Forest Stewardship Plan Supporting Document

2022-2027

A&A Trading Ltd. and the Terrace Community Forest Limited Partnership

Forest License A16836 and Community Forest Agreement K1X
Coast Mountain Natural Resource District
FSP #630

Version 1.0 – Original for review and comment, April 14, 2021
Version 1.1 – Submitted for approval, July 28, 2021
Version 1.2 - Updated to address comments from the Kitselas Nation, March 15, 2022
Version 1.3 – Submitted for approval, June 2, 2022

Last revised on May 9, 2022

Contents

Supporting Information

1.0 Preamble

This Forest Stewardship Plan (FSP) Supporting Information document is meant to assist reviewers in the FSP approval process. Where necessary, rationales have been provided for results and strategies within the FSP that may require added clarification and background information, in order for FSP reviewers to fully understand the intent and direction proposed by the plan Holder(s).

2.0 Land Use Plans

2.1 Gitwangak Land Use Plan (GkLUP)

The Simgiget'm Gitwangak Society (SGS) representing the majority of the Gitxsan Wilps or Houses in the Gitxsan Lower Skeena Watershed/Gitwangak Lax'yip (territory), developed the Gitwangak Land Use Plan (GkLUP) during the years 2010 to 2015. Although, the GkLUP is a non-legal land use plan it is an expression of SGS's interests. Portions of FDU 1, managed by A&A Trading Ltd. overlap the GkLUP. The FSP contains results/strategies that address components of the GkLUP. For example, Kalum SRMP Order Objective 1 (seral stage strategy) and Kalum SRMP Order Objective 7 (patch size result) are in alignment with components of the GkLUP.

A&A Trading Ltd. (Terrace Community Forest does not operate in the Gitwangak Lax'yip) will make all reasonable efforts to follow the spatial land base zonation to the best of its ability when planning harvest units in the GkLUP area. All information sharing with the SGS that occurs as per the FSP Strategy 4.2.9, Objectives set by Government for Cultural Resources (FPPR Section 10), will include a summary on how any proposed harvesting and road building activities are consistent with the GkLUP.

3.0 Application

3.1 FSP Section 4.1.2 Kalum SRMP Order Objective 1 and Kalum SRMP Order Objective 7

At the landscape level, natural openings will develop over time. These openings would be of various sizes, depending on how they originated (fire, wind, landslides, and avalanches). A forest management approach taken in the FSP is to provide for a distribution of different sized openings over time; i.e. a temporal and spatial distribution of blocks.

Strategy Kalum SRMP Order Objective 1 and Kalum SRMP Order Objective 7 provide for a distribution of patch sizes and seral stages within landscape units in FDU 1 and FDU 2. Target patch size and seral stage distributions will be identified and the goal is to plan development

within operating areas so the distributions move towards target levels over time. They may not be achieved during the term of this FSP.

Cutblock design, including size, shape and pattern, will promote a range of small to medium sized, similarly aged forest patches on the landscape. Small scale disturbances will be mimicked through dispersed small clearcutting and clearcutting with WTRAs. Some larger patches will be cut and aggregated to form larger openings, particularly at lower elevations and on drier aspects where fire disturbance was an historic influence. In areas of dispersed harvesting, the size range of leave areas will approximate that of logged openings. Landforms, features and site sensitivity to development will be considered in cutblock design.

The following is provided as clarification on how the Holder(s) will mange cutblocks consistent with maintaining a range of forest seral stages by BEC variant for each landscape unit or portion of a landscape unit located within FDU 1 and FDU 2 consistent with the ranges specified in Table 1, Table 2 and Table 3 of the Kalum SRMP and a landscape pattern of patchiness that reflects the natural disturbance patterns as per Table 7 of the Kalum SRMP:

1. Cutblock size and distribution target levels for FDU 1 and FDU 2 emulate the historical temporal and spatial distribution of the Natural Disturbance Types (NDT) for the respective forest type based on the results of temporal and spatial analysis described in section 2 and 3 below.
2. Temporal: Conduct a seral stage analysis by landscape unit and NDT
    a) Determine a proportional representation of the landscape units within FDU 1 and FDU 2;
    b) Based on the targets and minimum amounts set in the Kalum SRMP Table 2 and Table 3 (April 2006) determine if there is a need for actions to address seral stage imbalances;
    c) If necessary, based on the results of subsection 2(a) and 2(b), prepare action plan(s) to move towards the seral stand distribution targets and implement;
    d) Prepare a summary of the allowable seral stages.
3. Spatial: Analyse patch size analysis by landscape unit and NDT
    a) Determine a proportional representation of existing patch sizes within FDU 1 and FDU 2;
    b) Determine the target patch size distribution for FDU 1 and FDU 2;
    c) Based on the target ranges stated in the Kalum SRMP Table 7 (April 2006), determine if there is a need for actions to address patch size imbalances;
    d) If necessary and subject to subsection 3(e), based on the results of subsection 3(a), 3(b) and 3(c), prepare action plan(s) to move towards the patch size stand distribution targets and implement;
    e) Prepare a summary of the allowable patch size distribution.

3.2 FSP Section 4.2.2 Objectives set by Government for Wildlife (FPPR Section 7): Grizzly Bears

The strategy 4.2.2 Objectives set by Government for Wildlife (FPPR Section 7) for Grizzly Bears limits harvesting of timber within grizzly bear Wildlife Habitat Areas established under the Order – Wildlife Habitat Area #6-287 for Grizzly Bear and ensures primary forest activities will maintain a range of forest seral stages that will results in a range of habitats available for grizzly bear including critical patch habitats, denning habitats and foraging habitats.

In addition, on rich and wetter sites planting prescriptions will encourage berry production and maintain natural levels of forage for grizzly Bears. Section 4 of this FSP Supporting Document describes Guidelines for Managing Stand Level Biodiversity (Appendix 2) that apply to FDU 1 and FDU 2. The guidelines are intended to provide special management direction around stand level biodiversity. Suitable grizzly bear forage habitat should be considered a "special habitat" and include herb dominated avalanche tracks with adjacent forest, non-forested fens, herbaceous riparian meadow/wetland complexes and seepage sites and skunk cabbage swamps species.

3.3 FSP Section 4.2.9 Objectives Set by Government for Cultural Resources (FPPR Section 10)

There are two Cultural Resources strategies included in the A&A and TCF FSP. The strategies are applicable to specific First Nation's territories within FDU 1 and FDU 2 as listed in the "Applicable to" section of the FSP strategies. Territory boundaries are as determined by the applicable First Nation. Territory boundaries are not included on the FSP FDU 1 or FDU 2 map.

Where required, a CMT Alternate Strategy Rationale will be completed using the CMT Alternate Strategy Rationale Form found Appendix 1 of this FSP Supporting Document. This form may be updated periodically as agreed to by the FSP Holder(s) and the Kitselas Nation.

4.0 Guidelines and Procedures

4.1 Guidelines for Managing Stand Level Biodiversity

The Guidelines for Managing Stand Level Biodiversity can be found in Appendix 2 of this supporting document and apply to FDU 1 and FDU 2. The guidelines are intended to provide special management direction around stand level biodiversity. The challenge of conserving biodiversity is to protect, over the long term, all species and genetic variants from serious declines or extinctions caused by human interaction. Through forest practices we can manipulate specific habitat elements and stand structure to help sustain biodiversity. There are at least six stand level components (attributes) that can contribute to maintaining forest biodiversity. These six components contribute together and to a lesser extent, singularly to the biological diversity at the forest stand level. They represent selected attributes that comprise the primary strategy for maintaining stand-level biodiversity and should be considered when

planning retention, whether the retention is aggregate (Wildlife Tree Retention Area, Riparian Management Areas, etc.) or dispersed (single trees).

Appendix

Appendix 1 – CMT Alternate Strategy Rationale Form

CMT Alternate Strategy Rationale Form

Area Information

Cutblock or Road ID: **Tenure:**

Date of Submission: **Operation:**

CMT Alternate Strategy Information

Applicable FSP Section(s) requiring an Alternate Strategy *(indicate FSP section # and option being applied for)***:**

Alternative Strategy Rationale(s)

Background Information *(background information on the CMT(s) of interest including cultural value, scientific value and the historical, educational and touristic value of the CMT(s))*:

Options Considered *(a description of all options considered including how each option impacts economic factors, environmental factors, social factors and cultural factors)*:

Accommodations *(what compensation, if any is offered)*:

Attachments *(Maps, assessments, photos, notes, etc.)***:**

FSP Holder Sign-off

Completed By:	**Signature:** **Date:**

Kitselas Nation Sign-off

Response to Proposed Alternative Strategy (*Kitselas considers cultural, scientific, historical, educational and tourism values for CMTs. CMT cultural values are determined by the Kitselas Band and may include factors such as the context of the feature, the rarity of the feature, proximity to Kitselas reserves, accessibility of the feature and whether the feature continues to potentially provide cultural resources*)**:**	
Determination:	
Completed By:	**Signature:** **Date:**

Instructions:
1) FSP Holder to complete a CMT Alternate Strategy Rational Form for applicable FSP sections, as required.
2) FSP Holder to provide a copy of the CMT Alternate Strategy Rational Form to the Kitselas Nation for review.
3) Kitseals Nation to complete the CMT Alternate Strategy Rational Form and send it back to the FSP Holder for further discussion if not in agreement with proposed Alternate Strategy Rationale.
4) Kitselas Nation to complete determination section with final agreed upon Alternate Strategy Rationale and sign-off. The FSP Holder will include the completed CMT Alternate Strategy Rational Form in all further related correspondence for tracking purposes. For example, Road Permit of Cutting Permit information sharing packages with approved alternate strategies will include a copy of the completed CMT Alternate Strategy Rational Form.

Appendix 2 – Guidelines for Managing Stand Level Biodiversity

Guidelines for Managing Stand Level Biodiversity

These stand level biodiversity guidelines apply to FDU 1 and FDU 2 of the A&A Trading Ltd. and Terrace Community Forest Forest Stewardship Plan and are intended to provide special management direction around stand level biodiversity. The challenge of conserving biodiversity is to protect, over the long term, all species and genetic variants from serious declines or extinctions caused by human interaction. Maintaining biodiversity requires planning over a landscape or watershed area as well as designing a system of protecting appropriate attributes at a stand level.

Stand Level Attributes

Through forest practices we can manipulate specific habitat elements and stand structure to help sustain biodiversity. There are at least six stand level components (attributes) that can contribute to maintaining forest biodiversity. These six components contribute together and to a lesser extent, singularly to the biological diversity at the forest stand level. They represent selected attributes that comprise the primary strategy for maintaining stand-level biodiversity and should be considered when planning retention, whether the retention is aggregate (Wildlife Tree Retention Area, Riparian Management Areas, etc.) or dispersed (single trees).

The six components are:

- Stand structure
- Wildlife trees
- Coarse woody debris
- Forest floor
- Special habitats and sites
- Tree and vegetation species composition

Stand Structure

Stand structure refers to the vertical and horizontal characteristics of the stand. Old growth stands are structurally complex. They contain shade-tolerant regenerating tree species, snags and coarse woody debris in various sizes and stages of decomposition, and have an uneven canopy composition with numerous gaps and a patchy understory. Vertical and horizontal stand structure provides a range of habitat components essential to support viable populations for a wide variety of species. Younger second growth stands tend to be more uniform with closed canopy and poor understory. They lack the essential vertical and horizontal complexity necessary for meeting stand level biodiversity requirements and contribute the least to structural diversity.

Horizontal structure can be described as the patchiness of the stand through openings in the canopy that provide for a diversity of foraging, nesting, and resting habitats for a diversity of species. Horizontal diversity is created by natural disturbance such as wind, disease, insects, and fires.

Vertical structure is the vegetative structural complexity of a forest stand. A structurally diverse stand has multiple canopy layers and diverse understory that provides habitat for species. The

upper canopy in a vertically complex stand acts to intercept and reduce snowfall accumulations on the forest floor which can be critical to species survival during winter months. A multi-layered canopy also moderates the internal stand temperatures and provides thermal cover. Understory vegetation provides foraging and nesting habitat for many species.

Where they exist, include old growth and second growth forests that exhibit good vertical and horizontal stand structure in stand level biodiversity patches (i.e. Wildlife Tree Retention Areas etc.).

Wildlife Trees

A wildlife tree is any standing dead or live tree with special characteristics that provide valuable habitat for the conservation or enhancement of wildlife. Large, live trees (preferably >50cm dbh) provide a future source of standing dead trees and coarse woody debris; foraging sites for many insectivorous birds (woodpeckers, nuthatches, chickadees); large, well-branched structures for platform nesting birds (eagles, osprey, herons, hawks, marbled murrelet); broad, deep canopies that intercept snow and modify microclimates; and substrates for mosses and lichens. Live and dead trees with thick and/or loose bark with fissures provide habitat for bats, some birds such as the Brown Creeper and some amphibians.

Standing dead and dying trees provide cavities for nests, roosts, and dens (especially in trees with extensive heart rot); perching sites; foraging sites for insectivorous birds, and support wood-dependent species including many lichens and fungi. Wildlife trees also play a vital role as a source of coarse woody debris.

Wildlife trees should be used as an “anchor” or focus for a retention patch (i.e. Wildlife Tree Retention Area). Different species select different wildlife trees based on tree species, size, and decay stage. A diversity of snags should be retained whenever possible. When available, maintain diversity of wildlife trees, including large snags (>50 cm dbh), tall snags (>8 m), deciduous snags, a range of species, size class, and conditions with older and more recent dead trees. Maintain large and veteran cedar snags favored for long term hollow trees and bear denning sites.

While retention areas can support greater diversity and amount of habitat elements, dispersed retention (i.e. single trees or small groups) complements retention areas by providing additional structural diversity and sources of course woody debris in the future stand. When available, retain dispersed large live trees (>50 cm dbh) to contribute to future provision of wildlife trees and course woody debris.

Coarse Woody Debris

Coarse woody debris (CWD) consists of non-merchantable logs (>30 cm diameter), merchantable logs specifically identified as CWD, stumps and large branches (>10 cm diameter). CWD provides habitat for plants, animals and insects, a source of nutrients for soil development, influences slope and stream stability and contributes to stand level structural diversity. Maintaining CWD after harvesting is a critical element of managing for stand level biodiversity. It is important to remember that piled CWD becomes habitat to many important stand level species and when burnt is detrimental to their survival. If sufficient CWD is not

available on-site, then consideration should be given to leaving large pieces of low value merchantable logs. Dead and down cedar is preferred as it will persist through several rotations. Planning and maintaining a sufficient supply of large pieces of CWD through several rotations across a combination of blocks is important. Dispersed CWD is preferred over large accumulations. Some small CWD piles dispersed in cutblocks may be appropriate to provide valuable habitat for some mammals, although the impacts to silviculture will need to be considered. When possible large non-merchantable CWD commonly yarded to the roadside or landings should be left on-site and not piled and burned.

The best future CWD is standing snags and individual leave trees. Planning for future CWD in managed stands is critical with larger pieces in particularly in short supply. Where safe and practicable to do so, retain veteran trees across the landscape to contribute to future CWD in second-growth stands. Options for maintaining CWD during operational phases should be highlighted in the pre-work package and discussed at the pre-work meeting.

Forest Floor

Forest floor includes humus, decomposing materials, and freshly deposited leaf litter that provides suitable habitat for a diverse community of invertebrates including nematodes, roundworms, and arthropods. These in turn play an important role as decomposers and as a food source for a variety of vertebrates such as shrews. The forest floor also supports a variety of saprophytic plants, bacteria, and fungi that aid in decomposition processes and nutrient cycling. Micorrhizae that forms an essential symbiotic relationship with roots of many plant species plays a role in drainage and erosion control and in vegetation composition.

The integrity of the forest floor can be maintained by minimizing soil disturbance and compaction, displacement of organic matter, and by limiting the amount of permanent and temporary site degradation.

Special Habitats

Special habitats are features such as denning sites, riparian areas, wetlands, gullies, seepage areas, patches of deciduous trees, treed rock outcrops, nesting trees, rare ecological communities, cliffs, cave entrances, and meadows, etc. Special habitats include habitats for sensitive specialist species and habitat that supports culturally important wildlife identified during information sharing with First Nations. When operating in the Kitselas First Nation's Territory special habitats and sites include mountain goat habitat, moose habitat, grizzly bear habitat and forests that provide visual screens from mainlines and forest service roads to reduce hunting pressures.

Special habitats are often microhabitats for wildlife and plants uniquely adapted to, or dependent on, these features. The integrity of special habitats needs to be adequately protected and can act as "anchors" for the placement of Wildlife Tree Retention Areas.

Tree and Vegetation Species Composition

Maintaining the occurrence and diversity of natural plant and tree species across the landscape is an important consideration during stand level biodiversity planning.

When designing retention patches, priority should be to include threatened and endangered ecological communities, rare plants, cultural and medicinal plants, and trees of cultural significance (e.g. culturally modified trees and monumental cedar).

The Conservation Data Center provides a listing of threatened and endangered ("red" and "blue" listed) ecological communities and provides direction for the protection of these ecosystems.

In the majority of cases, stand level requirements such as Riparian Management Areas and Wildlife Tree Retention Areas can be used to adequately manage and protect rare and endangered ecological communities and culturally important sites and features.

Size of Retention Areas / Wildlife Tree Patches

To adequately manage for stand level biodiversity, Wildlife Tree Retention Areas should be a minimum of 0.25 ha. in size, although some smaller patches are acceptable, and maintain some level of forest influence. Forest influence is the internal area of the patch at least 1 tree length (TL) from the edge of an opening.

If patches are 0.25 ha. or greater a spatial distribution of 4 TL can be maintained (Weyerhaeuser - based on 5 years of research by their Adaptive Management Working Group).

Dispersed retention and/or Wildlife Tree Retention Areas <0.25 ha must not be spaced more than 2 TL apart. (Weyerhaeuser - based on 5 years of research by their Adaptive Management Working Group)

Designate Wildlife Tree Retention Areas for a cutblock or cutblock aggregate consistent with the target percent for each Landscape Unit and BEC subzone listed in Table 6 of the Kalum SRMP (April 2006), and as follows:

Table 1 - Kalum SRMP Table 6

Landscape Unit	BEC Subzone	Target WTP retention[23] (%)
Nass River (K'alii Aksim Lisims) Kalum	ICHmc	7
Skeena River Kalum	CWHvm CWHws ICHmc MHmm	5 5 4 0
Beaver	CWHws MHmm	8 0.5
Clore	CWHws ESSFmk ESSFwv MHmm	6 3 1 3
Exstew	CWHws MHmm	6 3
Hawkesbury Island West	CWHvh MHwh	0 0
Hirsch	CWHvm CWHws	5 11

Location of Wildlife Tree Retention Areas (WTRA)

Where possible, include the WTRA within the gross block boundary if block is >10ha.

Establish WTRA around biologically rich “anchors” for forest ecosystems (i.e. mature deciduous trees, wetlands, seepage areas, smaller streams, large woody debris (>100 cm dbh), unusual and/or rare and sensitive populations of non-vascular plants, structurally diverse understory, rare ecological communities, cultural and medicinal plants, and other culturally important sites and features.

Consider all the stand level attributes mentioned above when establishing the location and content of a WTRA.

Consider the wind firmness of the WTRA (aggregate or dispersed) when establishing the location, although some blowdown is acceptable/encouraged.

If there are no specific biological features or anchors within the block boundary, look for features or anchors immediately adjacent to the block as a suitable location for the WTRA. WTRA placement should not be >500 m outside the harvest area boundary.

Use areas such are Riparian Management Areas, wildlife habitat features, cultural and medicinal plant sites, and features to the fullest extent possible to build WRTAs.

Where possible retain a mix of dispersed and aggregate retention for optimum biodiversity.