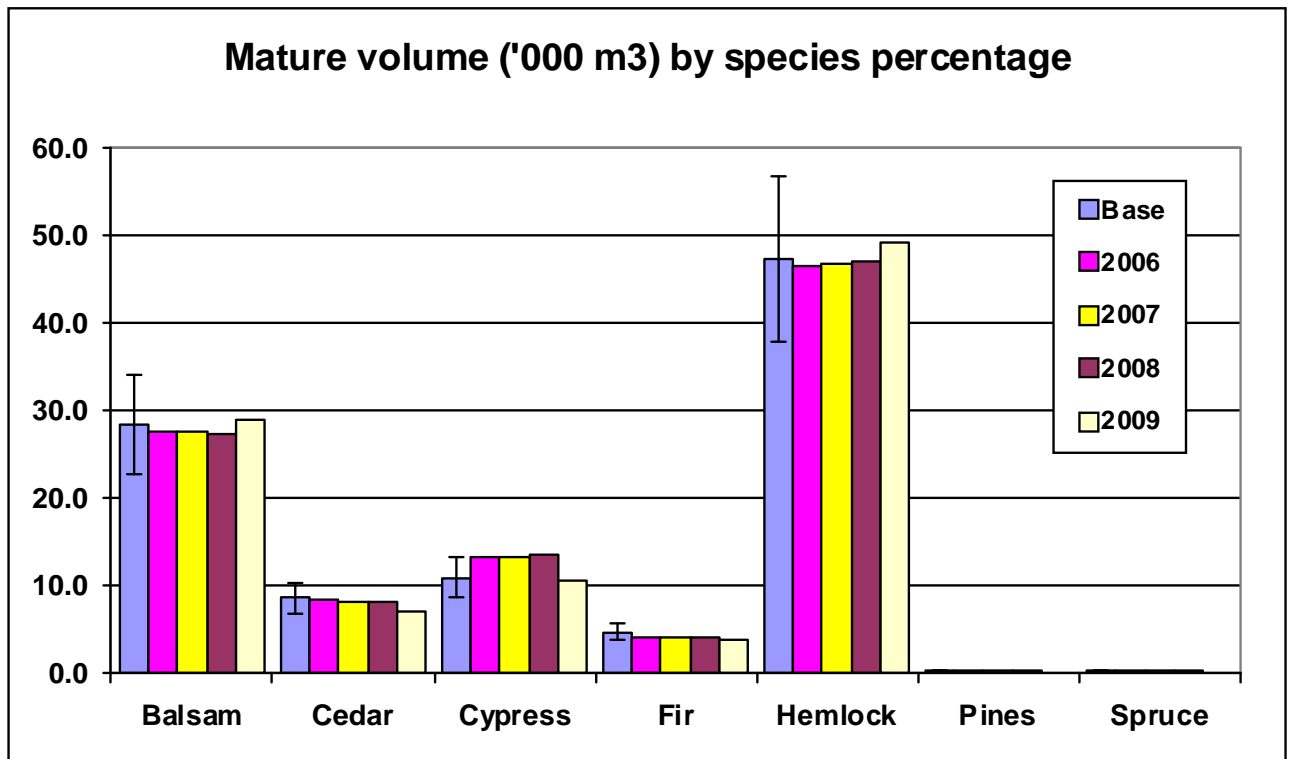
The baseline datum has been reset to the year 2005 to reflect information about the current WFP MIFO Defined Forest Area.

### Performance:

The table below shows mature volume (in m<sup>3</sup>) by species and the percent of total mature volume that figure represents. All species are being retained within the ± 20% variance from the 2005 base. The error bars on the graph following represent the ± 20% acceptable variance.

### Mature Volume (000m<sup>3</sup>) by Species

Cumulative Years		Species							Total
		Balsam	Cedar	Cypress	Fir	Hemlock	Pines	Spruce	
<b>B A S E</b>	2005 Percent	11,707 27.1	3,794 8.8	5,332 12.4	2,430 5.6	19,721 45.7	68 0.2	79 0.2	43,131 100
	Variance + 20%	32.5	10.6	14.9	6.7	54.8	0.2	0.2	N/A
	-20%	21.7	7.0	9.9	4.5	36.6	0.2	0.2	
	2006 Percent	10,889 27.6	3,304 8.4	5,189 13.1	1,570 4.0	18,411 46.6	29 0.1	59 0.1	39,451 100.0
	2007 Percent	10,254 27.4	3,042 8.1	4,985 13.3	1,504 4.0	17,508 46.8	29 0.1	56 0.2	37,378 100.0
	2008 Percent	10,082 27.3	2,986 8.1	4,952 13.4	1,439 3.9	17,327 47.0	29 0.1	54 0.1	36,869 100.0
	2009 Percent	9953 28.9	2429 7	3667 10.6	1321 3.8	17024 49.3	4 <0.1	41 <0.1	34,438 100.0



**Indicator 7: Stand level retention as a percent of total non-clearcut opening area**

Stand level retention provides for diversity by increasing the range of habitat and stand structure. Retention also contributes to genetic diversity by increasing the potential range of parental genes.

**Value: Maintenance of variability in stand structure.**

**Objective:** Existing stand structure is retained at the opening level.

<b>Indicator 7:</b>	The annual average % of the total area of non-clearcut openings that is retained by RMZ and variant climatic class.
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**Targets:** Minimum of - 10% in Enhanced Wet  
15% in Enhanced Dry and General Wet  
20% in General Dry and Special Dry & Wet

**Variance:** Any value greater than or equal to the minimum is acceptable. A 3-year (2008 - 2010) phase-in period is required in order that new engineering layout may reflect the revised targets.

**Forecast:** This indicator was amended in 2008 as a result of new zonation associated with the implementation of the Western Forest Strategy, a program for conserving biodiversity on company tenures that provides the basis of guidelines to operations.

**Legal or Other Requirements:** The Western Forest Strategy is a corporate objective.

**Data:**

Openings are defined as non-clearcut if they meet or exceed the minimum standards for variable retention. Variable retention is achieved when more than half the total area of the opening is within one tree height from the base of a tree or group of trees, whether or not the tree or group of trees is inside the opening.

Stand level retention may include patches of trees (determined by estimating the area of the patches) and individual trees (area contribution is estimated by comparing the basal area of the trees to the average basal area of the initial stand).

Inventory: Stand level retention objectives are written into the site plan by the prescribing Forester during opening planning. The actual level of retention is then verified during the Post-Harvest Assessment by forestry personnel and entered into the CenFor database.

Reporting: The Operations Forester compiles the data from the CenFor database and reports on the indicator performance in the annual SFM Report.

**Performance:**

Resource Management Zone	Variant Climate Class	Minimum Stand Level Retention Targets (%)	2009 (%)
Enhanced	Dry	15	18.1
	Wet	10	15.9
General	Dry	20	35.7
	Wet	15	21.0
Special	Dry	20	n/a
	Wet	20	28.7

Note that there was no 2009 harvesting recorded within the Special / Dry - RMZ / Climatic Variant.

**Definitions:**

Resource Management Zones of the Vancouver Island Land Use Plan

Variant Climate Class:       Dry - CWHxm, mm1  
                                      Wet - CWHmm2, vm1, vm2, MH

Silvicultural System:

*Retention system* means a silvicultural system that retains individual trees or groups of trees to:

- maintain structural diversity over the area of the cutblock for at least one rotation
- leave more than half the total area of the cutblock within one tree height from the base of a tree or group of trees, whether or not the tree or group of trees is inside the cutblock.

Retention can be dispersed throughout a cutblock as single trees or aggregated groups of trees.

**Indicator 8: Percent of annual harvest area within forest influence**

Areas within forest influence experience different growing conditions, including reduced light and wind, and hence provide different microclimate and habitat types.

**Value: To maintain forest influence.**

**Objective:** Forest influence is maintained throughout areas harvested with the retention system.

<b>Indicator 8:</b>	The average annual % of the harvested area that is within forest influence (one tree length of standing trees).
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**Target:** Greater than 50%.

**Variance:** Any value greater than 50% is acceptable.

**Forecast:** To remain above 50% forest influence in order to meet the requirements of retention harvesting.

**Legal or Other Requirements:** Corporate objective in Western Forest Strategy.

**Data:**

Forest influence is defined as the area within an opening that is within one tree length of a patch of retention or within one tree length of a single tree retained within or immediately adjacent to the opening. By definition, at least half of the area harvested in non-clearcut openings must be within forest influence

The current approach is to map the areas of forest influence by timber heights on opening maps and then to calculate the proportion of forest influence over the harvest area.

Inventory: Forest influence objectives are written into the site plan by the prescribing Forester during opening planning. The actual level of forest influence is then verified during the Post-Harvest Assessment by forestry personnel and entered into the Cenfor database.

Reporting: The Operations Forester compiles the data from the Cenfor database and reports on the indicator performance in the annual SFM Report.

**Note:**

2005 data going forward reflect the current WFP MIFO Defined Forest Area. Data prior to 2005 include the Eve River (20% takeback area to BCTS) and private lands.

**Performance:**

Year	Total non-clearcut harvest area (ha)	Forest influence (%)	Objective (%)
2000	951.7	72.5	> 50
2001	1,219.9	74.0	> 50
2002	718.2	74.0	> 50
2003	1,604.0	66.0	> 50
2004	2,290.8	62.0	> 50



2005	3,326.2	62.0	> 50
2006	2,845.3	57.7	> 50
2007	1,935.1	55.8	>50
2008	654.0	59.8	>50
2009	943.7	62.7	>50

**Indicator 9: Number of identified species at risk**

Sustaining viable populations of extant species is a key requirement of sustainability.

**Value: The risk status of forest-associated species on the DFA.**

**Objective:** Forest Management practices do not pose a threat to the DFA forest-associated species.

<b>Indicator 9:</b>	The annual listing of species at risk found on the DFA and their risk status rating.
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**Target:** The annual listing of species at risk found on the DFA does not increase and their risk status rating does not rise year over year as a result of management activities on the DFA.

**Variance:** None.

**Forecast:** The Minister responsible for the Wildlife Act identifies categories of species at risk and gives notice of species and requirements. The Conservation Data Center determines the SAR listings.

**Legal Requirements:** FRPA s.149, FPPR s.7 and WLPPR s.9.

**Data:** The provincial Conservation Data Centre (<http://srmwww.gov.bc.ca/cdc>) is responsible for identifying red and blue listed species extant within specific ecosections of each Forest District. Procedures and measures for protecting red listed species, in particular, are set out in the Accounts and Measures for Managing Identified Wildlife V.2004.

**Reporting:** The Operations Forester reports on indicator performance in the annual SFM Report following a review by a R.P. Biologist.

**Note:** 2005 data going forward reflect the current WFP MIFO Defined Forest Area. Data prior to 2005 include the Eve River (20% takeback area to BCTS) and private lands.

**Performance:**

Year	Latest CDC list reviewed	Date reviewed	Annual CDC Species List		MOE requests
			Total Number of Species	Listing linked to DFA management	
1999	Aug 17, 1999	June 4, 2000	0	N/A	No
2000	June 2000	Feb. 28, 2001	2	No	No
2001	April 2001	Feb. 2002	6	No	No
2002	R.T. McLaughlin, R.P. Bio.	Nov. 25, 2002	6	N/A	No
2003	R.T. McLaughlin, R.P. Bio.	Dec. 16, 2003	15	No	No

2004	R.T. McLaughlin, R.P. Bio.	Mar. 15, 2005	15	N/A	No
2005	R.T. McLaughlin, R.P. Bio.	Mar. 17, 2006	18	N/A	No
2006	R.T. McLaughlin, R.P. Bio.	Mar. 26, 2007	18	N/A	No
2007	R.T. McLaughlin, R.P. Bio.	Feb. 11, 2008	18	N/A	No
2008	J. Deal, R.P.Bio.	Dec. 31, 2008	18	N/A	No
2009	J. Deal, R.P.Bio	Mar. 17, 2009	21	N/A	No

## Indicator 10: Total number of trees at 'free growing' compared to planted total

This indicator provides a broad measure of the genetic diversity of the regenerating forest by estimating contributions from both planted seedlings and natural regeneration.

**Value:** The genetic diversity of free-growing stands.

**Objective:** Free-growing stands contain a large proportion of naturally regenerated trees.

<b>Indicator 10:</b>	The annual average percent of the total number of trees at free-growing that are from natural seeding.
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**Target:** 50% of total trees are from natural regeneration.

**Variance:** Any actual value above >50%.

**Forecast:** > 50%. The number of crop and competing trees is modeled based on growth and yield data. This information is a key part of the TSA.

**Legal Requirements:** None

### Data:

A free growing stand is defined in the Forest and Range Practices Act as "a stand of healthy trees of commercially valuable species, the growth of which is not impeded by competition from plants, shrubs or other trees." A crop tree is defined as a species ecologically suited to the site, free from damage or disease, at least the minimum required spacing from another crop tree and judged capable of surviving to free growing. A competing tree is defined as a coniferous or deciduous tree that will continue to compete with crop trees until the standard unit is free growing.

The free-growing assessment (to determine whether free-growing status has been achieved) includes a tally of total trees per hectare. This total includes both planted and naturally regenerated trees and is compared to the number of trees planted per hectare (obtained from stand records). The total number of trees is determined by multiplying trees per ha by the number of ha for each opening that has achieved free growing and summing these products.

**Inventory:** The Silviculture Forester carries out free growing surveys as per the SOP. Data collected during the assessment is entered into the CenFor database.

**Reporting:** The Operations Forester compiles the data from the CenFor database and reports on the indicator performance in the annual SFM Report.

### Note:

2005 data going forward reflect the current WFP MIFO Defined Forest Area. Data prior to 1995 include the Eve River (20% takeback area to BCTS) and private lands.

**Performance:**

Year	FG Openings or Standard Units Due (late)	Stems per hectare		Percent Difference
		Planted	At free growing	
2000	13	306	15,697	+ 5,130 %
2001	27	971	3,780	+ 389 %
2002	50	472	3,565	+ 755 %
2003	62	626	3,761	+ 601 %
2004	66 (SUs)	700	4,144	+ 592 %
2005	72 (SUs)	613	3,729	+ 608 %
2006	62 (SUs)	805	4,576	+568%
2007	62 (SUs)	1078	3,967	+368%
2008	76 (SUs)	855	3777	+442%
2009	67 (SUs)	1163	4107	+353%

## Indicator 11: Percent of identified High Conservation Value (HCV) areas under special management

This indicator identifies areas of special value and describes the management for protecting these values.

### Value: The Identified High Conservation Value (HCV) areas of the DFA.

**Objective:** Identified High Conservation Value areas of the DFA are appropriately managed.

<b>Indicator 11:</b>	The percent of identified HCV areas of the DFA that are under special management.
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**Target:** 100%.

**Variance:** None.

**Forecast:** The Sgt Randally trail will be deactivated in 2009 because of the effect of significant windthrow. A replacement recreation trail will be established to access the Admiral Broeren tree.

**Legal Requirements:** Special Management zones are defined as part of VILUP. SMZ 11 – Schoen-Strathcona.

### Data:

HCV areas include areas in which conservation of any of numerous social or ecological values is deemed to have an especially high priority. Identification of HCV areas may result from information supplied by First Nations, government agencies, company personnel or other stakeholders.

**Inventory:** A list of HCV areas is maintained by the Operations Forester. Any special management practices required for these areas will be noted or referenced. During cutblock development processes this list will be reviewed to ensure forest management activities will not infringe upon or impact the value to be conserved.

**Reporting:** The Operations Forester will annually review the compliance with each special management plan and report on the indicator performance in the annual SFM Report.

HCV areas include:

- Special Management Zone 11 – Schoen – Strathcona.
- Admiral Broeren Recreation Site and Trail

### Note:

2005 data going forward reflect the current WFP MIFO Defined Forest Area. Data prior to 2005 include the Eve River (20% takeback area to BCTS) and private lands.

**Performance:**

Year	HCV areas		
	Number of HCV areas	Number under special management	Percent under special management
2000	5	5	100
2001	6	6	100
2002	6	6	100
2003	6	6	100
2004	6	6	100
2005	2	2	100
2006	2	2	100
2007	2	2	100
2008	2	2	100
2009	2	2	100

## Indicator 12: Regeneration delay performance

Prompt reforestation is required on all harvested land. This indicator examines the promptness of reforestation, as described below. It indicates utilization of the productive forest area of the DFA.

### Value: The timeliness of regeneration on the DFA.

**Objective:** Harvested areas are reforested.

<b>Indicator 12:</b>	Reforestation performance on harvested areas is better than the legal requirement.
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**Target:** Current year average regeneration delay target performance is 90% of the legal regen delay period.

**Variance:** None unless biological or environmental rationales provided on a site-specific basis.

**Forecast:** Anticipate greater utilization of natural regeneration where appropriate in future.

**Legal Requirements:** WFP FSP, FRPA s.29 and FPPR s. 16, 26 and 44.

### Data:

The objective is expressed as the weighted average of actual regen delay performance to target over the calendar year.

Inventory: The Silviculture Forester tracks not satisfactorily restocked areas by regeneration expiry dates in the CenFor database.

Reporting: The Silviculture Forester compiles the data from the CenFor database and reports on the indicator performance in the annual SFM Report.

### Performance:

Year	Hectares	Average Regen Delay			Ha of Missed Regen Delay
		Legal Requirement (years)	Target (years) (90% of Requirement)	Achieved (years)	
2008	2,800	5.12	4.6	2.15	1.0
2008*	1,115.4	4.9	4.4	2.0	1.0
2009	1,255.1	4.6	4.1	1.9	0

\* revised numbers for 2008 as originals included areas outside of the DFA.



### Indicator 13: Area of regeneration failures

This indicator measures the area of regeneration failure as a percentage of areas established (both by planting and naturally) each year. It is an indication of regeneration success and of utilization of the DFA's productive area.

**Value:** The successful establishment of regeneration.

**Objective:** Harvest areas are successfully regenerated.

<b>Indicator 13:</b>	The annual percent of current regeneration established that fails.
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**Target:** Current regeneration failure is less than 5% of the current area established.

**Variance:** 5%.

**Forecast:** Assumed to be zero in the planting forecast prepared by the forest operation and the Management Plan forecast. Can vary widely based upon biological or environmental events.

**Legal Requirements:** Value and Objective are supported by legislation (FRPA s.29 and FPPR ss.16, 24, 44). Target is not supported.

**Data:**

Regeneration failures may also result in changes in the inventory update, a change in a polygon description from stocked to NSR.

Inventory: The area reforested and the area that fails a survival or regeneration performance assessment is tracked in the CenFor database.

**Note:**

2005 data going forward reflect the current WFP MIFO Defined Forest Area. Data prior to 2005 include the Eve River (20% takeback area to BCTS) and private lands.

**Performance:**

Year	Area established - ha (planted and natural)	Area of regen failures (ha)	Failed area as percent of established area	Comment
1980	1,691	208	11.0	
1981	2,617	204	7.8	
1982	2,061	0	0	
1983	1,352	152	11.2	
1984	1,301	416	32.0	
1985	1,257	96	7.6	
1986	1,462	140	9.6	
1987	2,278	61	2.7	
1988	2,278	134	5.9	
1989	2,188	68	3.1	
1990	1,704	28	1.6	
1991	2,105	287	13.6	
1992	2,544	96	3.8	
1993	1,687	51	3.0	
1994	2,345	56	2.4	
1995	1,852	221	11.9	
1996	1,875	94	5.0	
1997	1,554	93	6.0	

1998	1,448	18	1.2	
1999	1,195	130	10.9	
2000	1,500	133	8.9	
2001	1,639	48	2.9	
2002	1,640	214	13.0	
2003	1,525	44	2.9	
2004	2,172	136	6.3	Browse/Brush/Drought
2005	1,639	210	12.9	51% stock failure 49% browse
2006	1,704	46	2.7	Browsing
2007	1,528	42	2.8	Elk browsing
2008	723	15	2.1	73% Elk browse 27% Brush
2009	418.7	283.7	68%	4% Brush 15% Root disease 81% Ungulate browse

## Indicator 14: Number of fires and area burned

This indicator provides a measure of success at protecting the forest from damage by fire caused by operational and natural wildfires. Operationally caused fires are those that are initiated by management activities (e.g. operational or escaped slash fires). Natural wildfires are those that are initiated by lightning strikes.

### Value: Area impacted by forest fires.

**Objective:** Area impacted by forest fires is minimized.

<b>Indicator 14:</b>	Annual number of fires and area burned.
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**Target:** Track number and sizes of accidental operational fires and natural wildfires. The annual area impacted by operationally caused fire is 0.

**Variance:** One hectare.

**Forecast:** The indicator cannot be forecast.

**Legal Requirements:** 2009 MIFO Fire Pre-organization Plan.

**History:** The wildfire and operational fire indicators were developed in 1999 and 2000 respectively and merged into one indicator for 2006.

**Objective:** Area impacted by forest fires is minimized. Zero hectares affected by operationally caused fires.

**Acceptable Variance:** One hectare per year. This variance is based on the historical data average.

**Forecast:** The objective is the forecast. This is assumed to be zero in the Management Plan forecasts. A small allowance for non-recovered timber from fire has been included in recent timber supply analyses.

### Data:

The Operations Forester reports annually on the incidence and cause of fires and on the area burned. This includes fires resulting from operational activities. A historical record is available for TFL 39 areas. Data for 1997 to 2004 includes information regarding MF 19 areas. Fires are reported for entry into the Issue Tracking System (ITS).

**Reporting:** The Operations Forester compiles the data from ITS and reports on the indicator performance in the annual SFM.

### Note:

2005 data going forward reflect the current WFP MIFO Defined Forest Area. Data prior to 2005 include the Eve River (20% takeback area to BCTS) and private lands.

**Performance:**

Year	Accidental Operational Fires		Natural Wildfires	
	Number	Total area burned (ha)	Number	Total area burned (ha)
1983	1		0	
1984	2		1	Spot
1985	2		2	Spot
1986	1		0	
1987	4		0	
1988	3		0	
1989	0		2	Spot
1990	1		7	2.0
1991	1		0	
1992	1		1	Spot
1993	3		0	
1994	7		6	1.0
1995	8		1	Spot
1996	1		0	
1997	2		0	
1998	1	2	0	
1999	1	22	0	
2000	1	0.01	2	0.02
2001	2 1	0.02 0.01 public	0	
2002	1	0.1	7	0.2
2003	0		1	<0.01
2004	0		2	<0.2
2005	0		0	
2006	0		0	
2007	0		0	
2008	0		0	
2009	0		9	16.6
Totals	44	24.13	41	20.03
Avg	1.63	0.89	1.52	0.74

## Indicator 15: Number of reportable spills

This indicator provides a measure of pollution from oil spills.

### Value: The incidence of reportable spills.

**Objective:** To minimize the impacts to land and water from reportable spills.

<b>Indicator 15:</b>	The annual number of reportable spills.
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**Target:** The annual number of reportable spills is less than or equal to the 5-year rolling average. The indicator target was revised downwards in 2008.

**Variance:** + 1 over the target after target fractions are rounded up to the next whole number.

**Forecast:** This indicator cannot be forecast

**Legal Requirements:** WFP Spill Contingency Plan supports the Objective. Spill Reporting Regulation 263/90.

### Data:

The operation is legally required to immediately report to the Provincial Emergency Program (PEP) and the Department of Fisheries and Oceans (DFO) any hydrocarbon spill into water or onto land that may potentially enter a watercourse. Regarding spills with potential to enter water on Crown land, the Ministry of Forests and Range must also be notified. Other spills in excess of 100 liters to land are reportable to PEP. The WFP Spill Contingency Plan requires that all spills be reported to the operation Spill Coordinator, who in turn reports the spill to PEP.

**Inventory:** The Engineering Administrative Technician maintains a record of all spills in the file system.

**Reporting:** The Operations Forester compiles the data and reports on the indicator performance in the annual SFM Report.

### Note:

2005 data going forward reflect the current WFP MIFO Defined Forest Area. Data prior to 2005 include the Ève River (20% takeback area to BCTS) and private lands.

### Performance:

Year	Number of Reportable Spills			
	Target	Actual	Volume (litres)	#/vol to water
1995	N/A	8		
1996	N/A	10		
1997	N/A	8		
1998	N/A	9		
1999	N/A	6	940.0	

2000	less than or equal to 7	6	1,181.5 *	
2001	less than or equal to 7	10	1,233.0	
2002	less than or equal to 7	2	2,232	
2003	less than or equal to 7	3	1,208	
2004	less than or equal to 7	4	300	2 / 21 litres
2005	less than or equal to 7	4	700	1 / 20 litres
2006	less than or equal to 7	1	100	
2007	less than or equal to 7	0	0	0
2008	less than or equal to 3	2	280	0
2009	less than or equal to 3	3	130	0
5-year rounded average		3	242	

\* Note – 600 litres attributable to one contract operation spill.

**Indicator 16: Number of areas greater than 5 contiguous hectares in size that are at a risk of mortality due to insects or disease**

This indicator measures the success of management strategies to limit the size (impact) of insect infestations and disease epidemics.

**Value: The extent of insect attack or disease in the DFA.**

**Objective:** To minimize timber loss to insect and diseases.

<b>Indicator 16:</b>	The number of areas greater than 5 ha (contiguous) in size that are at a high risk of mortality due to insects or disease.
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**Target:** Zero.

**Variance:** None.

**Forecast:** This indicator can not be forecast. The 5ha size limit may be too small an area to effectively detect in the field. Review indicator target in 2009.

**Legal or Other Requirements:** Value and Objective are supported by MP #8 s.6.3.2.

**Data:**

Forests are assessed continuously, both on the ground and from the air, to identify potential insect infestations or disease epidemics. Suspect areas are further examined by helicopter or ground survey. Federal, provincial or independent experts are consulted on the need for preventative measures. Salvage occurs if there is significant mortality.

Inventory: Annually the Operations Forester, or designate, will carryout a Forest Health Overview assessment and report on forest health concerns. The Operations Forester, or designate, will implement a strategy to manage the risk. The report is filed in the Forestry File system.

Reporting: The Operations Forester compiles the data and reports on the indicator performance in the annual SFM Report.

**Note:**

Note that all data reported prior to 2006 is based upon the number of areas in excess of 500 hectares.

**Performance:**

More detailed surveys will be conducted in 2008 to better define the 2007 infestation.

Year	Forest threatened by insects or disease		Insects and disease observed in DFA during Forest Health Overview Assessment
	Number of areas greater than 5 contiguous hectares	Total area	
2000	0	0	Balsam wooly adelgid Sawfly
2001	0	0	Balsam wooly adelgid Sawfly (not aerial)
2002	0	0	Overall no new disease or insect

			outbreaks were detected.
2003	0	0	Overall no new disease or insect outbreaks were detected.
2004	0	0	Overall no new disease or insect outbreaks were detected.
2005	0	0	Overall no new disease or insect outbreaks were detected.
2006	0	0	Increasing BWA activity noted in some areas of the TFL. Will be quantified in 2007.
2007	2	10ha	BWA activity noted in vicinity of Long Lake Mainline
2008	3	20ha	Approx 20ha noted in Leah/Memekay, Thunder 200 and WR305/C121
2009	0	0	

Note: In 2009, a specific forest health flight did not happen. Monitoring was done during other flights and on the ground activities.



## **Indicator 17: Area of naturally induced slides and percent of total slides from harvested areas or roads**

This indicator provides a baseline measure of disturbance from naturally-induced slides as well as a measure of soil disturbance by slides caused by harvest activity. Soil disturbance may reduce the productive area and increases the risk of environmental impact, particularly sedimentation of streams.

### **Value: The extent of landslides in the DFA.**

**Objective:** To minimize the impact of harvest operations on the stability of terrain.

<b>Indicator 17:</b>	Track the area of natural slides and minimize the area of harvest-related slides from post – 1995 activities.
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**Target:** The annual hectares of slides from post – 1995 harvest areas and roads is 0 ha.

**Variance:** Less than 5 ha for harvest related slides. Not applicable for natural slides.

**Forecast:** This indicator can not be forecast.

**Legal or Other Requirements:** Objective is supported by the WFP Terrain Management Code of Practice.

### **Data:**

New slides are documented through the frequent forest assessments that occur both on the ground and from the air. Slides are classified as to whether they originated from harvest activity in areas harvested since the inception of the Forest Practices Code in June of 1995.

Naturally-induced slides are slides that are not initiated by roads or other harvest activities and occur in areas of forest that are greater than 15 years of age.

Inventory: Slides are reported to the Operations Engineer. Slides larger than two hectares are entered into the forest cover GIS.

Reporting: The Operations Forester compiles the data from the file system and Incident Tracking System (ITS) and reports on the indicator performance in the annual SFM Report.

### **Note:**

2005 data going forward reflect the current WFP MIFO Defined Forest Area. Data prior to 2005 include the Eve River (20% takeback area to BCTS) and private lands.

**Performance:**

Year	Total Slide Area* (Ha)	Natural Slide Area (Ha)	Slides from post-1995 harvest areas or roads		
			Number	Hectares	% of Total
2001	2.9	2.1	1	0.8	28
2002	1.9	0	5	1.9	100
2003	5.2	0	11	5.2	100
2004	4.7	2.5	8	2.2	47
2005	7.1	7.1	1	0.02	0
2006	7.1	6.4	3	0.7	10
2007	3.7	2.4	5	1.3	35
2008	4.7	4.4	2	0.3	6
2009	0.01	0	1	0.01	100

\* Total Slide Area does not include slides originating from pre-code blocks.

## Indicator 18: Percent of openings in which soil disturbance exceeds plan

This indicator measures the amount of soil disturbance that exceeds planned levels. Higher disturbance levels both reduce the productive area and increase the risk of environmental impact, particularly sedimentation of streams.

### Value: The productivity of the forest soils.

**Objective:** To minimize soils degradation resulting from management activities.

<b>Indicator 18:</b>	The annual percent of harvested openings in which soil disturbance exceeds plan.
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**Target:** Zero.

**Variance:** None.

**Forecast:** This indicator cannot be forecast.

**Legal Requirements:** Objective supported by FRPA s.46 Protection of Environment. FPPR s.5 Objectives Set by Government – Soils.

### Data:

Maximum allowable soil disturbance levels (soil disturbed within the net area to be reforested) are specified in the site plan for each opening. During the post harvest assessment a determination is made as to whether soil disturbance exceeds the level specified on the plan. This indicator reports the proportion of openings in which the actual soil disturbance exceeds that specified in the site plan. In 2008, the indicator was amended to include percentage of area exceeding plan.

**Inventory:** Soil disturbance limits are written into the site plan by the prescribing Forester during opening planning. The actual level of soil disturbance is then verified during the Post Harvest Assessment by forestry personnel and entered into the CenFor database.

**Reporting:** The Operations Forester compiles the data from the CenFor database and reports on the indicator performance in the annual SFM Report.

### Note:

2005 data going forward reflect the current WFP MIFO Defined Forest Area. Data prior to 2005 include the Ève River (20% takeback area to BCTS) and private lands.

2008 data based on a small number of post harvest assessments completed.

Performance:

Year	Blocks reported on					
	Total		Soil disturbance exceeding plan			
	Blocks	Hectares	# of Blocks	% of Blocks	Area (ha)	% of Total Hectares
2000	72	1998.4	0	0		
2001	80	2177.0	0	0		
2002	64	2068.8	7	11	na	na
2003	82	2209.0	0	0		
2004	73	2648.3	0	0		
2005	54	2270.3	1	1.9	na	na
2006	85	2864.3	0	0		
2007	34	974.1	0	0		
2008	2	60.1	0	0	0	0
2009	38	805.2	0	0	-	-

**Indicator 20: Area that does not meet 'free growing' targets**

This indicator measures the success at achieving free growing targets defined in Silviculture Prescriptions and Site Plans. It provides indications of regeneration success, of utilization of the productive area and of maintaining forest ecosystems on the DFA.

**Value:** The free-growing status of regenerated stands in the DFA.

**Objective:** Regenerated stands meet their free-growing objectives.

<b>Indicator 20:</b>	The annual number of hectares not meeting their free-growing targets.
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**Target:** Zero hectares not meeting free-growing due date.

**Variance:** Less than the rolling 10 year average percentage

**Forecast:** This indicator cannot be forecast.

**Legal Requirements:** FRPA s.29, FPPR ss.16, 44(1)(b).

**Data:** Inventory: The CenFor database lists free growing commitments by standard unit within an opening.

Reporting: The Operations Forester tracks and reports compliance with FG obligations in the annual SFM Report.

**Note:** 2005 data going forward reflect the revised WFP MIFO Defined Forest Area and does not include Eve River (20% takeback area to BCTS) or Island Timberlands private lands.

**Performance:**

2008 hectares reflect 10 SUs in 10 cutblocks that require 2 more years of growth to meet tree height requirements. Site Plans have been amended to extend LFG.

Free Growing Status				
Year	Openings/SUs	Hectares not meeting target	Total hectares due	% Not meeting target
1998	0	0	0	0.0%
1999	2	17.6	236.8	7.4%
2000	5	59	281.5	20.9%
2001	12	62	735.2	8.4%
2002	13	51.2	1,815.00	2.8%
2003	1	46.2	2,054.00	2.0%
2004	2 (SUs)	16	1,123.00	1.4%
2005	0	0	1,404.90	0.0%
2006	0	0	1,305.90	0.0%
2007	3 (SUs)	38.3	1,526.20	2.5%
2008	10	89.8	934	9.6%

2009	0	0	731.9	-
Rolling 10 yr total		362.50	11911.60	
Rolling 10 yr avg		36.25	1191.2	3.0%

## Indicator 21: Percent of opening area occupied by permanent access structures

This indicator measures the proportion of harvest areas that is removed from the productive forest area because of permanent access structures (roads, landings, etc.). It indicates the reduction in the potential productive area and the increased risk or potential for environmental impact, particularly sedimentation of streams.

**Value:** The conversion of forest lands to permanent access structures.

**Objective:** To minimize conversion of forest land into permanent access structures.

<b>Indicator 21:</b>	The annual average percent of harvested openings that is occupied by permanent access structures.
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**Target:** The annual average percent of harvest openings that is occupied by permanent access structures is less than 5%.

**Variance:** 0.5 % (i.e. less than 5.5% of the area in openings).

**Forecast:** This indicator cannot be forecast.

**Legal Requirements:** Indicator target exceeds the performance target under FPPR s.36.

### Data:

Inventory: The CenFor database produces a site degradation report for blocks where logging has been completed.

Reporting: The Operations Forester tracks and reports on the indicator performance in the annual SFM Report.

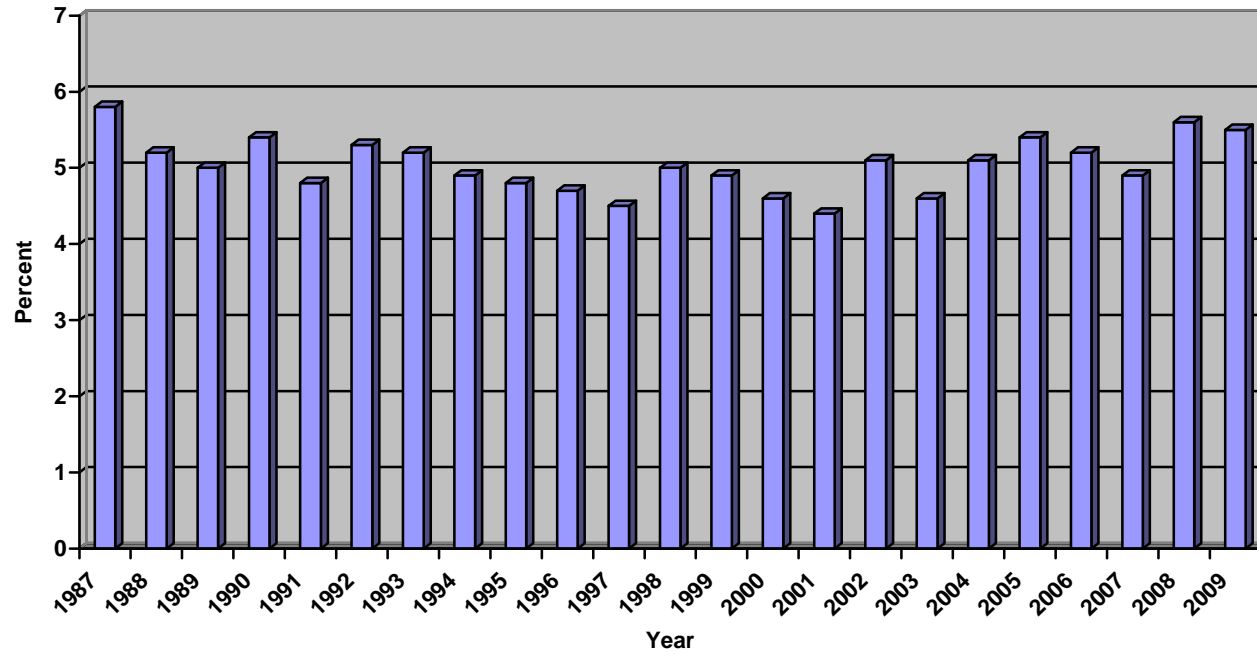
### Note:

2005 data going forward reflect the current WFP MIFO Defined Forest Area. Data prior to 2005 include the Eve River (20% takeback area to BCTS) and private lands.

### Performance:

5.5% for 2009.

Percent of opening areas in permanent access structures





## Indicator 22: Annual harvest level

This indicator compares actual timber harvest with harvest targets. It provides an indication of sustainability and of contribution to the local and provincial economies. The area harvested also impacts the availability of other commercial and non-commercial forest products.

### Value: The rate of timber harvest.

**Objective:** Timber harvest is within the long term productive capacity of the resource base.

<b>Indicator 22:</b>	The annual harvest level.
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**Target:** The annual harvest is within 50% of the AAC on an annual basis within the 5 year cut control period for the TFL.

**Variance:** Not applicable.

**Forecast:** The Timber Supply Analysis for the TFL forecasts the harvest level. The harvest level will be reduced in future due to volume adjustments from takeback areas and the tie up of significant volumes in OGMAs. TSA analysis expected in 2009.

**Legal Requirements:** Forest Act s.8.

**Data:** The TFL AAC is determined every five years by the BC Chief Forester. Inventory: Over 20 years of historic data for the DFA is maintained by the Solid Wood Inventory Section, located in the MoF Harvest database.

Reporting: Harvest volumes are reported annually in "Official MoF Scale Report". The TFL 39, Block 2 harvest is also reported in the TFL 39 Annual Report. Volumes reported below include logging residue.

**Note:** 2005 data going forward reflect the current WFP MIFO Defined Forest Area. Data prior to 1995 include the Eve River (20% takeback area to BCTS) and private lands.

### Performance:

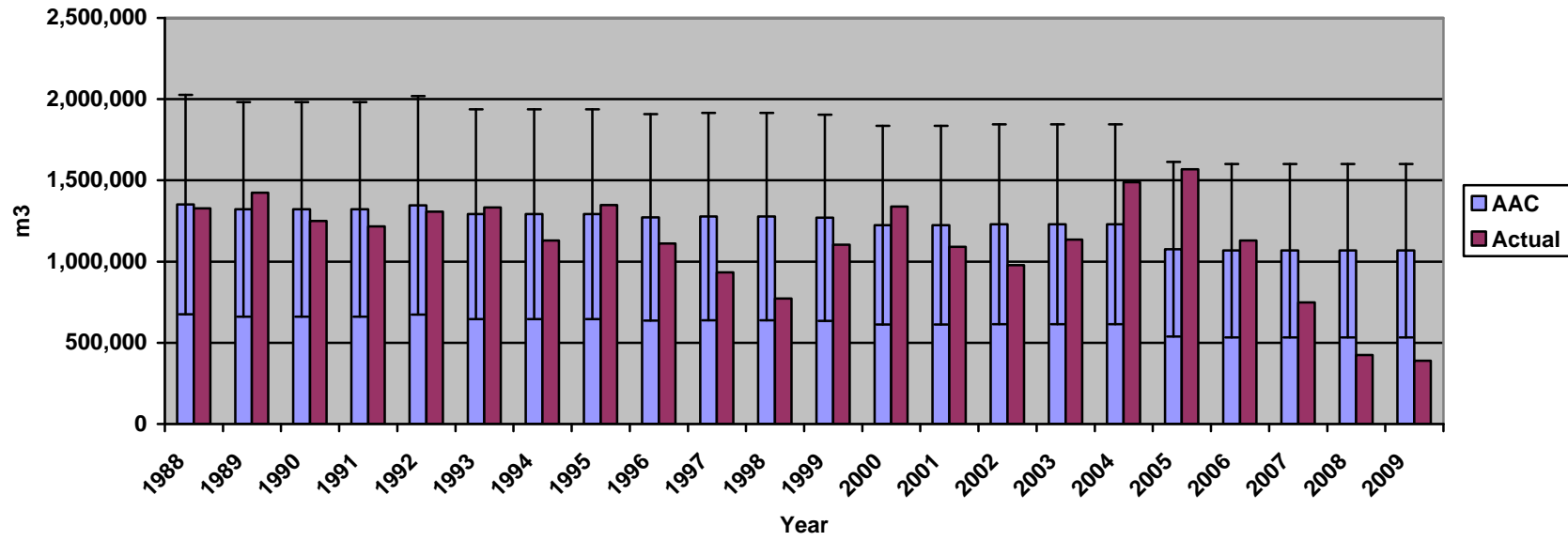
The cut performance for 2008 amounted to 40% of the AAC due to shutdowns from depressed markets. The error bars on the graph following represent the  $\pm 50\%$  acceptable variance.

Year	MF 19			TFL 39 Block 2			Total (includes residue)		
	Forecast	Actual	%	AAC	Cut	%	Plan	Cut	%
1996	115,000	110,000	95	1,271,900	1,110,190	87	1,386,900	1,220,190	88
1997	114,000	158,856	139	1,276,346	932,125	73	1,390,346	1,090,981	78
1998	200,000	218,220	109	1,276,346	770,941	60	1,476,346	989,161	67
1999	200,000	238,671	119	1,269,162	1,102,437	87	1,469,162	1,341,108	91
2000	153,200	181,601	118	1,223,902	1,337,240	109	1,377,102	1,518,841	110
2001	200,000	214,752	107	1,223,902	1,089,045	89	1,423,902	1,303,797	92
2002	200,000	212,235	107	1,229,411	977,354	79	1,429,411	1,189,589	83
2003	196,168	216,948	110	1,229,411	1,133,882	92	1,425,579	1,350,810	95
2004	318,544	306,756	96	1,229,411	1,487,346	121	1,547,955	1,794,102	116
2005				1,075,809	1,567,965	146			
2006				1,066,962	1,128,419	106			
2007				1,066,962	748,030	70			
2008				1,066,962	423,399	40			
2009				1,066,962	388,667*	36			

\* - Preliminary estimate of billed volume for 2009 (WFP only)

Cut control is regulated at the TFL level and not the block level. The five year cut periods (1996-2000 and 2001-2005) for Block 2 resulted in 83% and 104%, respectively of the AAC being cut (including residue).

### TFL 39, Block 2



## Indicator 23: Road Status in the DFA

This indicator estimates the length of roads in the DFA, including both maintained and non-maintained roads. Retaining a “balance” of roads is important for access for forest management, recreation and other resource uses while maintaining as much land in productive use as possible. Roads are added as new areas are developed and removed in some cases through debuilding. Other roads that are not required for a period are deactivated to minimize the risk of environmental damage.

### Value: The level of road access in the DFA.

**Objective:** To retain an accessible road network throughout the DFA.

<b>Indicator 23:</b>	The total km of maintained roads within the DFA.
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**Target:** The total km of maintained roads within the DFA does not decrease from year to year.

**Variance:** +/- 20% of 2005 baseline.

**Forecast:** The road network is mature and reasonably stable over the long term.

**Legal Requirements:** None.

### Data:

**Inventory:** Data on the road network (maintained and non-maintained roads) is kept at a 1:20,000 scale at MIFO in the Geographic Information System (GIS). The non-maintained roads category includes debuilt and deactivated roads. Partially deactivated roads may still be accessible in part to 4-WD vehicles.

**Reporting:** The GIS Analyst compiles the data from the CenFor database and reports on the indicator performance in the annual SFM Report.

### Performance:

Year	Kilometers			Comment
	Maintained	Non-maintained	Total	
2005	1,879	1,887	3,766	50% maintained
2006	1,562	1,527	3,089	50% maintained
2007	1,701	1,576	3,277	52% maintained
2008	1,719	1,574	3,293	52% maintained
2009	1,722	1,575	3,297	increase of 3 km

## Indicator 24: Number of recreation sites provided and maintained

This indicator tracks the number of recreation sites (trails, campgrounds) provided and maintained. The indicator provides a measure of the continued commitment to supporting some of the non-timber values on the DFA. The responsibility to present a recreation site for public use includes the requirement for maintenance and safety of the facilities.

### Value: Recreation opportunities within the DFA.

**Objective:** Recreation opportunities are provided throughout the DFA.

<b>Indicator 24:</b>	The number of recreation sites provided and maintained.
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**Target:** The number of recreation sites does not decrease from year to year.

**Variance:** Not applicable.

**Forecast:** During 2009, establishment of a small parking lot, trail and float at Santa Maria (A20) Lake; road and trail access improvements to a limestone cave above Tlowils Lake; and establishment of a small parking lot, outhouse and trail to the Admiral Broeren big Yellow Cypress tree are proposed. Sgt Randally recreation site will not be maintained. (See below).

**Legal or Other Requirements:** MP #8, s.5.6.

### Data:

**Inventory:** The Operations Forester is responsible to track recreation sites on the DFA and to maintain safe access as required.

**Reporting:** The Operations Forester reports on the indicator performance in the annual SFM Report.

### Note:

2005 data going forward reflect the current WFP MIFO Defined Forest Area. Data prior to 2005 include the Eve River (20% takeback area to BCTS) and private lands.

### Performance:

In 2008, the Sgt Randally site was not open for public use because of a large windthrow event along the access trail. In 2009, the intention is to deactivate the Sgt Randally site and move to a new site called the Admiral Broeren, the site of another very large diameter Yellow Cypress.

Year	Sites	Sites Provided	Sites
1996	2	2	
1997	4	4	
1998	4	4	
1999	4	4	

2000	5	5	Montague Creek, Lower Tsitika Crossing, Junction Pool, Dalrymple Creek, Wowo Lake
2001	5	5	Montague Creek, Lower Tsitika Crossing, Junction Pool, Dalrymple Creek, Wowo Lake
2002	5	5	Montague Creek, Lower Tsitika Crossing, Junction Pool, Dalrymple Creek, Wowo Lake
2003	6	6	Montague Creek, Lower Tsitika Crossing, Junction Pool, Dalrymple Creek, Sgt. Randally, Wowo Lake
2004	6	6	Montague Creek, Lower Tsitika Crossing, Junction Pool, Dalrymple Creek, Sgt. Randally, Wowo Lake
2005	3	3	Sgt. Randally and rustic sites at Stewart and Tlowils Lake. Previous year's sites are part of BCTS and Island Timberlands.
2006	3	3	Sgt Randally and rustic sites at Stewart and Tlowils Lakes.
2007	3	2	Sgt Randally and rustic sites at Stewart and Tlowils Lakes. Sgt Randally site not maintained due to blowdown along access trail.
2008	3	2	Sgt Randally and rustic sites at Stewart and Tlowils Lakes. Sgt Randally site not maintained due to blowdown along access trail.
2009	3	2	Sgt Randally and rustic sites at Stewart and Tlowils Lakes. Sgt Randally site not maintained due to blowdown along access trail.

Note: Due to extensive work on DFA in 2009 this number is expected to increase in 2010.

## Indicator 25: Medical Incident and Severity Rates

This indicator measures the Medical Incident Rate for the MIFO and the Lost Time Severity Rate for WFP crews. Severity information for contract crews is unavailable.

### Value: The safety of workers on the DFA.

**Objective:** The DFA workers operate at a high safety level.

<b>Indicator 25:</b>	Medical Incident Rates (MIR) for company and contractor crews and Severity Rate (SR) for WFP crews.
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**Target:** For 2009 MIR targets of 1.5 for WFP crews and 5.0 for contractors. The SR target for WFP crews is 58.52.

**Variance:** Less than the targets.

**Forecast:** This indicator cannot be forecast. However, the long term corporate goal is to improve safety performance over time to have an MIR of zero.

**Legal or Other Requirements:** Corporate objective.

### Data:

The information is calculated according to standard forest industry statistical equations. Data is tracked and reported on a monthly basis by the Operations Administrator. The indicator was developed in 1999 and updated in 2007.

### Definitions:

A Lost Time (LT) case is counted for any case in which an employee loses one or more days beyond the day of injury due to an occupational injury or illness. The reporting of Lost Days is cumulative, meaning all counting starts the day after the injury and ends when the worker returns to work or at the completion of the file from WorksafeBC or until December 31<sup>st</sup> of the second year of counting.

Medical Treatment (MT) is any treatment administered by a registered medical practitioner, physician or their referral (e.g. to a physiotherapist) other than First Aid or Medical Aid. Medical Treatments are generally acknowledged as being beyond the scope of first aid.

A Restricted Work (RW) case is one in which an employee could not return to their regular duties and performed restricted duties on the advice of a doctor. The number of restricted workdays reported does not include the day of injury.

### Calculations:

Medical Incident Rate (MIR) 
$$\frac{(MT + RW + LT \text{ cases}) \times 200,000}{\text{Exposure Hours}}$$

Lost Time Severity Rate (SR) 
$$\frac{\text{Days Lost due to LT cases} \times 200,000}{\text{Exposure Hours}}$$

**Performance:**

Year	MIR WFP Crews		MIR Contract Crews		Combined		SR WFP Crews	
	Target	Actual	Target	Actual	Target	Actual	Target	Actual
2007	2.56	5.5	2.83	5.77	2.70	5.63	99	202
2008	1.8	2.2	4.04	6.3	3.28	4.1	183	86.5
2009	1.5	8.0	5.0	3.3		6.1	58.52	271.24



## Indicator 26: First Nations information sharing and referrals program

This indicator documents opportunities for First Nations to review the stand level information contained within Forest Stewardship Plans. These reviews are important for communication as they provide First Nations a continuing opportunity for input into the operational plans including the identification of potential impacts and / or conflicts with cultural heritage resources.

**Value:** Dialogue information sharing with First Nations.

**Objective:** An information sharing and referral program is maintained with First Nations with interests in the DFA.

<b>Indicator 26:</b>	The frequency of information sharing meetings and reviews held with First Nation representatives.
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**Target:** The frequency of information sharing meetings and FSP reviews held with First Nation representatives is at least once a year.

**Variance:** Not applicable.

**Forecast:** This indicator cannot be forecast.

**Legal Requirements:** Supports BC government's duty to consult.

### Data:

**Inventory:** The Area Forester documents Forest Stewardship Plan reviews that occur with First Nations. A summary of First Nations information sharing and reviews is maintained in the Cenfor Database.

**Reporting:** The Operations Forester reports on the indicator performance in the annual SFM Report.

### Note:

The indicator was developed in 2000 and revised in 2007 to reflect the change in regulation from the Forest Practices Code of BC Act (FPC) to the Forest and Range Practices Act (FRPA) and to capture the new operational plan referred to as the Forest Stewardship Plan.

### Performance:

Year	Review	
	Date	Comment
2000	November 3, 1999	Reviewed by Kwakwilt Laich-Kwil-Tach Nations Treaty Society.
2001	December 22, 2000	Reviewed by Kwakwilt Laich-Kwil-Tach Nations Treaty Society.
2002	July 3, 2002	Reviewed by Hamatla.
	July 5, 2002	Further discussion with Rodney Arnold regarding FDP.
2003	Feb. 14, 2003	Referral subcommittee met to work on cedar needs and FDP process.
	Mar. 10, 2003	Referral subcommittee met to work on cedar needs and FDP process.
	Nov. 14, 2003	Cedar access issue for FDP amended blocks.

	Nov. 28, 2003	First Nations Cedar strategy review.
2004	Aug. 19, 2004	Reviewed by Hamatla Treaty Society.
2005	Between Mar. 4 and Nov. 9, 2005	Three major amendments to the Forest Development Plan were submitted to First Nations for review and comment. No request for a meeting and consequently no meetings were held.
	Dec. 14, 2005	Met with Ken Smith, Tlowitsis.
2006	January 13 and June 16, 2006	Two major amendments to the Forest Development Plan were submitted to First Nations for review and comment. No request by first Nations for a meeting and consequently no meetings were held.
2007	various	60 separate communications based upon 7 FSP referral packages and 1 data access agreement.
2008	Throughout year	21 separate communications and 1 meeting based upon 5 FSP referral packages.
2009	Throughout year	22 separate communications and 1 meeting with TLOWITSIS Tribe as a result of 3 referral packages.

**Indicator 27: Aboriginal employment building**

This indicator tracks aboriginal employment activities that build towards employment in the forest sector. This indicator was developed in 2008.

**Value:** First Nations employment in the forest sector.

**Objective:** First Nations training and education leading to employment in the forest sector.

**Indicator 27:** Tracking of joint activity participation of First Nations and WFP.

**Target:** To meet or exceed the indicated levels of activity.

**Variance:** Not applicable.

**Forecast:** The indicator cannot be forecast.

**Legal or Other Requirements:** None.

**Data:**

Inventory: The Operations Forester will track the various employment building activities.

Reporting: The Operations Forester reports on the indicator performance in the annual SFM Report.

**Performance:**

Employment Building Activities	Year	Year
	2008	2009
<u>Aboriginal Career Fairs</u>		
# held	0	0
WFP participation	0	0
<u>Job Postings</u>		
# of postings	1	0
# to band offices	1	0
<u>Student Program</u>		
Sponsored students	0	0
Summer students	0	0
<u>Work Experience</u>		
Annual opportunity	0	0
# students participating	0	0
<u>Silviculture Crew</u>		
MIR	0.00	0.00
Persondays	285	408

## Indicator 28: Distribution of primary costs by percentage

The distribution of Mid Island's primary costs provides a measure of the operation's overall contribution to local, regional and provincial economies.

**Value:** Community receives a fair share of the economic benefits from the forest.

**Objective:** To have a relatively stable economic contribution to the economy.

<b>Indicator 28:</b>	The distribution of primary costs by percentage
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**Targets:** Track annual spending in the following areas: contract services, own crew labour, payments to government, purchases and miscellaneous in relation to annual harvest level.

**Variance:** Not applicable.

**Forecast:** This indicator cannot be forecast.

**Legal or Other Requirements:** Financial reporting is a corporate requirement.

### Data:

Information from the financial accounting system is collected monthly to report on the operation's primary costs to produce logs at tidewater.

**Inventory:** The Operations Analyst collects and tracks core financial information including contract services; labour (within company); government stumpage, taxes and fees; purchases and miscellaneous items.

**Reporting:** This core information is reported on during each financial month end and reported on in the Mid Island financial statement. The information as presented here is expressed as a percentage of Mid Island total primary costs.

### Guidelines for Compiling Indicator 28:

Contract Services covers payments to full phase (stump to dump) logging contractors, single phase contractors, forestry and engineering contractors, general service contractors such as janitorial, electrical, and carpenters, etc. as well as consultants and professional services. These costs include the supply of labour, equipment and materials costs required to execute the contract work and invoiced as one "job".

Own crew labour includes the gross payment of wages paid to both salary and hourly employees without deduction for statutory or contractual deductions. It includes all benefits costs paid by the employer for statutory and contractual benefits including WorkSafeBC Assessments. Payments made to cover employees under the Employee and Family Assistance Program (EFAP) and costs related to EFAP programs are not included.

Payments to Government include only direct payments for stumpage and royalty fees, logging waste residue payments, timber taxes and fees allocated by Head Office properties department (municipal and regional district property taxes, foreshore leases, etc), and amounts charged to licenses (e.g. radio licenses, highway crossing permits, etc.). Payments made to government do not include: Goods and Services Taxes, provincial sales taxes, provincial motor fuel taxes, federal excise taxes, payroll related

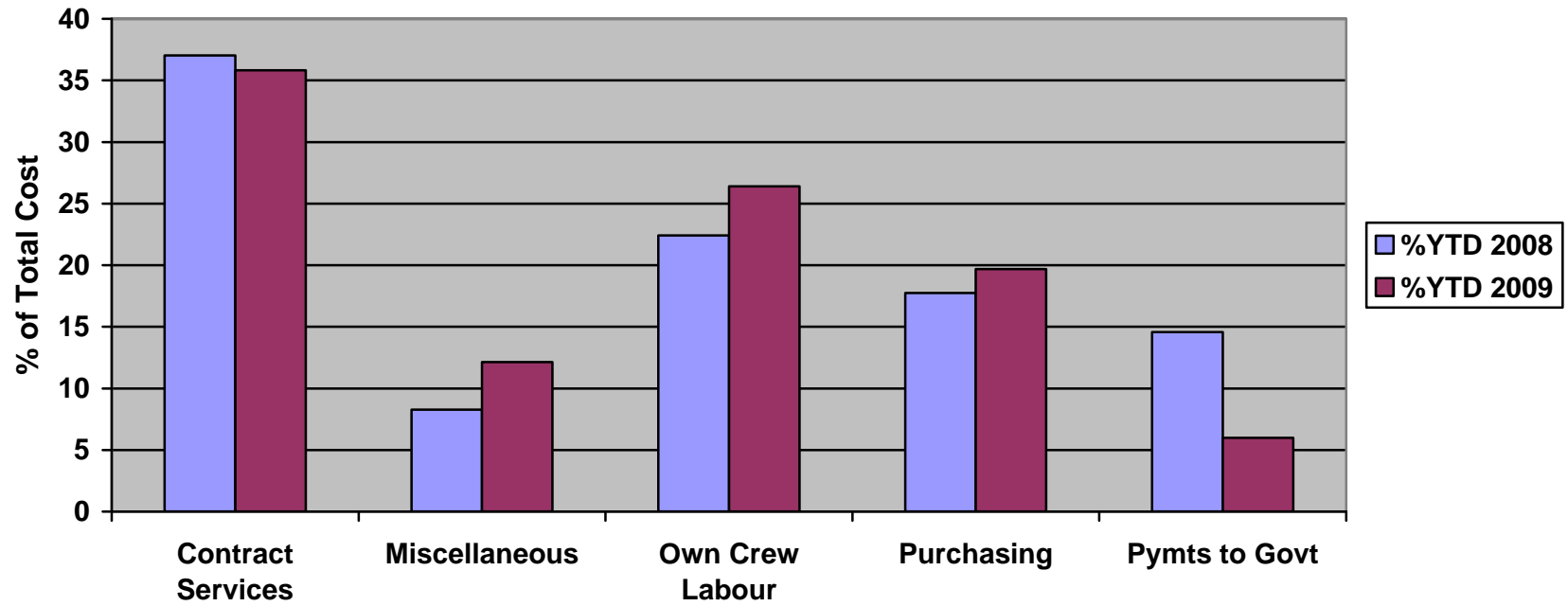
taxes (employee income tax with holdings) and assessments for EI or CPP, corporate income taxes, or corporate capital taxes, etc.

Purchasing includes all supplies, materials and services purchased that don't fit into a category listed above. Some of the services in this category would include Insurance coverage, road use charges, association dues, donations and repair supplies and services.

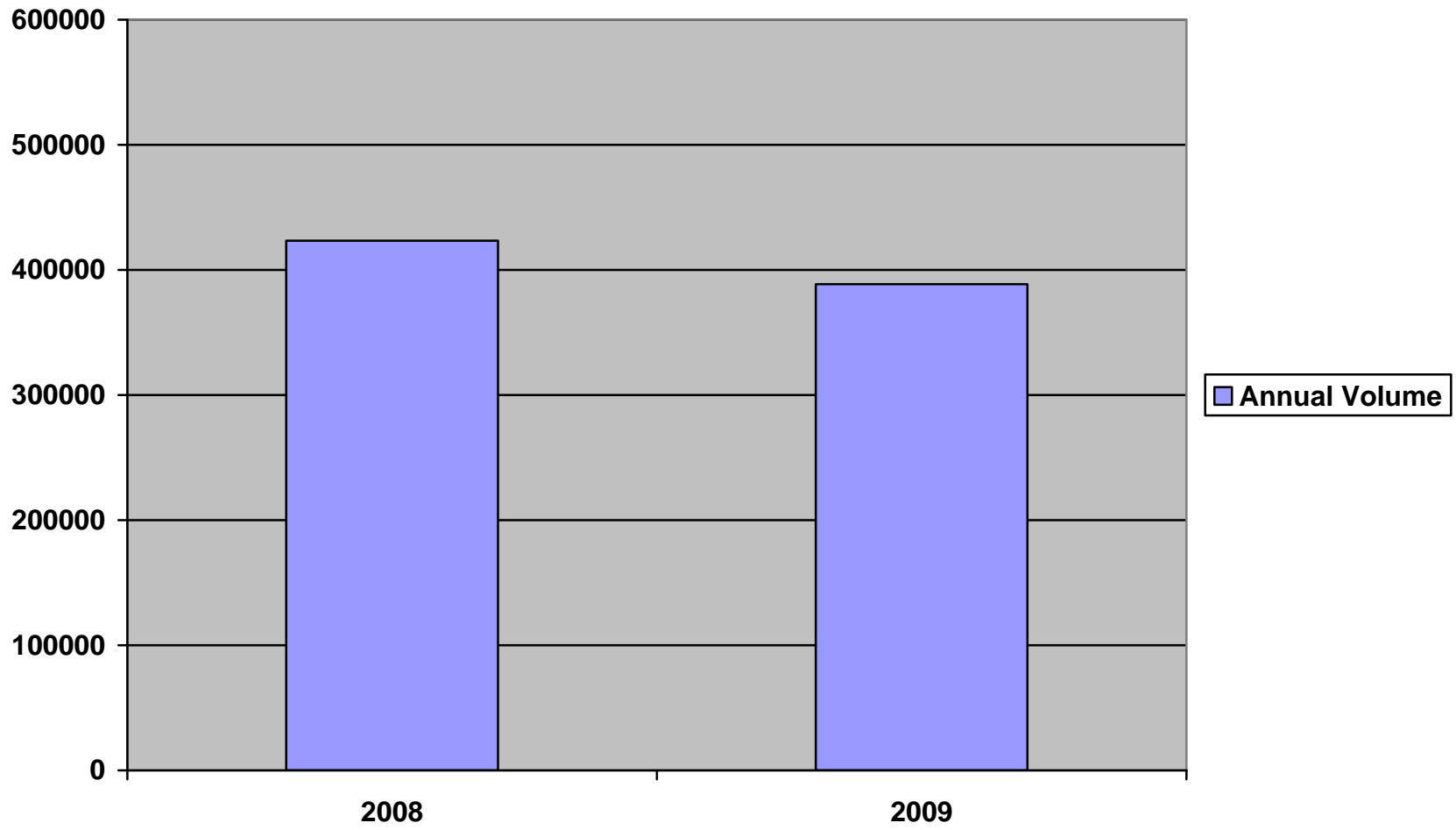
Miscellaneous is a category that includes any costs not captured in other categories. It includes, but is not limited to nor reconciles to the following: depletion on timber, road amortization, silviculture liability change, inventory change/allocations, depreciation and machine cost allocations.

Performance:

### Distribution of Primary Costs by Percentage



# Annual Volume



## Indicator 29: Volume of Cedar made available to First Nations

Old growth western redcedar logs are important to First Nations for traditional, cultural and ceremonial purposes.

**Value:** Old Growth Cedar

**Objective:** Old Growth cedar continues to be available to First Nations.

<b>Indicator 29:</b>	The annual volume of old growth cedar made available to First Nations.
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**Target:** The volume of old growth cedar made available to First Nation is as reasonably requested.

**Variance:** Not applicable.

**Forecast:** This indicator cannot be forecast.

**Legal or Other Requirements:** None but supports the acknowledgement of aboriginal rights.

### Data:

The volume of logs that is made available to First Nation groups is scaled and recorded at the point of delivery. This volume is reported to and tracked by the Area Engineer in charge of Special Forest Products. This information is forwarded annually to the Operations Forester.

### Performance:

Year	Volume of Cedar Logs (m <sup>3</sup> )
2006	25.0
2007	31.0
2008	9.0
2009	60.7



### Indicator 30: Planting of Cw (compared to harvest)

This indicator tracks the planting of species (specifically Western redcedar) relative to the proportions removed in harvest. The objective is to ensure a sustained supply of WRC over time. Old growth cedar has traditional, cultural and ceremonial uses for First Nations.

**Value:** The regeneration of Cedar.

**Objective:** Cedar is regenerated in scale with its extraction and as ecologically suitable.

<b>Indicator 30:</b>	The 10-year average % variance between the % of annual harvested volume that is cedar and the % of the annual planted seedlings that are cedar.
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**Target:** The 10-year average % variance between the % of annual harvested volume that is cedar and the % of the annual planted seedlings that are cedar is within 20% of the harvested percentage.

**Variance:** None.

**Forecast:** This indicator cannot be forecast.

**Legal Requirements:** None.

#### Data:

Planting of cedar is compared to harvest of cedar over a 10-year period to avoid year to year fluctuations that can occur and to average the delay that occurs between harvest and stocking.

Number of stems planted vs. harvested volume does not yield strictly comparable data. For example, the data does not include natural regeneration; which is a significant component of cedar reforestation in many areas. Further, the average size (m<sup>3</sup> per tree) of harvested cedar trees is generally larger than that of other species. In association with other indicators, however, this data can be meaningful.

Inventory: Cutblock site plans drive the annual planting projections at MIFO. Project plans and activities are tracked in the CenFor database by forestry personnel including the number and type of seedlings planted. Harvest by species is available in the MoF harvest database.

Reporting: The silviculture forester reports on the annual planting program of the operation and the proportion of cedar planted. The Manager – Inventory and Analysis, reports on the annual harvest from the DFA and the proportion of cedar volume harvested. Harvest volumes are billed volumes and include residue. This information is forwarded to the Operations Forester for compilation and reporting in the SFM report.

#### Note:

2005 data going forward reflect the current WFP MIFO Defined Forest Area. Data prior to 2005 include the Eve River (20% takeback area to BCTS) and private lands.

**Performance:**

The 10-year average variance for cedar is within the target range.

Year	DFA Harvested (m <sup>3</sup> )			DFA Planted ('000 trees)			% variance (±) between planting & harvest
	Total	Cedar	% Cedar	Total	Cedar	% Cedar	
1995	1,409,766	187,189	13.3	1,568.2	108.5	6.9	-48.1
1996	1,177,515	143,340	12.2	1,650.5	86.5	5.2	-57.4
1997	1,051,199	130,104	12.4	1,351.0	106.4	7.9	-36.3
1998	964,851	100,711	10.4	1,444.4	162.1	11.2	7.7
1999	1,428,932	189,113	13.2	1,208.3	160.2	13.3	0.1
2000	1,518,840	213,705	14.7	1,567.9	170.5	10.9	-25.9
2001	1,209,212	162,597	13.4	1,858.0	281.4	15.1	12.7
2002	1,130,375	170,862	15.1	1,999.2	368.8	18.4	21.9
2003	1,350,830	248,476	18.4	2,132.8	345.6	16.0	-13.1
2004	1,794,102	232,042	12.9	1,897.6	393.5	20.7	60.5
2005	1,567,965	245,822	15.6	1,354.5	201.2	14.8	-5.1
2006	1,128,419	176,390	15.6	1,672.2	266.4	15.9	1.9
2007	748,030	92,768	12.4	1,495.2	172.4	11.5	-7.3
2008	423,399	84,459	19.9	740.9	83.9	11.3	-8.6
2008 corrected	423,399	84,459	19.9	740.9	83.9	11.3	43.2
2009	388,667	46,542	12	173	13.5	7.8	35
10yr Avg.	1,125,984	167,366	14.9%	1,489.1	229.7	15.4%	3.8%

**Indicator 31: Advisory group active membership**

This indicator tracks the active functioning of the Mid Island Forest Lands Advisory Group (MIFLAG). It provides one indication of the relative success of an ongoing mechanism to allow for meaningful input from all sectors of the local community into SFM planning on the DFA.

**Value:** The sector representation on the Public Advisory Group (PAG)

**Objective:** All relevant sectors are represented on the PAG.

<b>Indicator 31:</b>	The percentage of PAG sector seats that have active representation.
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**Target:** Full (100%) PAG active sector seat participation.

**Variance:** PAG active sector seat representation is at least 90% from year to year.

**Forecast:** Terms of reference for the advisory group.

**Legal Requirements:** None.

**Data:**

**Inventory:** The Operations Forester is responsible for supporting and monitoring participation in the advisory group. There is a membership list and Terms of Reference for the advisory group.

**Reporting:** Minutes are recorded for each meeting that includes attendance. The MIFLAG membership list is maintained by the MIFLAG facilitator and posted on the MIFLAG internet website.

**Performance:**

Sector	MIFLAG Membership at end of											
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Fish and Game Club	1	1	1	1	1	1	1	1	1	1	1	1
First Nations	2	1	1	1	1	1	1	1	1	1	1	1
Ministry of Forests	1	1	1	1	1	1	1	1	1	1	1	1
City of Campbell River	1	1	1	1	1	1	1	1	1	1	1	1
Education/Youth	0	0	1	0	1	1	1	1	1	1	1	1
Contractor	1	1	1	1	1	1	0	0	1	1	1	1
Supplier	1	1	1	1	1	1	0	1	1	1	0	1
Village of Sayward	1	1	1	1	1	1	1	1	1	1	1	1
Regional District	1	1	1	1	0	1	1	1	1	1	1	1
Environmental Council	1	1	1	1	1	1	1	1	1	1	1	1
Member at Large	0	0	1	1	1	1	1	0	1	1	1	1
Labour	1	1	1	1	1	1	1	1	1	1	1	1
Chamber of Commerce	1	1	1	1	1	1	1	1	1	1	1	1
Senior	0	0	0	0	1	1	1	1	1	1	1	1
<b>Total Sectors</b>	<b>12</b>	<b>11</b>	<b>13</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>12</b>	<b>12</b>	<b>14</b>	<b>14</b>	<b>13</b>	<b>14</b>

**Indicator 33: Public Usage of the MIFLAG website**

This indicator tracks the total number of pages that users visit on the website as an indication of the level of interaction by the public. The total number of pages is typically used to determine the total number of visitors to the webpage.

**Value:** Public awareness

**Objective:** To support open communication and dialogue with the public.

<b>Indicator 33:</b>	The annual total page hits on the MIFLAG website.
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**Target:** Increases from year to year.

**Variance:** None.

**Forecast:** This indicator cannot be forecast.

**Legal Requirements:** None.

**Data:** Usage information is recorded by the website service provider. The Forestry Clerk tracks these monthly statistics and submits an annual summary to the Operations Forester. The Operations Forester reports the results in the annual SFM report.

**Definition:** A page is defined as a single file delivered to a web server that contains HTML or similar content. Any file that is not specifically a GIF, JPEG, PING, JS (javascript) or CSS (style sheet) is considered a page.

**Performance:**

Year	Number of Page Hits
2007	4,944
2008	6,166
2009	5,803

**Indicator 34: Stakeholder/First Nations participation satisfaction evaluation**

This indicator tracks the satisfaction of stakeholders/First Nations with the public participation process.

**Value:** Stakeholder/First Nations participation satisfaction

**Objective:** CSA public participation at this table is responsive, communicative and representative of stakeholder and First Nations' values.

<b>Indicator 34:</b>	Stakeholder/First Nations participation satisfaction evaluation.
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**Target:** Continual improvement.

**Variance:** None.

**Forecast:** This indicator cannot be forecast.

**Legal Requirements:** None.

**Data:**

Data is collected by means of an annual survey of stakeholders and First Nations by the Chair/Facilitator.

Reporting: The Operations Forester reports on the results in the annual SFM report.

**Performance:**

Year	Objective Achieved
2006	Yes
2007	Yes
2008	Yes
2009	Yes

**Indicator 35: Allocation of resources from WFP to the development and implementation of non-herbicide alternatives specific to current herbicide uses as reported to MIFLAG quarterly**

This indicator tracks the allocation of resources.

**Value:** Research in alternatives to herbicides currently used in the DFA

**Objective:** The Forest Operation supports research in and deployment of non-herbicide alternatives.

<b>Indicator 35:</b>	Funding of applicable research projects by Western Forest Products.
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**Target:** Funding of applicable research projects by Western Forest Products is allocated.

**Variance:** None.

**Forecast:** Research support discontinued in 2008. Undertake literature review of other applicable research projects during 2009.

**Legal Requirements:** None.

**Performance:**

Year	Comment
2004	<ul style="list-style-type: none"> <li>▪ Development of a biological control strategy for management of weedy <i>Rubus</i> spp. in Conifer Regeneration Sites (Dr. Simon F. Shamoun).</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Development of a bioherbicide for control of Salal (<i>Gaultheria shallon</i>) in Conifer Regeneration Sites (Dr. Simon F. Shamoun). Pacific Forestry Centre.</li> </ul>
2005	<ul style="list-style-type: none"> <li>▪ Cascadia continues to support the above research into biological controls.</li> </ul>
2006	<ul style="list-style-type: none"> <li>▪ Cascadia/WFP continued to support the above research into biological controls for <i>Rubus</i> spp. (primarily salmonberry) with study sites in the Stillwater operation. Because the study areas and dry salal sites of most concern are located on S.E. Vancouver Island, the research on biological controls for Salal is now being done in collaboration with Island Timberlands.</li> </ul>
2007	<ul style="list-style-type: none"> <li>• WFP continued to support the above research into biological controls for <i>Rubus</i> spp. (primarily salmonberry) with study sites in the Stillwater operation.</li> </ul>
2008	<ul style="list-style-type: none"> <li>• The <i>Rubus</i> spp. research was not yielding viable results after 4 years of study. Funding support for this project as been discontinued.</li> </ul>
2009	<ul style="list-style-type: none"> <li>• Participation in development and implementation of the strategy "Hardwood Management in the Coast Forest Region". Note: 10.7 ha committed to manage for Dr in 2009.</li> </ul>

### Indicator 36: Hectares of brush treatments by method

This indicator tracks the amount of brushing that is done on the DFA in order to meet our free growing obligations. WFP's intention is to minimize the use of herbicides. This indicator will track both herbicide and manual brush treatments to measure what proportion of the brushing program utilizes herbicides.

WFP is committed to:

- Advertise the location of treatment in Campbell River and Sayward.
- Provide MIFLAG with detailed site assessments prior to treatment and post treatment assessments.

**Value:** The use of herbicide in the DFA

**Objective:** Vegetation Management in the DFA emphasizes non-herbicide methods.

<b>Indicator 36:</b> The cumulative percentage of brushing activities that is done using herbicides over the term of the PMP is limited to 20%.
---

**Target:** 20%.

**Variance:** None.

**Forecast:** Brush control is essential for the establishment of new plantations and achieving free growing obligations. Herbicides are used where manual methods are ineffective or economically impractical. While the area of herbicide treatment may fluctuate from year to year it is the company's intent to work towards the 20% target over the term of the PMP.

**Legal Requirements:** None.

**Data:** Herbicide use is summarized annually and reported to the Pesticide Control Branch. The Silviculture Forester is responsible for compiling this data and providing a summary to the Operations Forester.

**Note:** 2005 data going forward reflect the current WFP MIFO Defined Forest Area. Data prior to 2005 include the Eve River (20% takeback area to BCTS) and private lands. The term of the PMP is from Feb 26, 2004 to Feb 25, 2010.

**Performance:**

The table below shows percentage of use by both herbicide and manual brushing treatments.

### Brushing Treatments

Year	Hectares Treated By Method						
	Manual Methods			Herbicide Methods			Grand Total Of All Methods
	Girdling	Brush Saw or Other Manual Method	%	Individual Tree	Ground Foliar	%	
2003	0	79.8	100	0	0	0	79.8
2004	0	52.8	100	0	0	0	52.8
2005	0	142.1	71	58.4	0	29	200.5
2006	0	63.7	51	61.0	0	49	124.7
2007	0	57.0	94	0	3.8	6	60.8
2008	0	128.1	100	0	0	0	128.1
2009	17.7	564.1	81%	51.5	81.8	19%	715.1
*6yr Total	17.7	1007.8	80%	170.9	85.6	20%	1282

\*MIFO PMP was extended by 1 yr in 09. The averages reflect the life of the PMP.



### Indicator 37: Public education, communications and consultation program

This indicator measures success at meeting commitments for public education, communications and consultation.

**Value:** Public education and communication

**Objective:** A continuous public education and communication program exists.

<b>Indicator 37:</b>	The annual percentage of the annual program elements that are fulfilled.
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**Target:** The annual % of the annual program elements that are fulfilled is 100%.

**Variance:** None.

**Forecast:** The objective is the forecast.

**Legal Requirements:** None.

**Data:**

During the annual planning process that begins in October a public education program is developed and a budget put in place. The program may consist of tours, open houses, displays, appearances, sponsorships or communication. The objective is to complete all the activities listed in the program.

Inventory: It is the responsibility of the Operations Forester to develop the program and report on the completion of activities in the Indicator Data set.

Reporting: The Operations Forester reports on the indicator performance in the annual SFM Report.

**Performance:** Note that support for programs, organizations and students is defined as MIFO support and does not include any that may be provided through the Timberlands corporate office in Campbell River except for the Forest Education program. Support may be in the form of monetary and/or in-kind assistance.

		2000		2001		2002		2003		2004		2005		2006		2007		2008		2009	
		Plan	Achieved	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A
Tours	Programs	1	2	2	1	0	0	1	0			0	0	0	0	0	0	0	0	0	0
	Stakeholder	1	5	1	2	3	3	2	3	2	2	2	3	2	3	2	3	2	2	-	2
	Other	AR	20	AR	2	2	2	1	0	37	37	AR	17	AR	0	AR	1	AR	3	AR	4
Public Education	Open houses	2	5	0	0	AR	AR	AR	AR			1	1	1	1	1	1	2	2	1	1
	School visits	0	0	4 classes	2 CF & B	1	1	0	B	B	B	AR	2	AR	0	-	-	-	-	AR	0
	Forest Education Program															2 schools	3	3	3	0	0
	Presentations	N/A	4	1	1	1	1	1	0	1	1	AR		AR	0	0	1	0	0	0	0
Communication	Talks	AR	0	AR	AR	AR	AR	AR	AR	1	1	AR	2	AR	0	AR	0	AR	0	AR	0
	Stake-holder / First Nations	10	26	17	26	18	18	14	17	18	18	12	12	10	9	10	10	10	10	10	10
Support	Programs	0	4	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0
	Organizations	0	1	0	0	0	0	0	0	0	0	0	21	0	5	0	6	0	7	0	8
	Students	14	14	7	7	1	1	3	3	2	2	3	3	4	2	2	2	3	5	0	0

**Planned – P, Achieved – A**

**AR – As Requested**

**B – Brownies**

**CF – Children’s Festival**

### Indicator 38: Corporate and operational research program

This indicator provides a measure of how responsive research programs are to contributing to better quality decisions for Sustainable Forest Management.

**Value:** Research

**Objective:** There is ongoing research related to ecosystem management and operations.

<b>Indicator 38:</b>	The number of active ecosystem management and operation related research projects.
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**Target:** The number of active ecosystem management and operation related research projects is at least one in any given year.

**Variance:** >1

**Forecast:** Continued allocation of resources to support applicable research is expected.

**Legal Requirements:** None.

#### Data:

Research programs are summarized in individual reports.

Inventory: WFP Corporate Forestry maintains the up to date documentation of research activities. This documentation includes project plans, budgets, research activity progress, and actual dollars spent.

Corporate Forestry also facilitates the transfer of "Best Practices" from company and other agency research to operational planning staff.

Reporting: The Forest Ecologist is responsible for the overall program and reporting annually on this indicator.

#### Performance:

Year	Comment
1999	Current research programs are summarized in the "1999 Reporting to Revenue Canada", the "Forest Project Annual Report 1999 – 2000", Forest Renewal B.C. Summaries and the actual application of "Best Practices" on the ground.
2000	Current research programs are summarized in the "Reporting to Canada Customs and Revenue Agency," and in the "Forest Project Annual Report."
2001	Current research programs are summarized in the "Reporting to Canada Customs and Revenue Agency," and in the "Forest Project Annual Report."
2002	Current research programs are summarized in the "Reporting to Canada Customs and Revenue Agency," and in the "Forest Project Annual Report."
2003	Current research programs are summarized in the "Reporting to Canada Customs and Revenue Agency," and in the "Forest Project Annual Report."
2004	Current research programs are summarized in the "Reporting to Canada Customs and Revenue Agency," and in the "Forest Project Annual Report."

	Revenue Agency,” and in the “Forest Project Annual Report.”
2005	Current research programs are summarized in the 2005 Monitoring and Research Projects report.
2006	Current research programs are summarized in the 2006 Monitoring and Research Projects report.
2007	Current research programs are summarized in the 2007 Monitoring and Research Projects report.
2008	Current research programs are summarized in the 2008 Monitoring and Research Projects report.
2009	Current research programs are summarized in the 2009 Monitoring and Research Projects report.

**Indicator 39: Compliance with treaty settlements and interim measures agreements**

This indicator measures compliance with treaty rights and legal requirements regarding First Nations communities.

**Value:** Treaty settlements and interim measures agreements.

**Objective:** Implement measures to comply with treaty settlements or interim measures agreements on the DFA.

<b>Indicator 39:</b>	Compliance with treaty settlements and interim measures agreements.
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**Target:** 100% compliance.

**Variance:** Not applicable.

**Forecast:** K'omoks, HTS and Tlowitsis in stage 4 of treaty negotiations.

**Legal Requirements:** Supports the acknowledgement of aboriginal rights.

**Data:**

Corporate/Regional staff will track the receipt of treaty or interim measures orders and forward these to the operation. MIFO will implement measures to comply with treaty settlements or interim measures agreements that are imposed on the DFA.

Reporting: The Operations Forester reports on the indicator performance in the annual SFM Report.

**Performance:**

Year	Compliance	Comment
2000	N/A	There are no settlements or interim measures agreements in place. MIFO continues to monitor treaty negotiations and work with First Nations through the Kwakwaka'wakw Laich-Kwil-Tach Nations Treaty Society.
2001	N/A	There are no settlements or interim measures agreements in place. MIFO continues to monitor treaty negotiations and work with First Nations through the Kwakwaka'wakw Laich-Kwil-Tach Nations Treaty Society.
2002	N/A	Unchanged from above.
2003	N/A	Unchanged from above.
2004	N/A	Unchanged from above.
2005	N/A	Unchanged from above.
2006	N/A	Unchanged from above.
2007	N/A	Unchanged from above.
2008	N/A	Unchanged from above.
2009	N/A	Unchanged from above.

**Indicator 40: Compliance with required public consultation processes**

This indicator documents compliance with required public consultation processes. These public reviews are important for communication, including input into operational and strategic plans.

**Value:** Public consultation.

**Objective:** Public input into operational and strategic plans.

<b>Indicator 40:</b>	Compliance with required public consultation processes.
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**Target:** 100% compliance.

**Variance:** None.

**Forecast:** Anticipate full compliance moving forward.

**Legal Requirements:** IPM Regulation ss.9 and 10. FRPA s.18, FPPR ss.20, 21, 22.

**Data:**

The Operations Forester tracks required public consultation processes, documenting requirements and achievements. The results are summarized and reported annually. The required public consultation processes include public reviews of Management Plans, Forest Stewardship Plans, and Pesticide Use Permits, First Nations consultations and other reviews as required.

**Inventory:** A record of public participation is maintained with each process. A summary of public consultation is maintained, in part in the CenFor database.

**Reporting:** The Operations Forester compiles the data from the CenFor database and reports on the indicator performance in the annual SFM Report.

**Performance:**

Public Consultation Process	Date of Review
Management Plan (MP)	Nov. 21-22, 2000
First Nations – FDP	Dec. 22, 2000
First Nations – MP	Oct. 30, 2000
Forest Development Plan (FDP)	Dec. 28, 2000 – Jan. 2, 2001
Pest Management Plan (PMP)	Nov. 15, 2002
Pest Management Plan (PMP)	Feb. 5, 2003
First Nations – FDP / Cedar	Feb. 14, 2003
Pest Management Plan (PMP)	Feb. 27, 2003
First Nations – FDP / Cedar	Mar. 10, 2003
Pest Management Plan (PMP)	Mar. 19 - 28, 2003
First Nations – Cedar	Nov. 14, 2003
First Nations – Cedar	Nov. 28, 2003
Pest Management Plan (PMP)	May 3, 2003

Pest Management Plan (PMP)	May 21, 2003
Pest Management Plan (PMP)	May 28, 2003
Pest Management Plan (PMP)	June 19, 2003
Pest Management Plan (PMP)	June 26, 2003
Forest Development Plan (FDP)	Jan. 30 – Mar. 30, 2004
Forest Development Plan (FDP)	May 7 – July 7, 2004
Forest Development Plan (FDP)	July 26 – Sept. 24, 2004
Forest Development Plan (FDP)	Mar. 4 – May 3, 2005
Forest Development Plan (FDP)	Mar. 4 – Nov. 9, 2005
Forest Development Plan (FDP)	May 5- July 13, 2005
Forest Development Plan (FDP)	Sept. 6 – Nov. 9, 2005
Pest Management Plan (PMP)	Campbell River – June 29, 2005
Pest Management Plan (PMP)	Campbell River – July 6, 2005
Pest Management Plan (PMP)	Sayward – July 7, 2005
Forest Development Plan (FDP)	Dec. 14, 2005
Forest Development Plan (FDP)	Jan. 13 – Mar. 15, 2006
Forest Development Plan (FDP)	June 19 – Aug. 18, 2006
Pest Management Plan (PMP)	Campbell River – July 7, 2006
Pest Management Plan (PMP)	Campbell River – July 14, 2006
Pest Management Plan (PMP)	Sayward – July 7, 2006
Forest Stewardship Plan	Campbell River – Jan. 27 – Apr. 26, 2006
Pest Management Plan (PMP)	Campbell River – Aug. 3, 2007
Pest Management Plan (PMP)	Sayward – Aug. 10, 2007
Pest Management Plan (PMP)	Sayward – Aug. 23, 2007
No required public consultation processes occurred in 2008	
Pest Management Plan (PMP)	Sayward News and Courier Islander – July 10, 2009

**Indicator 41: FRPA contraventions related to road, soil and water management**

This indicator tracks the number of legislative non-compliance incidents on the DFA relating to road construction, soil and water. It provides a measurement, in particular, of the extent to which Mid Island Forest Operation is effectively managing its road building practices and mitigating the potential effect of its operations on soil and water.

**Value:** Clean water and productive soils.

**Objective:** Effectively manage harvesting activities to mitigate potential effects on soils and water resources.

<b>Indicator 39:</b>	The number of FRPA compliance action items, contraventions and determinations related to road, soil and water management.
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**Target:** Zero

**Variance:** Less than the 3-year average

**Forecast:** The goal is to minimize the number of non-compliance items

**Legal Requirements:** FPPR ss. 102,103.

**Data:**

MoF inspection reports and compliance action items are tracked in ITS at the forest operation level.

**Performance:**

Year	Number of compliance action items	Number of FRPA contraventions	# of FRPA determinations
1999		2	1 (1997)
2000		0	1 (1999)
2001		0	0
2002		1	1
2003		0	0
2004		0	0
2005		0	0
2006		0	0
2007		0	0
2008		0	0
2009		0	0