

Changes by GWTA & GWTA

MD Changes

SV Waiparous Changes

GHOST/WAIPAROUS ~~TRAIL~~TRAILS SYSTEM

RESOURCE MANAGEMENT PLAN

November ~~2012~~2016

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~~A great deal of time and commitment has gone into the review and redevelopment of the Ghost/Waiparous Recreation Lease REC 950011 Resource Master Plan in 2012 and it is important to acknowledge those who have volunteered their time and expertise to ensure that this document is a comprehensive guide to the management of this area. (The Back 40)~~

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1. ACKNOWLEDGEMENTS

A great deal of time and commitment has gone into the review and redevelopment of the Ghost Waiparous Recreation Lease 950011 Resource Master Plan in 2012 and it is important to acknowledge those who have volunteered their time and expertise to ensure that this document is a comprehensive guide to the management of this area.

The Resource Master Plan was created in partnership with the Summer Village of Waiparous (Waiparous), Municipal District of Bighorn (Bighorn), Alberta ~~Environment and Sustainable Resource Development (ESRD)~~ Agriculture and Forestry (AAF) and the Ghost Waiparous Trails Association (GWTA).

2. INTRODUCTION

2.1 Historical Background

The Back 40, as it is commonly known in the area, consists of 111 hectares (275 acres) of forested land in parts of the W1/2 and the SE ¼ of Section 12, Township 27, Range 7, W5M. This forest is north of two subdivisions, east of the Bar C Ranch and on top of the bank south of Waiparous Creek. The Back 40 is provincial crown land which is reserved for passive recreational use through a Recreation Lease (Rec. 950011). This lease has been issued jointly to the ~~MD of Bighorn and the~~ Summer Village of Waiparous and the MD of Bighorn. The intent of this recreation lease is to preserve this area in a natural state with the exception of some trail development ~~and~~, woodlot management, and wildfire mitigation activities. The purpose, as stipulated in the lease, is for hiking/cross country ski trails, viewing/resting locations and picnicking sites.

The Eau Claire Lumber Company harvested lumber in this area in the 1920's creating the Eau Claire and Lower Ridge Trails. After that, this land was used by hunters and woodcutters, and informally by ~~recreationalists~~ recreationalists ~~local residents~~ until the Summer Village of Waiparous and the Municipal District of Bighorn jointly secured the ~~present 21-year~~ lease on September 6, 1995.

This region is steeped in history; the First Nations considered it an important winter hunting ground and the Simpson and Palliser Expeditions of 1841 and 1858 respectively both mention the confluence of the Waiparous Creek and the Ghost River. Ranching has been taking place for more than 100 years and in the early 20th Century the area saw much logging activity by the historic Eau Claire Lumber Company followed by homesteading sometime after 1930. More recently, the region has seen a growth in habitation and popularity with the development of the cabin communities of Benchlands ~~and~~, Waiparous, and the Ghost River Subdivision, and building of the Forestry Trunk Road in the early 50's.

While the local community has enjoyed the area informally for decades, it was in the early 1990's that a group of area residents came together to work with Waiparous and Bighorn to secure a lease. The intent of that lease was to preserve the natural characteristics of the land and keep it for low impact non-motorized outdoor recreational activities (hiking/skiing trails, resting locations and picnicking sites) for future generations. In 1995 the two municipalities signed a 21-year recreation lease with the Province of Alberta which has since been renewed for an additional 25 years until 2041.

2.2 Purpose of Plan

As set out in the Lease Agreement, a resource management plan is required to address public use, forest protection~~and~~, woodlot management~~and the~~ implementation of the wildfire mitigation strategies plan.

The purpose of the Ghost/Waiparous Trails - Resource Management Plan (GWT-RMP) is to provide direction for the management and use of public resources within the lease area. A resource is defined as anything that society perceives as having value, including items such as land, wildlife, timber and minerals, as well as unique ecosystems and recreational opportunities. Generally, the plan maximizes benefits by specifying when, where and how resources and resource uses will be managed. The first GWT-RMP was completed in 1998 and has been updated in 2006, 2012 and 2016 to ensure that it remains current.

2.3 The Plan Area

The Ghost/Waiparous Trail Lease is located near Highway 40, approximately 23km north of the 1A Highway. Lease No. REC 950011 consists of lands legally described as:

Portion of SE 12-27-7-W5M - south of Waiparous Creek
Portion of NW 12-27-7-W5M - south of Waiparous Creek
SW 12-27-7-W5M - southwest of Waiparous Creek

~~Appendix A is a map of the region showing the lease area - removed.~~

~~Annex A is a Map of the region showing the lease area.~~ Back 40 current trail system.

~~Appendix B is a map of the current trail system.~~

Waiparous lies to the south-east of the Lease area; it is bordered to the south by the MD of Bighorn's Ghost River Subdivision and by the MD of Bighorn to the west. The north and west is bordered by crown land.

2.4 Management

The lease is held jointly by Waiparous and Bighorn. Management of the lease is set out in the Lease Agreement, and this Resource Management Plan.

As the Leaseholders, Waiparous and Bighorn have the responsibility of ensuring that all conditions of the Lease Agreement are adhered to; including those set-out under this Resource Management Plan. ESRD Alberta Agriculture and Forestry as the land manager, is responsible for ensuring that the approved purpose and management of the lease area as set out in the terms and conditions of the lease are adhered to by the Leaseholders.

The Ghost Waiparous Trails Association is a registered non-profit society representing area residents from ~~the~~ Bighorn and Waiparous whose mandate is to provide stewardship and support to the Lease Area. This relationship is set out in a Caretaker Agreement between Waiparous, Bighorn and the GWTA.

2.5 Plan Review

This plan will be subject to a detailed review every five years. Input will be requested from representatives of ESRD Alberta Agriculture and Forestry, Bighorn, Waiparous and the GWTA. ESRDAAF will approve all revisions to ensure changes are within the terms of and conditions of the lease agreement and current legislation.

3. PUBLIC USE

3.1 Recreation and the Natural Environment

Under the lease, low-impact non-motorized outdoor recreational activities (hiking/skiing trails, resting locations and picnicking sites) are the intended uses of the lease area. ~~Equestrian activities are not permitted in the lease area. As a result, equestrian activities are not permitted in the lease area.~~ Motorized vehicle use is not permitted in the lease area except under the following ~~three~~four conditions:

- As outlined in 3.2 Trails-~~__~~ for emergency and fire fighting vehicles to access Eau Claire Trail~~,~~
- As outlined in 5.1 Firewood Cutting-~~__~~ motorized vehicles may be used ~~by obtaining permission from Leaseholders and GWTA and~~ with a valid ESRD issued Temporary Field Authorization (TFA)-TM66 containing the special provisions associated with firewood collection in the lease area,
- As outlined in 6.0 Trail Maintenance-~~__~~ during planned FireSmart and trail maintenance activities, motorized vehicles may be used if a valid~~,~~ESRD Forestry issued TFA exists~~,~~ and
- If a limited mobility user has been issued a special permit, the permitted motorized vehicle may be used on Eau Claire Trail only. The motorized vehicle may not be taken on any other trail other than Eau Claire, and the user must access Eau Claire via the trailhead at the entrance to the lease area.

Even passive recreational activities can have significant negative impacts on an area if not managed. The underlying principle in managing ~~uses~~access is to protect the natural environment. Rare, endangered or threatened species and fragile or limited natural communities or features need to be protected from significant impact. For this reason, this Resource Management Plan sets parameters on use and development.

3.2. Trails

Trails will be designed to minimal standards, to accommodate passive recreation, while keeping the environment as natural as possible. Generally, the trails will not:

- be grubbed~~,~~
- have introduced ground material other than wood chips~~,~~
- have a clearance wider than two meters with a one metere tread~~,~~ and
- be cleared any higher than 2.5 meteres.

Exceptions may be made and each trail will be reviewed individually.

Eau Claire ~~Trail is one exception~~and Cut Line Trails are the only exceptions and will be maintained to the minimal standard required to allow emergency/fire

fighting vehicles access to the North West corner and Western boundary of the lease.

Trails are planned and constructed with consideration for usage, topography, variety, the natural environment, and adjacent landowners. Users will be encouraged to stay on designated trails. In areas where wet conditions or extensive deterioration occurs, trail closures, limitations or modifications may be necessary to reduce impact.

3.3 Access and Parking

Access to the Lease Area will be through four public locations:

- The main access off Spruce Lane in Waiparous that has a small day use parking area located to the south of the lease in Bighorn, and~~+~~
- Three secondary (non-motorized) accesses located in the first, second and third phases~~s~~ of the Ghost River Country Residential Subdivision.

3.4 Signage

In order to preserve the natural setting, signage will be kept to a minimum,
~~h~~However, it is necessary for users to be aware of policies regarding usage and to be able to navigate the trail system.

Main Access Signage

A large sign will be located at the main entrance to the trail system. This sign will be prominently placed at the trailhead and will include a code of conduct, contacts, trail system map and bulletin board to post notices to other users.

Secondary Access Signage

Small signs will be located at the secondary entrances to the trail system. These signs will indicate uses that are and are not permitted and contacts.

Trail Signage

Each trail will have a sign post naming the trail and indicating the trail's distance. A directional arrow will indicate the way back to the Eau Claire Trail.

3.5 Day Use

This Lease Area is for day use only. Camping and campfires are not permitted. Group activities which may result in degradation are not permitted. Users will be encouraged to make use of designated viewpoints and rest spots where benches are provided. Users are expected to pack out whatever they pack in and dispose of it off-site in a regulated manner. This includes cigarette butts~~-~~ and pet excrement. Garbage receptacles are not provided.

3.6 Human Impacts

Users of the Lease Area are expected to act with respect for other users, and adjacent landowners and leaseholders. Permission must be obtained from adjacent property owners to access their land.

3.7 Dog Control

In order to minimize the impact on the natural environment, wildlife and the potential for conflict, users of the lease will be expected to adhere to the following guidelines which are also in keeping with Alberta Parks Policy and the Summer Village of Waiparous dog control bylaw:

- Dogs must be ~~within sight~~ on leash and under the care and control of the owner at all times;
 - ~~When walking on trails that border private land, dogs must be leashed;~~
 - Owners are responsible for their animal's ~~behavior~~ behaviour and actions ~~and must immediately leash their dog at the first sign of aggression and/or inappropriate behavior;~~
 - Dog owners must immediately remove defecation ~~immediately;~~ and
 - ~~Owners who are using~~ Dogs off leash will not be tolerated within the lease area.
 - ~~trails~~
- ~~Owners who are using the trails and in turn allow their dog to pursue wildlife may incur a monetary fine.~~

3.8 Geocaching

Geocaching* is permitted, with written authorization, in an area bounded by Eau Claire and Boundary Trails. Geocaching is prohibited in all other areas of the Lease.

*Geocaching is an outdoor recreational activity, in which participants use a Global Positioning System (GPS) receiver or mobile device and ~~in turn allow~~ other navigational techniques to hide and seek containers, called "geocaches" or "caches", anywhere in the world.

A typical cache is a small waterproof container containing a logbook (with a pen or pencil). The geocacher enters the date they found it and signs it with their ~~dog to pursue wildlife may~~ ~~incur a monetary fine~~ established code name. After signing the log, the cache must be placed back exactly where the person found it. Larger containers such as plastic storage containers (Tupperware or similar) or ammunition boxes can also contain items for trading, such as toys or trinkets, usually of more sentimental worth than financial. Geocaching shares many aspects with benchmarking, trigpointing, orienteering, treasure-hunting, letterboxing, and waymarking.

3.89 Code of Conduct

Trail Information and Contacts shall be contained on trail signage and in trail brochure.

- No hunting,
- Respect surroundings,
- Respect other users,
- Keep dogs leashed under owners care, and control at all times,
- Pick up and carry out all dog defecation,
- ~~Observe on leash areas~~
- ~~No horses or~~ Motorized vehicles are not permitted unless authorized,
- ~~Observe on leash areas~~
- No horses are or motorized vehicles permitted,
- Pack in - pack out,

- Report any hazards or damage to trail system or area.
- Obey signs.
- Stay on trails.
- Leave no trace.
- No smoking in lease area.
- Avoid disturbing cross country ski tracks.
- Do not remove or disturb barriers placed to re-establish natural areas or bar access to potential undercut areas, and
- ~~Trail Information and Contacts shall be contained on trail signage and in trail brochure.~~

3.910 Wildlife Encounters

The Leaseholders and the Trail Management group will promote and encourage users on the lease to follow ~~certain~~ safety practices in regards to chance encounters with large predators. **Bear and Cougar sightings are to be reported to the local Fish & Wildlife Office, (403) 932-2388 Cochrane and Back 40 users are encouraged to leave a notice of a sighting on the main entrance Kiosk notice board.**

Bears:

The best way to avoid conflict with bears is to prevent it. This can be done by:

- Watching for fresh bear sign (scat or bear tracks) on the trail or near possible picnic sites.
- Making plenty of noise on the trail, especially on blind curves, in dense vegetation or areas with limited vision.
- Leaving an area immediately and finding an alternative route if you come upon a dead animal carcass or a bear cub, a sow will not be far away.
- Keeping dogs under control - dogs can lead an angry bear back to you.
- Travelling with others in bear country.
- Looking for signs of agitation and aggression - When a bear is standing on its hind legs, it is usually just trying to get a better look and smell of you. When a bear is upset it may have its ears back- it may lower its head and swing it from side to side- it may paw at the ground- it may make huffing or woofing noises- it may snap its teeth- or not show any signs at all, and just drop and charge with no warning.
- Backing away slowly, speaking in a calming, monotone voice - show the bear that you are being submissive and want to get out of its territory. Do not turn your back and always have your bear deterrent pepper spray ready.
- Spraying bear deterrent pepper spray if the bear comes at you, aiming for the bear's face or spraying a fog out that the bear has to run through to get to you.

Cougars:

Remember, cougars are very different than bears. Cougars do not bluff charge. And playing dead is never recommended in a cougar attack.

- Don't run. Cougars are a powerful predator. Running may trigger an attack.
- Face the cougar and retreat slowly. Keep direct eye contact with the cougar while slowly retreating towards safety.

- Look larger than life. Raising arms above the head make an individual look larger than normal. This may help to intimidate the cougar. Throw rocks and yell. Aggression will often scare it off.
- Pick up small children. Cougars will often select smaller prey, such as children or pets. Pick children up to discourage the attack.

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- Pick up small children. Cougars will often select smaller prey, such as children or pets. Pick children up to discourage the attack.

Sightings are to be reported to the local Fish & Wildlife Office, (403) 932-2388 Cochrane.

3.1011. Enforcement

MD of Bighorn and Village of Waiparous are responsible for ensuring that the terms and conditions of use as set out in the Lease and this Resource Management Plan are adhered to by users. Any contravention of these terms and conditions that are not remedied by the Leaseholders may be referred to [ESRDAAF](#) or the RCMP for possible enforcement.

The Leaseholders and the Trail Management group will work with area residents and users to educate them regarding the terms and conditions of the Lease and

the Resource Management Plan. Actions may be taken when communication and education fail to change behavior.

4. FOREST PROTECTION

The Recreation Lease is located within the Forest Protection Area and therefore activities associated with it must comply with the Forest and Prairie Protection Act and its Regulations. ~~In 2002, a reconnaissance timber inventory and woodlot management plan was undertaken by Trees Consulting Inc. Much of that plan has been incorporated and the reconnaissance timber inventory is included as appendices~~ In 2015, a Wildfire Mitigation Strategies Assessment and Operation Planning for the Ghost/Waiparous Recreation Lease REC 950011 (The Back 40) was completed and depicts a complete vegetation inventory and provides detailed wildfire mitigation strategies for the lease area.

4.1 Debris Disposal

Wood debris resulting from approved trail building, and woodlot management shall be disposed in a manner to be approved by Alberta ~~Environment and Sustainable Resource Development Agriculture and Forestry~~. The recommended practice is to spread the wood debris on the forest floor. This should be done as flat as possible to the floor to create opportunity for decomposing.

4.2 Recreation Campfires and Smoking

Campfires and Smoking are not permitted within the Recreational Lease.

4.3 Hazard/Fuel Modification

The removal of hazard fuel accumulation must be undertaken as required under the Forest and Prairie Protection Act and will be encouraged through firewood cutting. (See Section 5 Woodlot Management)

Fuel modification between the Lease Area and deeded land is encouraged. "Fire Smart" principles are to be applied to the Lease Area to the degree in which Alberta ~~Environment and Sustainable Resource Development Agriculture and Forestry~~, Bighorn and Waiparous can agree. FireSmart activities are limited to prescriptions identified in the Back 40 Wildfire Mitigation Plan and as identified in approved fuel modification workplans. ~~Activities might include pruning, spacing and cleaning up the forest floor from combustible debris.~~

~~Efforts should~~will be made to discourage piles of debris and to encourage the removal of ladder fuel (trees that lean on each other and provide a means for a forest floor fire to rise to the tree tops).

4.4 Forest Health

The mountain pine beetle is a major threat to forested areas to the west of the Lease Area. Education materials on the identification of the presence of the beetle will be made available to all lease users. All users will be encouraged to monitor the situation and report any infestation.

Dwarf mistletoe is a problem in the lodgepole pine and has infected the majority of the lease. Natural forest regeneration will occur.

Where safety issues are recognized, cutting or pruning will be undertaken.

Many of the deciduous trees have conks on them. Where safety issues are recognized, cutting or pruning will be undertaken.

Future safety setbacks from human use areas may be considered.

5. WOODLOT MANAGEMENT

The management of the Lease Area's natural resources is critical to the long-term health of the forest. In ~~2002, an~~2015, a Wildfire Mitigation Strategies Assessment and Operation Planning for the Ghost/Waiparous Recreation Lease REC 950011 (The Back 40) was completed and depicts a complete vegetation inventory ~~of and provides detailed wildfire mitigation strategies for the lease area was completed by Trees Consulting Inc. (Appendix A).~~ This information provides the foundation for making planning decisions regarding forest protection, wildfire prevention and woodlot management. ~~The cruise summary, along with the strata and plot summaries are included as section 5.5.1. The detailed forest inventory compilation tables are included as an appendix to this plan.~~

5.1 Firewood Cutting

In order to reduce the hazard of fire in the Lease Area, a limited wood cutting program will be allowed:

- Residents of Benchlands, Summer Village of Waiparous, Ghost River Subdivision and adjacent residents are allowed to cut 5m3 (~~23~~ cords) of firewood per year within the lease area with a valid ~~TM-66 Permit~~ TM66 (Appendix ~~C~~ B),
- ~~The TM66 obtained for the purpose of cutting of firewood from the lease may be conducted throughout the Lease Area, but will identify the~~ priority areas ~~will be for firewood collection~~ established to combat disease and/or fuel build-up. ~~Areas experiencing,~~
- ~~The TM66 will also include rules and restrictions associated with woodcutting in the lease area, including restricted areas due to excessive~~ wood cutting may be restricted, and
- Woodcutting will be permitted all year, but may be restricted from time to time due to factors such as weather conditions or trail closures.

Motorized vehicle use for woodcutting purposes is allowed with ~~approval from a valid TM66 containing the Leaseholders special provisions associated with firewood collection in the lease area.~~ Motorized vehicles may only be taken on Eau Claire and ~~CWTACutline.~~ The motorized vehicle may not be taken on any other trails, and ~~with a valid Temporary Field Authorization issued by Alberta Environment users must access Eau Claire and Sustainable Resource Development Cutline via the trailhead at the entrance to the lease area.~~

Each year the woodlot management operations will be reviewed by ~~ESRD- Forest~~ Forestry Management, to assess the volume of firewood removed, its impact upon the intended use of the lease and the continuation of the program.

5.2 Christmas Tree Cutting and Transplanting (Removal of Native Seedlings)

~~During the inventory, it was concluded that~~ There are no substantial Christmas tree areas in the Lease Area. Also, the most suitable Christmas trees are white spruce understory trees, which are extremely valuable to fill in the forest canopy under the dying lodgepole pine and aspen. For these reasons, no cutting

of Christmas trees is allowed in the Lease Area. In addition, no transplanting of native seedlings will be permitted at this time.

5.3 Reforestation

Within the Lease Area natural regeneration is occurring in most areas. Active reforestation should be undertaken if specific areas are deemed under stocked and ~~ESRDAAF~~, Bighorn and Waiparous agree to reforest the area.

5.4 Wildlife Guidelines

Wildlife is a major attraction for many people utilizing the Lease Area. Although the wildlife adapts well to the low impact use of the Lease Area, there are some guidelines to follow and consider for the future:

- Harvest trees selectively or in select groups,
- Develop border transition areas by cutting trees and encouraging shrubs, grasses and legumes,
- Maintain wildlife travel corridors between forest and Waiparous Creek,
- Leave 100 meter buffer zones when harvesting adjacent to creek,
- Maintain sufficient clearings (recommend 1-2 acre clear cuts, especially in high firewood cutting areas),
- When harvesting or doing improvement cuts, leave food producing trees, den trees, and roost trees,
- When planting new stands, include trees that produce food and cover. Avoid large stands of only one tree species,
- Use woody debris to build brush piles near forest edge, and ~~and~~
- Encourage variety in the Lease Area; diverse vegetation means diverse wildlife.

5.1 Forestry Inventory

~~To determine some of the base information for making good decisions in the Lease Area, a low intensity, reconnaissance inventory was completed. This timber cruise was designed to cover most of the lease area and the plots were placed at a rate of one per every five hectares (23 plots for 111 hectares). The information gathered at the plot locations included the following:~~

- ~~Timber Type,~~
- ~~Tree Species,~~
- ~~Tree Diameter @ Breast Height (DBH) (centimeters),~~
- ~~Tree Height (Meters),~~
- ~~Tree Crown Class,~~
- ~~Tree Cull Suspect Class and Site Information,~~
- ~~Tree Defect Type,~~
- ~~Dwarf Mistletoe Rating (DMR),~~
- ~~Sample Tree Ages and Growth Over Last 20 Years,~~
- ~~Small Tree Tally,~~
- ~~General Stand Assessment,~~
- ~~Wildlife Comments,~~
- ~~Firewood and/or Transplant Tree Opportunities and,~~
- ~~Insect or Disease Code (See Legend and description in Appendix J).~~

All of the above information is used to determine things such as tree volumes, forest density or spacing, tree conditions or forest health, reforestation needs, operability of specific areas and the need to lower potential fire hazards.

5.1.1—Cruise Summary

To maximize the effectiveness of the random sampling, the Lease Area was split into four separate timber types (strata). These were sampled from one to fourteen (14) plots per strata, depending on strata size.

Utilizing the data gathered, some overall survey summaries were made:

- 1) Total Area of Lease = 111.1 ha (274.4 acres);
- 2) Total Conifer Volume (15/11cm standard) = 25,034 m³;
- 3) Total Deciduous Volume (15/11cm standard) = 826 m³
- 4) Average Age of Merchantable Conifer Trees = 115 years;
- 5) Average Height of Merchantable Conifer Trees = 18.1 meters (55 feet);
- 6) Christmas Tree Availability = Not a feasible area for Christmas Trees;
- 7) **Firewood Availability = 5750 m³ (2390 cords), (Could support 50 families @ 2 cords per family for 24 years)** and;
- 8) General Comments = Patches of the forest are dying off due to Dwarf Mistletoe and the succession of the forest (spruce trees are overtaking the pine dominant forest). In general, the pine trees are in poor to moderate condition.

5.1.2—Strata and Plot Summaries

- i)——— Strata # 159 (Plots 11, 15, 17, 20, 21, 22, 23)

This area consists of 34.2 ha (85 acres) and is located in the SW and west side of the lease. The area has some heavy grass and shrub areas (mostly in the open areas) and a small patch of moderate blow down. The east side of the stand contains a heavy infestation of dwarf mistletoe (near plot 11).

Timber Type = C18P17Sw3 / B12P15Sw5

(Quite dense over story averaging 18 meters in height with 70% of the species being lodgepole pine and 30% being white spruce. The understory is less dense, averaging 12 meters in height with 50% of the trees being lodgepole pine and 50% white spruce).

Average Age = 123 years Growth in the last 1–10 years = 0.7 cm

————— Growth in the last 11–20 years = 0.8 cm

Average Trees Per m³ = 3.7

~~Average Height = 17.8 m (58 feet)~~

~~Average Diameter @ Breast Height (DBH) = 24.2 cm (9.5 inches)~~

~~Conifer Volume per Hectare = 290 m³/ha (65 m³/ha = Dead Standing)~~

~~Deciduous Volume per Hectare = 4 m³/ha~~

~~Understory Trees per Hectare = 1443 stems/ha (49,351 total)~~

~~Regeneration per Hectare = 2400 stems/ha (82,080 total) (Potential transplant trees)~~

~~Firewood = Standing dead pine trees represent 65 m³/ha or 2223 m³ (924 cords).~~

~~This relates to approximately 300 trees per hectare or 10,260 trees.~~

~~Total merchantable volume (15/11 cm utilization)~~

~~Live Conifer = 225.3 m³/ha x 34.2 ha = 7705 m³~~

~~Live Deciduous = 3.8 m³/ha x 34.2 ha = 130 m³~~

~~Average Merchantable Stem Spacing (Conifer Only) = 3.1 meters~~

~~ii) — Strata # 160 (Plots 14, 19)~~

~~This area consists of 16.6 ha (41 acres and is located in the NW corner of the lease. There are heavy concentrations of standing dead lodgepole pine firewood. Most of the forest contains dense grass cover. The east side contains some dwarf mistletoe infestation.~~

~~Timber Type = B19Pl8Sw1Aw1 / A11Pl6Sw3Aw1~~

~~(Moderately dense over story averaging 19 meters in height with 80% being lodgepole pine, 10% white spruce and 10% trembling aspen. The understory is scattered and averages 11 meters tall. Its species consist of 60% lodgepole pine, 30% white spruce and 10% trembling aspen).~~

~~Average Age = 114 years — Growth in last 1-10 years = 0.5 cm~~

~~————— Growth in last 11-20 years = 0.8 cm~~

~~Average Trees per m³ = 3.9~~

~~Average Height = 18.2 m (60 feet)~~

~~Average DBH = 24.6 cm (9.7 inches)~~

~~Conifer Volume Per Hectare = 192 m³/ha (98 m³/ha = Dead Standing)~~

~~Deciduous Volume Per Hectare = Nil~~

~~Understory Trees Per Hectare = 1750 stems/ha (29,050 total)~~

~~Regeneration Per Hectare = 950 stems/ha (15,770 total) (Potential transplant trees)~~

Firewood = Standing dead pine trees represent 98 m³/ha or 1627 m³ (676 cords).

This relates to approximately 250 trees/ha or 4150 trees.

Total Merchantable Volume (15/11 cm Utilization)

—— Live Conifer = 94.2 m³/ha x 16.6 ha = 1564 m³

—— Live Deciduous = Nil

Average Merchantable Stem Spacing (Conifer Only) = 3.6 meters

iii) —— Strata # 167 (Plots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 16, 18)

This area consists of 54.3 hectares (134 acres) and consists of the whole east end of the lease, plus a large portion of the central and north areas. The area is mainly covered with a pine/spruce forest. However, there is a strip of aspen forest (approximately 50m wide) running east/west which divides the stand. There is a patch of blow down in the northwest end of this stand (about 2 ha). Most of the pine in this stand contains moderate to heavy dwarf mistletoe damage, resulting in up to 35% standing dead stems. The southwest part of this stand contains heavy grass on the forest floor.

Timber Type = C20Pl5Sw4Aw1 / A13Sw7Pl2Aw1

(Quite dense over story averaging 20 meters in height with a good mixture of lodgepole pine and white spruce along with 10% trembling aspen. There is a scattered understory averaging 13 meters in height with 70% of it consisting of white spruce, 20% lodgepole pine and 10% trembling aspen. This stand has a high variance, where it ranges from dominant spruce to pine and even dominant aspen in a couple of small areas).

Average Age = 109 years Growth in last 1-10 years = 1.2 cm

————— Growth in last 11-20 years = 1.2 cm

Average Trees per m³ = 4.0

Average Height = 18.3 meters (60 feet)

Average DBH = 26.3 cm (10.4 inches)

Conifer Volume per Hectare = 217 m³/ha (35 m³/ha = Dead Standing)

Deciduous Volume per Hectare = 13 m³/ha

Understory Trees per Hectare = 818 stems/ha (44,417 total)

Regeneration per Hectare = 1593 stems/ha (86,500 total) (Potential transplant trees)

~~Firewood = Standing dead pine trees represent 35 m³/ha or 1900 m³ (790 cords).~~

~~— This relates to approximately 164 trees per hectare or 8905 trees.~~

~~Total Merchantable Volume (15/11 cm Utilization)~~

~~— Live Conifer = 182 m³/ha x 54.3 ha = 9883 m³~~

~~— Live Deciduous = 13 m³/ha x 54.3 ha = 706 m³~~

~~Average Merchantable Stem Spacing (Conifer Only) = 3.4 meters~~

6. TRAIL MAINTENANCE

Annually, the GWTA will set-out a plan for the ongoing maintenance of trails and other structures. This plan will be presented to the Leaseholders for review prior to undertaking.

Priority areas for fire smarting within the Lease Area will be determined ~~annually~~ jointly by ~~ESRD~~ Waiparous, MD Bighorn and AAF-Forest Management.

The Leaseholders may request Temporary Field Authorizations (TFA) for GWTA to allow motorized vehicles in the Lease Area to facilitate fire smarting and trail maintenance activities.

Only those participating in the planned fire smarting and/or trail maintenance activities may use motorized vehicles during the TFA period, and must abide by all TFA terms and conditions.

Only those with a valid TM 66 Permit may remove for personal use any wood harvested during the firesmarting and trail maintenance activities.

7. COMMITMENT OF RESOURCES AND COMMUNICATION

7.1 Resources

Bighorn and Waiparous will assist with providing the means to manage the Lease Area to the extent indicated in this Resource Management Plan. This could include financial and manpower resources.

7.2 Communication

Bighorn and Waiparous will assist in the provision of information to new residents (including renters) outlining the permitted uses of the Lease Area within 3 months of arrival to the area.

8. AGREEMENT TO ADOPT

The parties to this document (being Bighorn, Waiparous and ~~ESRD~~ AAF) agree to adopt the ~~November~~ ~~October~~ ~~2012~~ October 2016 Ghost/Waiparous Trail System - Resource Management Plan.

1. This agreement shall be in effect from ~~January~~ ~~October~~ 1, ~~2013~~ 2016 until September 30, ~~2016~~ 2021 at which time it may be renewed with the mutual consent ~~of the~~ all three parties.

2. This agreement upon signature shall nullify any previous agreement.

3. This agreement may be terminated by any party with thirty (30) days notice in writing of the intention to do so.

4. The Agreement may be amended at any time by consent of all parties, and in such cases the change shall be duly recorded in writing and signed by all three parties.

5. All formal communication shall be in writing, and shall be delivered by fax and mail or by hand to the parties at these addresses:

Summer Village of Waiparous
Box 19554 RPO South Cranston
Calgary, AB T3M 0N5

The Municipal District of Bighorn No. 8
#2 Heart Mountain Drive
P.O. Box 310
Exshaw, AB T0L 2C0

Alberta ~~Environment~~Agriculture and ~~Sustainable Resource Development~~Forestry
8660 Bearspaw Dam Road NW
Calgary, AB T3L 1S4

IN WITNESS WHEREOF the parties to the agreement have hereunto set their hands and

seals this ____ day of _____, ~~2013~~2016.

MUNICIPAL DISTRICT OF BIGHORN NO. 8

REEVE

MUNICIPAL SECRETARY

SUMMER VILLAGE OF WAIPAROUS

PER:

PER:

Accepted by ALBERTA ~~ENVIRONMENT AND SUSTAINABLE RESOURCE~~
~~DEVELOPMENT~~AGRICULTURE & FORESTRY

PER:

DATE:

Appendix A - Wildfire Mitigation Strategies Assessment and Operation Planning
for Ghost/Waiparous Recreation Lease REC 950011 (The Back 40) 1

Annex B - TM66 - firewood cutting conditions (to be updated as required and submitted to Agriculture and Forestry)


GWTA Conditions for Firewood Cutting

September, 2014









- All Back 40 access restrictions apply when going to cut firewood. **Vehicle / ATV / UTV traffic restricted to Eau Claire and Seismic Trail only and accessed through Spruce Lane.** Please stay off of the trails during wet or muddy conditions to avoid any rutting. Also, please stay off if there is sufficient snow for cross country skiing; so as to not wreck any potential ski conditions.
- You are encouraged to join the Woodlot Days organized by the Ghost Waiparous Trails Association (GWTA) in the fall to cut firewood. At that time, there is a focused effort on trail maintenance and FireSmarting the Back 40.
- Preferred cutting areas are noted on the attached map. Please concentrate your cutting in these areas as much as possible. This is a priority area that is being cleaned up to reduce the fire hazard. The area is focused on the west boundary of the lease and is buffered on the east by the Cutline and Boundary Trails. The recommended area stays between the fence and Boundary Trail as far east as the Millennium Trail.
- No cutting of green trees or any Douglas Fir, Limber Pine or Whitebark Pine trees. **Limber and Whitebark Pine trees are listed as ENDANGERED under the Alberta Wildlife Act.** A few Douglas Fir have been noted in the Back 40. Limber and Whitebark Pine have not been noted, but, are not to be removed or damaged, if found. Whitebark and Limber Pine can be identified by examining the needles. Both species have needles in clusters of five (5) and are easily distinguished from Lodgepole Pine, which have needles in clusters of two (2).
- If possible, cut stumps flush with the ground. The maximum height of any stump is 30 cms, cut level with the ground.
- Only Dead Standing or Wind fallen trees may be cut (no live / green trees).
- The tree is to be fully utilized, if possible. At minimum, take the stem to a 5cm (2") top.
- All tops and limbs not taken for your use must be lopped and scattered over the forest floor. This means no accumulation of woody debris (no piles) and no woody debris left on the trails.

Ghost/Waiparous Trails Association

Legend

 Recommended Firewood Area

Recreation Trails

-  Path
-  Improved Walking Trails
-  Truck/ATV Trails
-  Viewpoint
-  Spring
-  Bench
-  Gate
-  Trail Sign
-  Parking Lot

Trees Consulting Inc. May 31/0

