

Indicator 1.1.2: Forest Area by Type or Species Composition

Element: 1.1 Ecosystem Diversity <i>Conserve ecosystem diversity at the stand and landscape levels by maintaining the variety of communities and ecosystems that naturally occur in the DFA. Establish forest plantations only in afforestation projects.</i>				
Value	Objective	Indicator	Target	Variance
The representation of commercial species on the DFA	Species conversion on the DFA is limited	Forest area by type or species composition	The three-year movement in the representation of each commercial tree species (as expressed by the forest area by species composition) in the inventory remains within 2% of the 2012 baseline level.	+/- 1% of the target by species. i.e. Douglas-fir at 20.6% could be as high as 23.6% or as low as 17.6% in 2018.

History

Core Indicator under CSA Z809-08. Title updated for CSA Z809-16.

Basis for the Target

The target is based on the natural occurrence of commercial species and their ability to adapt to the biogeoclimatic conditions in the DFA. Maintaining the current tree species diversity is a fundamental strategy for climate change and forest health. The variance is to account for the artificial regeneration (tree planting) that will occur to favour the more desirable commercial species and the potential changes in climatic conditions.

Current Status & Results

Given the DFA changed significantly with area removals in 2010 the new baseline will be 2012. The tree species representation is to be re-assessed for the 2024 report.

Species	Base-line % 2012	2018 %	% change 2012-18	2021 %	% change 2012-2021	Target Met	Variance Met
Douglas-fir	20.6	19.9	-0.7	20.1	-0.5	Y	n/a
Pine	0.4	0.4	0	0.4	0		
Western Red Cedar	19.3	20.0	0.7	20.0	0.3		
Yellow Cedar	3.0	3.5	0.5	3.3	0.3		
Sitka Spruce	0.4	0.5	0.1	0.5	0.1		
Hemlock (western & mountain)	42.0	41.2	-0.8	41.2	-0.8		
Amabilis Fir	12.5	12.7	0.2	12.6	0.1		
Deciduous (Alder and Maple)	1.9	1.8	-0.1	1.8	-0.1		

Performance and Interpretation

2023: The tree species representation has remained quite consistent compared to the 2012 baseline.

File: S:\EMIS\CSA\SFMP_Plan\2023\TSAWAK-QIN_SFMP-App.1_2023_Detailed_Indicator+Results_V2.doc	
Revised:	Page 8 of 97

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Strategies & Implementation

Tsawak-qin Forestry conducts reforestation activities consistent with legally required and approved stocking standards in the Forest Stewardship Plan (FSP) that include the applicable tree species permitted for each ecosystem type and site series. Regeneration and Free growing surveys and milestone obligations ensure cutblocks are regenerated in accordance with approved stocking standards.

Forecasts

The Timber Supply Analysis supports the forecast of no major changes in tree species over the long term.

The species representation is expected to change slightly over time due to climate change and adaptive management plans that include regeneration to more heat tolerant or commercially valuable species such as Douglas-fir and Western Red Cedar. Some Noble Fir (non-native species) may also be planted at higher elevations due to research data that supports higher health and vigour than some native species such as Amabilis Fir. As the factors associated with climate change become better understood the target may need to be adjusted.

Monitoring

The TFL Forester is responsible for coordinating GIS analysis (GIS Department), planting, and assessment programs. The report will be based on all species (area weighted) excluding NSR classified lands and miscellaneous species.

Indicator 1.2.1: Habitat Protection for Selected Focal Species

Element: 1.2 Species Diversity <i>Conserve species diversity by ensuring that habitats and forest conditions for the native species found in the DFA are maintained through time, including habitats for known occurrences of species at risk.</i>				
Value	Objective	Indicator	Target	Variance
Habitat for focal species, including species at risk existing in the DFA	Maintain or increase habitat for selected focal species, including species at risk	Degree of habitat protection for selected focal species, including species at risk	The amounts (in ha) of habitat protected for selected focal species remains the same or increases year after year	Decrease by 1%

History

Core Indicator under CSA Z809-08. Title updated for CSA Z809-16.

Basis for the Target

The target is based on legal requirements under FRPA and the government initiatives underway through Land Use Planning processes and strategies such as the Identified Wildlife Management Strategy. The variance is meant to help account for fluctuation due to spatial issues (e.g. map base or scale) and natural disturbance factors.

“Habitat, in terms of both quantity and quality, is a key component of the health of species and animal populations” (CSA Sustainable Forest Management, 2008). Forest management can have both positive and negative effects for wildlife and their habitat. It is important to ensure forest habitat necessary to the survival of species is available for use in the short-term and long-term. Habitat reserved for focal species also contributes to the habitat needs of many other wildlife species.

Ungulate winter ranges are areas identified as critical to the survival of local populations of ungulates during severe winters. On Vancouver Island, Black-tailed deer and Roosevelt elk need areas with suitable forest and topographical features that are able to provide shelter, forage and snow interception. Roosevelt elk are on the BC provincial blue-list and have a BC Conservation Framework Priority 2 (BC Species and Ecosystems Explorer, 2010) as well as having local and cultural importance. Black-tailed deer are not considered a species of concern but have local importance for food, economic opportunity and recreation.

Marbled Murrelets are small seabirds that nest inland with a majority of nests being found on large boughs high in old conifers up to 30 km inland. Much work has been done along the coast to identify and rank suitable nesting habitat for Marbled Murrelets. Marbled Murrelets are listed as threatened on Schedule 1 of the Federal Species at Risk Act (SARA), provincially blue-listed, listed on the Forest and Range Practices Act (FRPA) Category of Species at Risk and considered Identified Wildlife, and have a BC Conservation Framework Priority of 1 (BC Species and Ecosystems Explorer, 2010). Identified Wildlife are considered to be sensitive to habitat alteration associated with forest and range practices and are considered to be at risk (endangered, threatened, vulnerable or regionally important).

Northern Goshawks are a relatively large forest dwelling hawk. They need a closed canopy forest with an open understory for nesting and foraging. The coastal subspecies is listed as Threatened on SARA Schedule 1, provincially red-listed, listed on the Forest and Range Practices Act (FRPA) Category of Species at Risk and are considered Identified Wildlife, and have a Conservation Priority of 1.

File: S:\EMSI\CSA\SFM_Plan\2023\TSAWAK-QIN_SFMP-App.1_2023_Detailed_Indicator+Results_V2.doc	
Revised:	Page 14 of 97

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The Northern Red-legged Frog is a moderate-sized frog occurring from southwestern BC to northwestern California. It generally inhabits moist, lower elevation forests and requires both aquatic breeding habitat and terrestrial foraging habitat. The Red-legged Frog is listed as Special Concern on SARA Schedule 1, provincially blue-listed, listed on the Forest and Range Practices Act (FRPA) Category of Species at Risk and is considered Identified Wildlife, and has a Conservation Priority of 1.

Scouler's Corydalis is a 60 – 120 cm tall plant with rosy-pink, spurred flowers. It is limited in distribution to the Pacific Northwest and in BC is only found on southwestern Vancouver Island. Scouler's Corydalis is not listed by SARA, has been provincially down listed to yellow and has a Conservation Priority of 3. It is listed on the Forest and Range Practices Act (FRPA) Category of Species at Risk and is considered Identified Wildlife.

Current Status & Results

Year	Type of Habitat Protected/ Species	Area (ha)			Measure	Target Met (Y/N)	Variance Met (Y/N)
		Legal	Proposed	Voluntary			
2023	UWR	2,130	0	0	Spatially delineated ungulate winter range	Y	n/a
	MAMU	3,223	2,408	0.51	Moderate to very High ranked habitat from the low-level aerial inventory in WHA, UWR, OGMA		
	Goshawk	782	402	276	Area reserved around known nests (WHA, other)		
	Red-legged Frog	54	0	0	Area reserved around known breeding ponds		
	Scouler's Corydalis	74	0	0	Area reserved around known locations of Scouler's Corydalis		
2022	UWR	2,130	0	0	Spatially delineated ungulate winter range	Y	n/a
	MAMU	3,153	1,607	0	Moderate to very High ranked habitat from the low-level aerial inventory in WHA, UWR, OGMA		
	Goshawk	782	0	432	Area reserved around known nests (WHA, other)		
	Red-legged Frog	54	0	0	Area reserved around known breeding ponds		
	Scouler's Corydalis	74	0	0	Area reserved around known locations of Scouler's Corydalis		
2021	UWR	2,130	0.00	0.00	Spatially delineated ungulate winter range	N	N
	MAMU	3,153	1,604	0.00	Moderate to very High ranked habitat from the low-level aerial inventory in WHA, UWR, OGMA		
	Goshawk	782	0.00	432	Area reserved around known nests (WHA, other)		
	Red-legged Frog	54	0.00	0	Area reserved around known breeding ponds		
	Scouler's Corydalis	74	0.00	0	Area reserved around known locations of Scouler's Corydalis		
2020	UWR	2,130	0	0	Spatially delineated ungulate winter range	Y	n/a

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	MAMU	3,213	1,830	0	Moderate to very High ranked habitat from the low-level aerial inventory in WHA, UWR, OGMA		
	Goshawk	782	0	432	Area reserved around known nests (WHA, other)		
	Red-legged Frog	54	0	0	Area reserved around known breeding ponds		
	Scouler's Corydalis	74	0	0	Area reserved around known locations of Scouler's Corydalis		
2019	UWR	2130	0	0	Spatially delineated ungulate winter range	Y	n/a
	MAMU	3169	1693	0	Moderate to very High ranked habitat from the low-level aerial inventory in WHA, UWR, OGMA		
	Goshawk	0	782	432	Area reserved around known nests (WHA, other)		
	Red-legged Frog	54	0	0	Area reserved around known breeding ponds		
	Scouler's Corydalis	74	0	0	Area reserved around known locations of Scouler's Corydalis		

Performance and Interpretation

2023: The Goshawk area increased overall, with voluntary area dropping and proposed area increasing. The Provincial government is advocating for additional Goshawk WHA locations, thus proposed area is increasing, through collaboration with Tsawak-qin.

Strategies & Implementation

In general, the management strategy for this indicator includes:

- To spatially designate and legally establish Wildlife Habitat Areas and Old Growth Habitat Areas. Tsawak-qin Forestry has a mix of legally established and proposed areas. The intent is to eventually move proposed areas through the process to become legally established.
- When it is necessary to build roads through or harvest adjacent to one of these reserves, Tsawak-qin Forestry attempts to minimize the impact and provides replacement habitat of similar quality, if necessary.
- Species at Risk training is delivered to the operations to aid staff in identifying and working around Species at Risk.
- Northern Goshawk Management Protocol has been developed to guide operations managing forest activities around nests.
- When other habitat is encountered that is actively used by a focal species including a species at risk, the site undergoes evaluation for potential candidacy as a permanent reserve.

Forecasts

As more reserves such as WHAs, UWRs and OGMA become legally established, the habitat conserved for focal species is expected to increase over the short to medium term. In the long-term, it is anticipated that as BC government Implementation Plans come into effect for Northern Goshawk and Marbled Murrelet, the hectares attributed to WHAs will increase.

Monitoring

The Wildlife Biologist & GIS Technician provides updated information in relation to this indicator to support the indicator basis for the target, current results, strategies and implementation and monitoring methods, as required.

The TFL Forester is responsible for coordinating GIS Analysis (shape files are obtained from the government as protected areas are approved).

- Reserves are mapped spatially in a layer of the GIS. Changes in boundaries are tracked by Corporate Forestry biologists.
- All habitat supply will be monitored spatially relative to the target every year.
- Nests are documented when they are located, and appropriate management strategies are developed within site-level plans.
- Known nests will be monitored for activity when forest management activities are planned nearby.

File: S:\EMS\CSA\SFMP_Plan\2023\TSAWAK-QIN_SFMP-App.1_2023_Detailed_Indicator+Results_V2.doc	
Revised:	Page 17 of 97

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Indicator 3.2.2b: Community Watersheds

Element: 3.2 Water Quality and Quantity <i>Conserve water resources by maintaining water quality and quantity.</i>				
Value	Objective	Indicator	Target	Variance
Water quality in community watersheds in the DFA	Water quality in community watersheds is maintained	The number of water-related non-compliances or non-conformances in community watersheds	Zero	None

History

This indicator is carried forward from the 2016 SFMP (Indicator 3.2.B). Indicator number updated for CSA Z809-16.

Basis for the Target

The target and variance are based on legal requirements under FRPA and the TFL 44 Limited Partnership's EMS.

Current Status & Results

Year	# of non-Conformance	# of non-Compliance	Target Met (Y/N)	Variance Met (Y/N)
2023	0	1	N	n/a
2022	1	0	N	n/a
2021	0	0	Y	n/a
2020	0	0	Y	n/a
2019	0	0	Y	n/a
2018	0	0	Y	n/a

Performance and Interpretation

2023: 1 block harvested within community watersheds in 2023 (China Creek, Cutblock 181304). A post-harvest inspection determined that road culvert crossings were not adequately capped with clean shot rock to reduce sedimentation as per Tsawak-qin's Community Watershed SOP.

Strategies & Implementation

Standard Operating procedures (SOPs) govern and limit any negative impacts to water quality. Moreover, the current FSP has strategies for sediment control in community watersheds specific to ditch cleaning, culvert replacement, road surfacing and road maintenance.

Forecasts

It is anticipated that the target and variance will be met, as the target is related to a legal requirement. No harvesting is planned within Community Watersheds in 2024.

Monitoring

The TFL Forester reviews the central file for external and internal audits, inspections and/or investigations and the Cengea database Incident Tracking System for reports of non-conformance or non-compliance. Compliance and conformance to the SOP's is monitored through cutblock, road and post-harvest inspections.

Indicator 3.2.2c: S4 Streams

Element: 3.2 Water Quality and Quantity

Conserve water resources by maintaining water quality and quantity.

Value	Objective	Indicator	Target	Variance
S4 fish streams in the DFA	Maintain or increase the level of protection for S4 fish streams	The percent of stream area of S4 fish streams that are buffered with stand level retention	Measured annually, the percent area that is buffered within a 15-meter corridor associated with S4 fish streams is 80% or greater	-5%

History

This indicator is carried forward from the 2016 SFMP (Indicator 3.2.C). Indicator number updated for CSA Z809-16.

Basis for the Target

The target is based on maintaining habitat to support TPAG input on riparian habitat and fish and an objective under FRPA. Historically, a TPAG subcommittee established the targets after discussion and field measurements of actual achievements. S4 streams are fish bearing and less than 1.5 meters in width.

Current Status & Results

Year	# Cutblocks	Total Area 15m Stream Buffer (ha)	Logged Area of 15m Stream Buffer (ha)	Amount of 15m Stream Buffer Intact (%)	Target Met (Y/N)	Variance Met (Y/N)
2023	6	5.1	0.5	90%	Y	n/a
2022	7	7.0	1.0	86%	Y	n/a
2021	7	11.9	3.6	70%	N	N
2020	14	11.5	1.75	85	Y	n/a
2019	11	8.0	2.8	65	N	N
2018	12	7.1	1.6	77	N	Y

Performance and Interpretation

2023: Indicator has been achieved.

Strategies & Implementation

Planners utilize riparian areas when considering the best location for the placement of retention. Retention along streams is determined at cutblock design. Riparian values are often used to determine the location of VR patches. Yarding systems and windthrow hazard are other factors that require consideration. Strategies related to this indicator can also be found in the SFM Plan Management Strategies (Riparian Management).

Forecasts

There is a new riparian standard which prescribes buffers. This should greatly assist the indicator being met from now on.

Monitoring

The TFL Forester coordinates review of the cutblocks deemed harvest complete and reports the required data/results. Streams are measured by GIS methodologies. The post harvest assessment process monitors the effectiveness of the stream buffers.

Indicator 5.2.2: Level of Participation and Support in Training & Skills Development

Element: 5.2 Communities and sustainability <i>Contribute to the sustainability of communities by providing diverse opportunities to derive benefits from forests and by supporting local community economies.</i>				
Value	Objective	Indicator	Target	Variance
Employee skills	Develop employee skills	Level of participation and support in training and skills development	Annual level of investment in training and skills development for forest planning staff and associated contractor principles averages 5 person-days per year	-0.5 person-days

History

Core Indicator under CSA Z809-08. Title, element, and indicator descriptions updated for CSA Z809-16.

Basis for the Target

The target addresses the need for forest planning staff and associated contractor principles to be competent in the results-based era of the Forest and Range Practices Act and the Forest Professionals of BC continuing competency/ education requirements. Moreover, the financial need of the business requires technological training of key workers to remain competitive. The variance is to account for training being reduced during times of market downturns.

Current Status & Results

Year	Average Person Days of Professional Training	Target Met (Y/N)	Variance Met (Y/N)
2023	5.8	Y	n/a
2022	6.4	Y	n/a
2021	5.4	Y	n/a
2020	5.4	Y	n/a
2019	9.8	Y	n/a

Performance and Interpretation

2023: This indicator was met for 2023 which is lower than 2022 due to having less members on staff. Planning staff and contractor principles participated in a wide range of training including Corporate Resource Management Standards (Big/Tall Tree, Bear Dens, Riparian, etc.). Staff Forest Professionals also report on a minimum annual target (30hrs) of Continuous Professional Development to the FPBC. This result is a conservative estimate of training as not all information is entered into the training database.

Strategies & Implementation

Tsawak-qin Forestry provides numerous training and skill development opportunities for employees and contractors under the existing Environmental Management System, Safety System and the Sustainable Forest Management Plan. In addition, there are some training courses that are legally required such as Transportation of Dangerous Goods, Blasting, Crew Boat Operator, First Aid, etc.

This target is intended to measure the average number of person days of completed training per year in the category of skill/professional development. Skill/professional development training include but is not limited to workshops such as the Coastal Silviculture Committee, Association of BC Forest Professionals (ABCFP), soil conservation, stream management, variable retention etc.). Employee training records are maintained in the Tsawak-qin Forestry Training Database.

Forecasts

It is anticipated that the target will generally be met as the profession continues to become more demanding technically, environmentally, and with improved safety initiatives that require enhanced levels of training. Tsawak-qin employees are fully engaged with WFP training.

Monitoring

The TFL Forester coordinates a report from the Training Database for total training hours by skill/professional development category.

Indicator 6.1.1: Participant Satisfaction with Public Process

Element: 6.1 Fair and Effective Decision Making <i>Demonstrate that the SFM public participation process is designed and functioning to the satisfaction of the participants and that there is general public awareness of the process and its progress.</i>				
Value	Objective	Indicator	Target	Variance
SFM Public participation process	SFM Public participation process works well	Level of participant satisfaction with the public participation process	The level of participant satisfaction as reported annually by the satisfaction survey is 3 or less.	A maximum of one consecutive survey with a satisfaction level of greater than 3.

History

Core Indicator under CSA Z809-08 (Indicator 6.4.1). Indicator number and title updated for CSA Z809-16.

Basis for the Target

A satisfaction survey of TPAG gives direct feedback to the participation process. A score of three or less provides evidence of a positive process. The variance is to account for controversial issues considered by participants or unforeseen circumstances (e.g. a shortage of financial resources to accommodate normal participation process during economic downturns).

Current Status & Results

Year	Satisfaction Survey Completed (Y/N)	Satisfaction Level	Target Met (Y/N)	Variance Met (Y/N)
2023	Yes	1.45	Y	n/a
2022	Yes	1.49	Y	n/a
2021	Yes	1.6	Y	n/a
2020	Yes	1.6	Y	n/a
2019	Yes	1.5	Y	n/a
2018	Yes	1.6	Y	n/a

Performance and Interpretation

2023: Of the 13 TPAG members, 10 completed the annual evaluation form, a 77% response rate. This is a similar response rate to previous years.

Members answered positively to questions related to their overall satisfaction with the TPAG group process, code of conduct, communication between meetings, responses to members, facilitator organization and neutrality and consensus decision making, presentation, meals, timing of meetings, and length of meetings.

Consider reminding staff that are presenting to utilize layman terms, rather than acronyms to help with member understanding of complicated topics.

Strategies & Implementation

A Satisfaction Survey is typically completed with the TPAG annually. The survey form was revised and moved to a digital format in 2021.

Feedback relating to specific presentations will be gathered following each presentation to help with the accuracy of survey results.

Forecasts

It is anticipated that the target will be met based on historical results that show a general level of satisfaction with the progress and communication between Tsawak-qin Forestry and TPAG.

Tsawak-qin Forestry strives to maintain or improve the score of satisfaction over time.

Monitoring

The TPAG Facilitator reports on the results of the Satisfaction Survey.