

Wildlife Trade Operation Proposal

Harvest and Export of an Australian Native Bushfood

1.0 Introduction

This Wildlife Trade Operation Proposal is for the small-scale, sustainable wild harvest of the native fruit, Kakadu Plum, (*Terminalia ferdinandiana*) (also widely known in Western Australia as Gubinge fruit) from a number of locations on private leasehold land which includes Aboriginal Homelands in the Kimberley region of Western Australia, for export for a niche market.

The relevant legislation includes the Biodiversity Conservation Act 2016 (WA), the Environment Protection Biodiversity Conservation Act 1999 (Commonwealth) and the National Parks and Wildlife Conservation Act 1975.

1.1 Species being harvested

Only the ripe fruit of *Terminalia ferdinandiana* is harvested during the summer season from December to February. And only the fruit flesh is utilised in any product made. We have a strong export demand for our unique Kakadu Plum products and are keen to meet the demand and showcase this remarkable fruit with quality products that are sustainably sourced.

Scientific Name	Common Names	Harvested plant part	Harvest Method
<i>Terminalia ferdinandiana</i>	Kakadu Plum, Gubinge	Whole ripe fruits	Hand harvested

1.2 Location of Harvest Activities

Kimberley Wild Gubinge has been involved in the Kakadu Plum industry for 10 years, both in wild harvest collection and creating products directly from the fruit harvested. We wild harvest from private leasehold land with wild occurring trees and savannah enrichment plantings on the same property.

Name	ABN	Location
Munget Aboriginal Corporation	36099226100	Dampier Peninsula, Western Australia

1.3 Part of Plant Harvested

The ripe fruit is harvested directly from the trees and generally is a small olive sized fruit, light green in colour and fleshy when ripe.

1.4 Is the species listed in 1.1 protected under state, Territory and Commonwealth legislation?

1. Not listed as threatened under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*.
2. Not listed as threatened under the Threatened and Priority flora list-
Department of Biodiversity, Conservation and Attractions, Government of Western Australia (Department of Land Resource Management, 2016; Environment Protection and Biodiversity Conservation Act [EPBC], 1999).
3. Not listed as threatened under the *Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)*.

2.0 Statement of General Aims and Goals

The aims and goals of this WTO application is to facilitate the export of our Western Australian made products that utilise the native fruit of the Kakadu plum. We will not be exporting any whole fruit, only dried products and liquid serums. We aim to demonstrate that the harvesting of the fruit in our operations meets the highest environmental standards and requirements with regards to low impact and low volume collection methods that integrate cultural knowledge and modern methods to achieve this. We can generate positive economic outcomes and exhibit that small-scale sustainable harvesting of selected wild harvested and Savanah Enrichment grown fruit is carefully managed and monitored. Through conservative harvest quotas and low impact hand harvesting techniques as well as growing more trees and returning seed back to harvest locations the operation is considered to have negligible impact on the environment and ensures the continued viability and sustainability of this natural resource, whilst harnessing the benefits of Australian native foods and botanicals to an international audience (Sultanbawa & Sultanbawa, 2016; Whitehead et al., 2006).

3.0 Harvest details

3.1 Harvest areas and land tenure

Locations of harvest areas are listed at 1.2 The Munget Aboriginal Corporation on Aboriginal Reserve [REDACTED] lease where the fruit is naturally occurring (wild harvest) and also includes Savanah Enrichment trees (trees grown and planted within community parklands). The Munget Aboriginal Corporation land is located north of the Beagle Bay Aboriginal Community on the Dampier Peninsula.

3.2 Permit Requirements

In Western Australia a permit is required for *Flora Taking (Commercial) Licence*, pursuant to Regulation 60 of the *Biodiversity Conservation Regulations 2018*. Members of our community and business have held licences for over 10 years, with renewal now on a 3-year basis. Reporting of *fruit taken* is required four times per year on forms supplied by the department called a Three Month Return of Protected Flora where details of the harvest volumes and type and location are recorded and submitted to the Department of Biodiversity, Conservation and Attractions (DBCA) WA.

3.3 Harvest Quantities and Measurement

There is no limit to the overall harvest volumes as they are determined by the season, with some seasons more abundant than others due to weather conditions and tree variability. Generally, it varies [REDACTED] kg per year of whole ripe fruit. Some quantity of the harvest is from a tree enrichment program (known as Savanah Enrichment) which refers to nursery grown seedlings, with the seeds sourced from wild populations. The seedlings are planted within the naturally occurring bushlands of the Munget lease and within parklands that have been established as part of the Munget Bushfire Mitigation Plan. More than [REDACTED] trees were planted [REDACTED] years ago and have started to produce volumes of fruit. This method has nil impact on wild tree populations. Volumes of fruit are inputted into dedicated record-keeping of the annual harvest.

3.4 Harvesting methods and equipment

All of the fruit we harvest is hand-harvested on foot with occasional use of light-weight step ladders to reach higher branches. The fruit is generally harvested by picking off the stems that the fruit is attached to. Our harvesters use a fruit picking bag and when full, transfer the fruit to larger bags. We use a bag that has an anti-bacterial inner lining to minimise damage to the fruit and maintain freshness and hygiene. We do not collect any fruit that has fallen to the ground to prevent mould and bacteria from entering our fruit collection.

The harvest is *selective* to prioritise the best tasting and ready fruit. Unripe fruit is left on the tree to be harvested at a later date if possible. Additionally, any fruit that has insect damage is not collected or removed during a later sorting process.

In the wild harvest, care is taken to prevent breaking or damaging the tree and the surrounding bush by walking on foot. The aim is to harvest from higher yielding trees, and to harvest no more than 80% of the fruit from any one tree. Clearing dead fallen wood from under the tree is encouraged to minimise the effects should wildfires enter the area. The aim of our process is minimal disturbance to the local environment including no rubbish of any kind to be left in area. Under no circumstance should trees be removed or cut down.

In our particular circumstance our freshly harvested fruit is directly delivered and sorted for quality before being weighed and triple washed at our purpose-built facility. Same day harvest-to-freeze is strictly adhered to preserve and maintain the fruit's integrity.

The collection and harvest of Kakadu plum in a commercial capacity has been occurring on the Dampier Peninsula and surrounding region for over twenty years with this providing an even greater respect for the tree as it is so valued for its medicinal and healing properties. Local Aboriginal Ranger group, the *Nyul Nyul Rangers*, help to protect the wild occurring orchards through monitoring, planning their early season burns to protect high density areas as well as collaboration with harvesters over the years to collaborate on our understanding of the species and habitat management.

3.5 Harvest Period

In Northwestern Australia the harvest season for the Kakadu Plum occurs between December to February. Trees flower during the August to September period and fruit sets and ripens at different rates and is harvested accordingly over the summer or Wet Season. Climate and weather conditions as well as wildfires are also factors that give seasonal variations to quality and volume of fruit in any given season.

4.0 Impact of Harvest on the Taxa and Ecosystem

Drawing on our decade long history involved in the industry with annual first-hand experience in the field, we believe there is minimal impact on the taxa and ecosystem from our personal observations and industry best practises. Naturally occurring fruit drop makes up a large proportion of the overall fruit volumes and is unable to be harvested from the ground and returns to biomass. Additionally, the scale of wild orchards and inaccessibility to trees due to geography, terrain and weather means that there are large areas that never get harvested. The impact is minimal.

5.0 Monitoring and Reporting

5.1 Resource Assessment

Kakadu plum is not considered rare, threatened or endangered under State or Federal legislation, nor is it listed under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Across the Northwest of Western Australia, the species occurs in abundance in open Pindan Woodlands, Monsoon Vine Thickets, coastal sand dune areas, fringing salt marsh and claypans and rocky outcrops. A common, deciduous tree to 14 metres, with great horticultural potential (Kenneally et al., 1996).

5.2 Supervision of harvesting

Our harvesters use traditional Aboriginal bush knowledge, customs and Caring for Country principles whilst harvesting and in addition any external local suppliers must hold the permit for *Flora Taking*. Permits must be carried whilst harvesting and presented upon request to DBCA Rangers.

5.3 Monitoring of harvesting

As a longstanding member of the industry, we collect harvest information for reporting, as required to hold the Flora Taking (Commercial Purpose) Licence issued by DCBA. The permit holders will thoroughly adhere to the conditions of the permit and report harvested volumes. We are confident the supplier/permit holder is knowledgeable and ethical in their handling of harvest operations, and the harvesting operations have negligible impact on the local ecosystems.

5.4 Other Monitoring

Kimberley Wild Gubinge has a comprehensive 'in-house' monitoring program of the trees and habitat that developed naturally over a decade when we first became harvesters of the fruit. Over time and with the development of the business we have been record keeping a variety of information.

We have a catalogue of photographic information on the seasonal changes of the trees including their winter dormancy, their new season sprouting of leaves and flowers and the setting of fruit at various stages of the growth cycle. [REDACTED]

We have also worked with the Department of Primary Industries and Regional Development in their research [REDACTED]. With our relationship to DPIRD if we were to notice any major changes to trees and /or pests then we have a direct line to contact them to alert the department and to other stakeholders in the Kakadu plum industry.

6.0 Management strategies

Our management strategies are based on our local and cultural knowledge of the trees and habitat as well as broader Kakadu plum industry best practise methods and guided by the State legislation for collection and reporting.

7.0 Compliance

The applicant will comply with all State and Federal laws for all actions associated with the operation outlined in this proposal.

8.0 Reports

If required, the applicant will submit an annual report to the Department of the Environment with details of the harvested materials for export and any other relevant information including copies of our Commercial Licences and the 3 Monthly Return Notices required by DCBA which list the actual kilogram values of fruit harvested each season by month.

9.0 Background Information

The Kakadu Plum has been a staple, seasonal fruit harvested and utilised as a traditional food and medicine by Indigenous Australians for thousands of years. In the early 1980's a man by the name of Les Hiddens, also known as the *Bush Tucker Man*, collected some in the Northern Territory and sent samples down to be tested in Adelaide, South Australia at the CSIRO. The high Vitamin C content of the fruit captured attention for its commercial potential (Brand et al., 1982). More recently there has been high international interest and demand for *terminalia ferdinandiana* (Laurie, 2020). International interest increased when research showed the antimicrobial properties of *terminalia ferdinandiana* (Williams et al., 2014).

A small but slow industry has developed with wild harvest only beginning in 1996. As further research has shown the fruit exhibits high nutraceutical, nutritional and cosmetic values and a small but strong industry has developed over time (Konczak et al., 2009). The horticultural potential for orchards has expanded with some now bearing fruit which will help to meet the demand whilst lowering the pressure on the wild species. The industry also helps to create employment and income including for Indigenous Australians and those living in the north of the state as any profits flow back to the region (Fijn et al., 2012). Additionally, the high standards being met by the industry ensure the ongoing viability of the Kakadu Plum habitat and species and helps to promote the clean, green and pristine Australian Native Botanical Industry (Department of Environment and Natural Resources, 2019-2023).

10. References

Brand, J.C, Cherikoff, V. and Lee, A. (1982). *An Outstanding Food Source of Vitamin C*. Lancet 2(8303):873.

Department of Environment and Natural Resources. (2019-2023). *Management program for Kakadu Plum*. Management program for Kakadu Plum 2019-2023: https://depws.nt.gov.au/__data/assets/pdf_file/0011/685676/kakadu-plum-tree-management-program-2019-2023.pdf

Department of Land Resource Management. 2016 *Threatened Species List*. <http://lrm.nt.gov.au/plants-and-animals/threatened-species/specieslist#.VEW4CclcR9A>

Environment Protection and Biodiversity Conservation Act. (1999). *Species Profile and Threats Database*. <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>

Fijn, N., Keen, I., Lloyd, C. and Pickering, M. (2012). *Indigenous Participation in Australian Economies II*. ANU Press. Indigenous Participation in Australian Economies II: <https://press-files.anu.edu.au/downloads/press/p182561/html/ch16.html?referer=254&page=26>

Kenneally, K, F., Edinger, D, C. and Willing, T. (1996). *Broome and Beyond, Plants and People of the Dampier Peninsula*. (p.88). CALM.

Konczak, I., Zabaras, D., Dunstan, M., Aguas, P., Roulfe, P. and Pavan, A. (2009). *Health Benefits of Australian Native Food – A evaluation of health-enhancing compounds*. Rural Industries Research & Development Corporation (RIRDC) publication.

Laurie, S. (2020). *Australian native foods and botanicals – 2019/20 market study*. ANFAB. https://anfab.org.au/edit/research_projects/ANFAB_2020_Market%20Study.pdf

Ranger Groups of the Dampier Peninsula WA.. <https://nailsma.org.au/national-practitioner-network/land-sea-managers-map/nyul-nyul-rangers>
<https://nailsma.org.au/national-practitioner-network/land-sea-managers-map/bardi-jawi-rangers>

Sultanbawa, Y. and Sultanbawa, F. (2016). *Australian native plants: cultivation and uses in the health and food industries*. CRC Press, Taylor & Francis Group, Florida, USA.

Whitehead, P.J., Gorman, J., Griffiths, A.D., Wightman, G., Massarella, H. and Altman, J. (2006). *Small-scale Commercial Plant Harvest by Indigenous Communities: A report for*

the Rural Industries Research & Development Corporation (RIRDC)/Land and Water Australia/FWPRDC/MDBC Joint Agroforestry Program RIRDC, Barton, Australian Capital Territory, Australia.

Williams, D.J., Edwards, D., Pun, S., Chaliha, M. and Sultanbawa, Y. (2014). *Profiling ellagic acid content: the importance of form and ascorbic acid levels*. Food Research International. 66, 100-106.



COAST | COUNTRY | CULTURE

ARDI

Beyond Broome

- Lombadina Community
- Chile Creek Community Stay
- Goombaragin Eco Retreat
- Whalesong Cafe/Campground
- Mercedes Cove Retreat
- Middle Lagoon
- Gnylmarung Retreat
- Banana Well Getaway

Munget
Aboriginal
Corporation

Cape Leveque

Kooljaman at Cape Leveque

Brian Lee Tagalong Tours

Bundy's Cultural Tours

Gambanan

Ardyaloon Hatchery

Cygnnet Bay Pearls

Sunday Island

One Arm Point

Djoodoon

Pender Bay

Text

Middle Lagoon Access Track

Beagle Bay
Community

Cape Leveque Road

Dampier Peninsula

King Sound

Derby

James Price
Point

Barred Creek

Willie Creek

Broome

Roebuck Bay

Great Northern Highway

0 20km 40km 60km

Sealed Road

Unsealed Road (4WD required)

Major Towns

AUSTRALIA