

Wildlife Trade Operation proposal - Harvest and export of native wildlife.

1. Introduction

This is a Wildlife Trade Operation proposal for the small-scale sustainable wild harvest of native fruit from the Northern Territory for development of a niche export market. The fruit is currently wild harvested by contractors/suppliers for the domestic market under permit from the Parks and Wildlife Commission N.T. The relevant legislation includes the *Territory Parks and Wildlife Conservation Act 2000*, *Parks and Wildlife Commission Act* and *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Plant Species

Scientific name	Common name	Harvest Part	Harvest method
<i>Terminalia ferdinandiana</i> (Combretaceae)	Billygoat plum, Kakadu plum	Ripe fruit	By hand

Location of Harvest

The location of the proposed wild harvest is Crown land located near Darwin in the Northern Territory. This is the same location where the fruit is currently wild harvested under Northern Territory permit for the domestic market. The exact location of the harvest site is stated on the permit issued by Parks and Wildlife Commission N.T.

Part of Plant Harvested

The part of the plant that is harvested is the ripe fruit from *Terminalia ferdinandiana* trees greater than 2 meters high. The fruit is a small plum (1.5-2.5cm long), oval in shape (similar to an olive) and yellow-green in colour when ripe.

Is the species protected under State or Federal legislation?

The plant species (*Terminalia ferdinandiana*) in this Wildlife Trade Operation proposal is:

- Not listed as threatened under Northern Territory legislation
- Not listed as threatened under State legislation
- Not listed as threatened under the Federal legislation (i.e. *Environment Protection and Biodiversity Conservation Act 1999*).
- Not listed under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

2. Statement of general goal/aims

This Wildlife Trade Operation proposal aims to develop and maintain a small-scale sustainable supply chain of 'selected' wild harvested fruit for use in "Australian Made" value-added products for export to niche overseas markets. Through careful management, monitoring, very conservative harvest quotas (<0.01% fruit naturally occurring) and very low impact hand harvesting techniques, the operation has no negative impact on the environment ensuring the continued viability and sustainability of the natural resource.

3.0 Harvest Details

3.1 Harvest Area

The harvest area is on approximately 7000 hectares of Crown land located near Darwin in the Northern Territory. The location of the harvest area is stated on the wildlife permit issued from Parks and Wildlife Commission NT.

3.2 Land Ownership & Permits

The harvest area is Crown land in the Northern Territory, which is owned by the Commonwealth of Australia and subject to the Crown Lands Act. It is managed by the Crown land Management Section under the N.T. Department of Lands Planning and the Environment.

A permit is required to take wildlife from Crown land in N.T. under the Parks and Wildlife Act, which is managed by Parks and Wildlife Commission NT.

The permit states the following details and restrictions:

- o Permit Number
- o Start Date
- o End Date
- o Permit holder
- o Street address of business
- o Scientific name / Common name
- o Royalty (per unit of measure)
- o Maximum Quantity of harvest / Unit of measure (eg per kg)
- o Locations of harvest
- o Term & conditions including
 - Method of harvest limited to: e.g. Hand harvest
 - Harvesting of the fruit is for commercial purposes
 - Lists the permit holder vehicle(s) that can be used for the harvest.

3.3 Harvest Quantities & Measurement

This application is proposing the following maximum annual units (kilograms) for export.

Scientific Name	Harvest Part	Maximum Number of units* per Year
<i>Terminalia ferdinandiana</i>	Ripe fruit	2,000 kilograms

3.4 Methods of Harvesting

The ripe fruit is hand harvested by a small team of collectors which move between trees on foot careful not to cause damage to the natural environment. The team is managed by an experienced horticulturist. The hand harvesting procedure involves picking ripe fruit accessible from ground level and gently shaking the tree to drop ripe fruit higher up then collecting it from under the tree. Only healthy trees are harvested preferably in higher densities areas that exhibit high quantities of fruit. A maximum of 80% of each trees fruit is harvested.

The harvested fruit is carried by hand in a container (e.g. basket) to the vehicle, the registration number of which is stated on the collection permit. The vehicles are parked on the roadside and are only driven

on only designated roads. The permit holder must operate a legible log book noting the harvest quantities and harvest area for supporting evidence for the royalty's payable per unit (kg) and other reporting.

Key points related to hand harvesting:

- The hand harvest operation must be within the limits of the permit.
- Vehicles must remain on designated roads at all times.
- Aim to harvest from trees with higher densities with high levels of fruit
- Harvest a maximum of 80% of fruit of each tree
- Do not harvest from unhealthy trees
- The harvesting of the fruit must have minimal disturbance to foliage and branches.
- No trees may be removed or cut-down under any circumstances.
- Clothing and boots worn by the harvester must be properly cleaned before visiting another harvest area.
- Where possible the ripe fruit should be collected close to designated roads.
- Avoid walking near creeks or rivers which may cause erosion to the banks.
- No rubbish on any kind is to be left in the area.
- The aim is absolute minimal disturbance leaving only foot prints behind.
- The permit holder must operate a legible log book for the harvest quantities and harvest area for supporting evidence for the royalty payable per unit (kg) and other reporting.
- Ensure the royalty is paid based on quantity collected.

The hand harvest of this fruit under the current permit systems by Parks and Wildlife Commission N.T. has been ongoing for over a decade for fruit sold to the domestic market. To our knowledge, there are no known incidences of damage to harvest trees, damage to co-existing species, disease introduction or damage to the environment.

3.5 Harvest Period

The main harvest period is from January to June, but it can vary outside these months depending on the season.

Scientific Name	Harvest Part	Approximate Harvest Period
<i>Terminalia ferdinandiana</i>	Ripe fruit	January to June

The fruit ripens at different rates throughout the season and depending on the climate, therefore hand harvest is an incremental process that normally takes place over a few consecutive months. It is not a continuous process that occurs throughout the year. Each hand harvest takes only a small percentage of the fruit on each tree. Given the proposed harvest area is 7000 hectares on Crown land and it is estimated that there's 1.7 million trees in the area based on typical density studies (Gorman et al 2002), the hand harvest should be considered a very low impact operation. Only a very small percentage of the trees would actually be hand harvested.

4.0 Impact of harvest on the taxa and the relevant ecosystem

The wild harvest of this fruit under the current Northern Territory permit systems has been in operation for well over 10 years for the domestic bush-food industry. The annual fruit Take Permit (allowed to harvest) in the Northern Territory has ranged 5,000kg in 1997 to 20,000kg in 2005. (Cunningham et al 2008). To our knowledge, there are no known incidences of damage to harvest trees, co-existing species, disease introduction or damage to the environment.

5.0 Monitoring And Assessment

5.1 Resource assessment

Terminalia ferdinandiana is not considered to be rare, threatened or endangered. It is not listed under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

The distribution of *Terminalia ferdinandiana* ranges from Western Australia to Arnhem Land in the Northern Territory. In the Northern Territory it is found above 16°S, and in Western Australia from Broome to Drysdale River.

In the Top End of Northern Territory, *Terminalia ferdinandiana* is reported as an understory tree occurring in open woodlands dominated by *Eucalyptus teradonta* and *Eucalyptus miniata* that occurs on a variety of soil types. Other understory trees include *Acacia* spp., *Syzygium suborbiculare*, *Planchonia careya*, *Erythrophleum chlorostachys*, *Buchanania obovata*, and *Xanthostemon paradoxus*. None of these plant species are listed as endangered or threatened.

It has been estimated that there are over a few hundred million *Terminalia ferdinandiana* trees over the height of 2 metres in northern Australia. In much of their distribution they are protected in parks and reserves (Gorman et al 2002).

Woods estimate a yield of 15kg of fruit from a mature tree being at the lower end of the spectrum (Woods 1995). Even if we take an extremely conservative estimate of 1kg of fruit per tree, this equates to a few hundred million kilograms of fruit occurring annually in northern Australia.

In the coastal areas near Darwin, the density of *Terminalia ferdinandiana* trees (fruit bearing age of 2 years or more) is reported as 272 +/- 169 per hectare. The density of fruiting trees is reported as 151 +/- 120 per hectare. The yield of fruit per tree is quite varied. One study reported a fruit yield between 15 – 24kg (up to max. 40kg) per tree per season (Woods). Conservatively, this calculates to 3000kg per hectare (calculated by mean number of trees per hectare 272 x 15kg per tree). Another study reported the mean harvestable fruit per tree as 0.13kg +/- 0.17kg on a single collection day, which supports the claim that hand harvesting is incremental and very low impact. (Gorman et al 2002)

The proposed harvest area of 7,000 hectares of Crown land is a very large area, which theoretically equates to 21 million kilograms of fruit per season (at 3,000kg per hectare). The maximum quantity of fruit stated on our contractor/supplier collection permit is 5,000kg (0.02% approx). When this percentage is applied to the fruit produced annually from the entire species population in northern Australia, it calculates to well below 0.001%.

The operation is small scale and very low impact.

5.2 Supervision of Harvesting

Removal of plant material from the proposed harvest site (Crown Land) requires a Permit To Take Protected Wildlife, pursuant to section 56 and 57 of the Territory Parks and Wildlife Conservation Act, which is granted annually by Parks and Wildlife Commission NT.

Our supplier is an experienced horticulturalist which manages the wild harvest operation and is the permit holder for the current operation supplying the domestic market.

The harvest site on Crown land is supervised by the local indigenous rangers and monitored by Parks and Wildlife Commission NT. The permit must be presented to rangers upon request when harvesting plant material from the Crown Land.

The permit holder must operate a legible log book for the harvest quantities and harvest area for supporting evidence for the royalty's payable per unit (kg) and other reporting.

This system has been operating successfully for over 5 years supplying the domestic market.

5.3 Monitoring of Harvesting

The applicant will inspect the harvest area on an annual basis at the end of the harvest period.

Inspection includes assessment of population density in the harvest area, noting the any negative aspects including presence of damaged trees, rubbish, tyre tracks and positive aspects such as presence of new seedlings around the harvest tree indicating a healthy regeneration process and population expansion.

5.4 Other Monitoring

Assessment of population density in the harvest area will be on-going.

6. Management Strategies

The harvest team is to be managed by an experienced horticulturist, agronomist or scientist with experience with the local region.

Harvest sites should be selected on the basis of high population densities, healthy trees and good access close to established roads.

7. Compliance

The applicant will comply with all State and Federal law in the proposed operation.

8. Reports

The applicant will submit an annual report to the Department of the Environment with details of material harvested for export, results of population density monitoring and any other relevant details.

9. Background Information

The harvest of this native fruit under the current Northern Territory permit systems has been in operation for well over 10 years for the domestic bush-food industry. The annual fruit Take Permit (allowed to harvest) in the Northern Territory has ranged 5,000kg in 1997 to 20,000kg in 2005. (Cunningham et al 2008). It is also reported to be wild harvested in Western Australia.

Rural Industries Research & Development Corporation (RIRDC) has been researching the potential of this native fruit over the last decade due to its high nutritional value. Refer to references on page 6.

References

A study of the intra-specific variations and commercial potential of Terminalia ferdinandia (The Kakadu Plum). Brian Woods, 1995.

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