Laguna Seca Land

Public Management Plan Summary

Laguna Seca Land (LSL) is a duly registered Limited Liability Company incorporated in the state of Delaware in the United States on 27th November, 2012. LSL was declared and subscribed at Belmopan, Cayo District the 19th of December 2012, as a foreign Corporation in accordance with the requirements of the Companies Ordinance, Chapter 206 of the laws of Belize, revised Edition 1980.

Laguna Seca Land is the owner of 42,950 (106,087) acres hectares of land in the Orange Walk District of Belize that is presently managed under a sustained timber management regime. Laguna Seca Land was once part of the Belize Estate Company's (BEC) forest lands and therefore has a long history of logging. It was acquired from Gallon Jug Agroindustry in 2012 by an investment fund managed by The Forestland Group, LLC (TFG). Headquartered in Chapel Hill, North Carolina

Laguna Seca Land operates its timber management enterprise under a long term private forest permit issued by the Belize Forest Department and duly approved by the Minister responsible for forestry on 14/1/15. The long term private forest permit is valid for a period of 40 years. The production base of the company consists solely of this license area.

Laguna Seca Land is currently one of the top four major integrated forestry and forest products processing companies in Belize, working mainly with the production of logs and lumber of mahogany and other secondary hardwood species for the local and export market. The Forestland Group, LLC (TFG) has three objectives for Forestland Operations Management:

- Laguna Seca Land is to be managed in such a manner that will provide the highest rate of return while being consistent with the maintenance and enhancement of the overall biological productivity.

- If or when Laguna Seca Land is sold, the overall condition of forest is equal or superior to that at the time of acquisition.
- The Laguna Seca Land property is managed in accordance with the Forest Stewardship Council (FSC) Principles and Criteria.

Laguna Seca Land has a forestry crew that carries out all its field operations related to sustained forest management (SFM). The company continues to invest considerable resources in ensuring that the knowledge and skills of its SFM field crew are of the highest standards in its capacity to implement all the required forest management activities. It has some logging capacity, but contracts out most, if not all, of its logging. Nevertheless, Laguna Seca Land ensures that its contractors are knowledgeable about relevant reduced impact logging standards including Belize's Draft Code of Practice for Timber Harvesting for Long Term Licensees and ensures that these standards are applied in conformity with the conditions of its private long term private forest permit. Laguna Seca Land has an outsourcing agreement with Gallon Jug Agroindustry for sawing its logs into lumber. The company's offices and sawmill are located at mile 11/2 on the Spanish Lookout Road at Iguana Creek in the Cayo District. The company currently employs over 87 workers.

Laguna Seca Land has an extensive network of forest roads. Most of the major forest roads have been used continuously since their construction during the heydays of the BEC logging era but many of the secondary roads have been abandoned and are now overgrown and in varying states of disrepair. Roading operations which include the construction of new roads and the maintenance and/or improvement of existing roads are a critical component of Laguna Seca Land's annual plan of operations. Therefore, the planning, construction, and maintenance of the road network under the present forest management plan and the application of adequate road construction standards are essential to minimizing both the impact and the cost of forest roads in order to ensure the ecological integrity of the forest and a viable forestry enterprise.

INVENTORY

In 2012 Laguna Seca Land carried out a property wide forest management level inventory to update timber volume estimates for valuation and forest management planning 5 years after the last forest management level inventory as well as to provide an assessment of the storm damage caused by Hurricane Richard (2010) to the timber resource. A systematic sampling design was employed in which a total of 128 plots spaced at 1 km. intervals were installed; each plot being 0.5 ha in size, which translates to an actual sample intensity of 0.19 % achieved for large trees ≥25cm dbh. The plot dimensions are 250 metres x 20 metres comprised of ten, 50 x 10 metre subplots, and each 0.05 ha in size. One of these subplots was further divided into two 25 x 10 metre miniplots, each 0.025 ha in size. The plot design involved a nested approach for sampling trees of different sizes.

Approximately 81% (34,509. ha) of the Laguna Seca forest area is classified as productive forest. The remainder is classified as high conservation value forest. The basic management subdivision of the production forest in Laguna Seca is the compartment which has been standardized into average blocks of 100 ha based on the UTM grid (although some blocks on the perimeter of the production forest zone may have slightly less or more than 100 ha in extent).

There are approximately 277 future logging compartments comprising the main felling series covering a forest area of 27,770 ha. Expected present yield in boardfeet from Mahogany trees 60 to 89.9 cm DBH has been assessed for each compartment based on the distribution of the present commercial stocking of Mahogany. Based on this assessment, each compartment has been categorized into either one of three yield categories: High (>300 bdft per ha); Medium (200 to 300 bdft per ha); or Low (<200 bdft per ha). This categorization will aid the decision of which blocks to select in any given year, with the objective of optimizing the management of Mahogany inventory in the lumber shed.

The supplementary felling series is comprised of those areas that have been logged under the previous pre-hurricane forest management plan when this area of forest was part of the Gallon Jug forest property and those areas where salvage logging

has occurred post Richard. Therefore, they cannot be logged for the foreseeable future. Fig. 18 shows the layout and yield category of the logging compartments.

Timber species in Laguna Seca have been grouped according to the national standard for timber species grouping, namely: prime, elite and select. This classification system is based on six properties as shown in the following table.

Table 1-1 Characteristics of national timber species grouping

Species Group	Timber Quality	Workability	Durability	Growth	Log Form	Market Demand
Prime	Exceptional	Excellent	Excellent	>90th Percentile	Excellent	High
Elite	Good	Challenging	Good	>50th Percentile	Good	Good
Select	Fair	Fair	Fair	<50th Percentile	Fair	Fair

The table below list the approximately 17 species occurring on the Laguna Seca property which are currently marketable as sawn lumber. Some occur abundantly and others are very rare, which affects the amount of data available on growth within each size class.

Table 1-2 17 currently marketable timber species found in Laguna Seca

Prime	MCD (cm.)	Elite	MCD (cm.)	Select	MCD (cm.)
Mahogany	60	Red Mylady	45	Sapodilla	50
Cedar	60	Black Poisonwood	45	Sillion (Red)	50
		Black Cabbage Bark	45	Santa Maria	50
		Bastard Rosewood	50	Nargusta	50
		Barbajolote	50	Redwood	50

Prime	MCD (cm.)	Elite	MCD (cm.)	Select	MCD (cm.)
		Hobillo	50	Bullet Tree	50
		Granadillo	50	Billywebb	50
				Hesmo	50

The annual plan of operation (APO) provides the planning and baseline information for the implementation of all harvesting and management activities that will take place in the annual coupe normally for a one year period. SFM is predicated on the application of reduced impact logging practices to all timber harvesting operations.

CONSERVATION

The Laguna Seca forest is part of a trans-boundary complex of forested areas including the Calakmul and Maya Biosphere Reserves (respectively in Mexico and Guatemala) and lying within a forest bloc extending over 4 million acres (1.5 million ha), the largest remaining forested area in Central America. The core zones (including the Rio Azul National Park) of the Maya Biosphere Reserve are designated World Heritage Sites on combined cultural and natural criteria. The Laguna Seca forest shares many of these qualities, indicating significance at a global level.

To assure conservation of all existing ecosystems, a minimum of 10% of each ecosystem will be set aside for strict conservation. Meanwhile, a number of ecosystems are considered too fragile and will thus be excluded completely (100%) from timber extraction activities.

These completely protected ecosystems are the following:

- All Savannas
- All Wetlands
- All areas with slopes >20° (escarpment, Karst features)
- A 1k buffer along the Guatemala border

- A central section approximately in the eastern section of Laguna Seca
- A strip below the main escarpment

In addition, certain features will be “buffered” which means that a strip of forest along the feature will be set aside for full protection in which no extractive activities will be allowed. These buffers will follow the:

- Main through roads
- Rivers and streams
- Cara Blanca Pools
- Maya sites

The Laguna Seca fauna has been relatively well studied. Given the fact that the area is contiguous with the Belizean components of the larger Selva Maya (Aguas Turbias National Park, RBCMA, Gallon Jug, Yalbac and Spanish Creek Wildlife Sanctuary), it can be assumed to have a fauna similar to these better studied areas (Meerman et al, 2003, 2004, 2007, Programme for Belize 2003, 2006, 2009, Wultsch 2008). As with the flora the most important characteristic is that wildlife occurs in fully functioning communities’ characteristic of the area, most clearly demonstrated by the presence of key species such as Tapir, Black Howler Monkey, Spider Monkey, Great Curassow, Ocellated Turkey and Crested Guan. On top of that is the diversity and relative commonness of top predators e.g. large cats (Wultsch 2008) and birds of prey. The 2015 Laguna Seca HCVF report (Meerman 2014) provides more detail on the monitoring of key species and their habitat.

Endangered species in the Laguna Seca forest are a conservation priority; their management and the management of their habitats should be supported by employing the best practices in extraction activities and the latest information on the species. While the impacts of these practices may be unclear at this stage (lack of data and lack of experience), what is clear, is which species should be the focus of attention. Based on the National List of Critical Species, the tentative list of species for the Laguna Seca forest is as follows:

Table 1-3 Species of concern found in Laguna Seca

Reptiles

Crocodiles	Crocodylus moreletii	Morelet's Crocodile
Wood Turtles and Sliders	Trachemys scripta	Bocatora

Birds

Bitterns, Herons & Egrets	Ardea herodias	Great Blue Heron
Bitterns, Herons & Egrets	Agamia agami	Agami Heron
Cormorants	Phalacrocorax brasilianus	Neotropical Cormorant
Ducks, Geese and Swans	Cairina moschata	Muscovy Duck
Ducks, Geese and Swans	Dendrocygna autumnalis	Black-Bellied Whistling Duck
Ducks, Geese and Swans	Dendrocygna bicolor	Fulvous Whistling Duck
Turkeys, Grouse, Pheasants	Meleagris ocellata	Ocellated Turkey
Guans and Curassows	Crax rubra	Great Curassow
Guans and Curassows	Penelope purpurascens	Crested Guan
Motmots	Electron carinatum	Keel-Billed Motmot
American Vultures	Sarcoramphus papa	King Vulture
Kites, Hawks, Eagles	Falco deiroleucus	Orange-Breasted Falcon
Kites, Hawks, Eagles	Harpia harpyja	Harpy Eagle
Kites, Hawks, Eagles	Morphnus guianensis	Crested Eagle
Kites, Hawks, Eagles	Spizaetus ornatus	Ornate Hawk-Eagle
Kites, Hawks, Eagles	Spizaetus tyrannus	Black Hawk-Eagle

Mammals

New World Monkeys	Alouatta pigra	Black Howler Monkey
New World Monkeys	Ateles geoffroyi	Yucatan Spider Monkey
Cats	Leopardus pardalis	Ocelot
Cats	Panthera onca	Jaguar
Tapirs	Tapirus bairdii	Tapir
Peccaries	Tayassu pecari	White-lipped Peccary

Laguna Seca has a relatively high density of minor archaeological sites. The management and protection of the high conservation value forest including the cultural values is discussed in the 2015 Belize Laguna Seca HCVF report. This is available by request.