FACT SHEET No 3: PARKINSONIA CONTROL

PARKINSONIA CONTROL IN THE DE GREY CATCHMENT

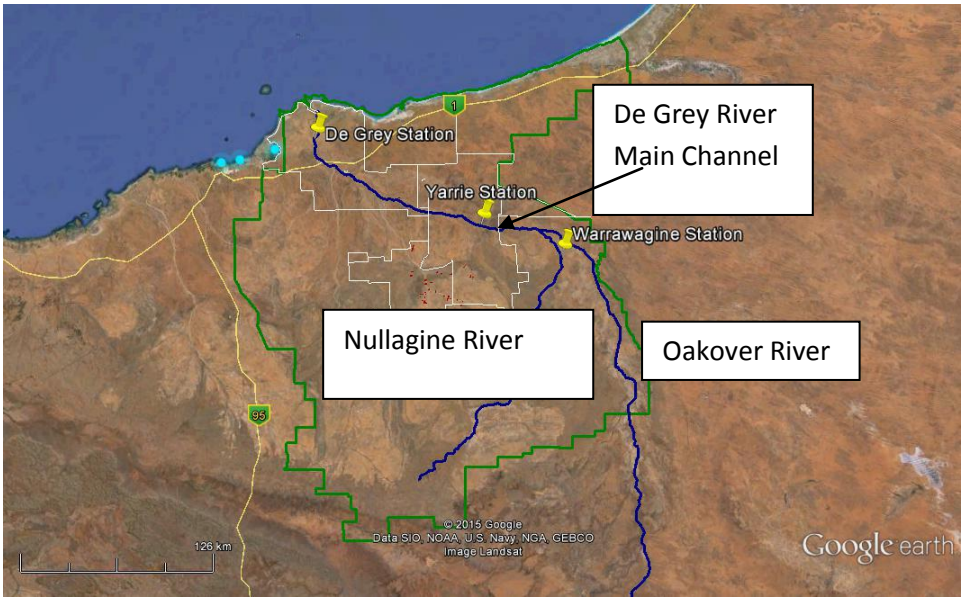
DE GREY LCDC
DE GREY LAND CONSERVATION DISTRICT COMMITTEE
PILBARA

Background:

Parkinsonia is a highly invasive spiny shrub or small tree native to central and South America, that ranges from 2 to 8 metres in height, and is capable of forming dense, often impenetrable thorny thickets, particularly on floodplains and water courses. Floating seed pods and seeds are spread along water courses and by flood waters on floodplains.

Parkinsonia is a declared pest under the Western Australian Biosecurity and Agricultural Management Act 2007 (BAM Act) and is also considered a weed of national significance (WoNS). The species has potential to impact on cultural, pastoral and ecological values and currently occurs along the De Grey River. Previous efforts to control the weed over the past 30 years have predominantly been through herbicide application which is laborious, expensive, introduces chemicals to the environment and requires multiple treatments.

In 2010, surveys identified the De Grey catchment had the most significant Parkinsonia infection in the Pilbara, where there was 30,000 hectares of Parkinsonia infestations along around 200 kilometres of river.



Map of De Grey catchment and De Grey, Oakover and Nullagine river systems.

June 2017

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Control programs:

Basal Herbicide Spraying - There have been many grants funded over the years to spray the stems of Parkinsonia plants along the De Grey catchment. A typical annual grant would have been around $80,000 to $120,000 per annum, with a combination of contractors and volunteer pastoral station labour spraying the Parkinsonia. To put this effort in perspective, the Pilbara Mesquite Management Committee (PMMC) previous project manager, Linda Anderson, estimated that to control and eradicate Parkinsonia over at least a five year period, an ideal annual spraying program would require around $210,000 per annum using contractors. Relying on grants and limited time of pastoral station crews to locate and basal spray Parkinsonia along the De Grey river floodplains, Parkinsonia would not be eradicated from the De Grey catchment.

Loopers – biological control: a tiny caterpillar — have been introduced and used in the Pilbara to control Parkinsonia. There are signs the loopers are establishing themselves on De Grey Station, and while they do not kill the weed, they reduce it's capacity to seed and spread, which will make treatment more successful over time if the Parkinsonia is not spreading seed.

Fungus capsules – biological control: In 2016 the De Grey LCDC received a grant from Landcare Australia for a project titled "Fungus trials to control Parkinsonia weeds along the De Grey River in the WA Pilbara region". The project was supported by Jo Kuiper and the Pilbara Mesquite Management Committee (PMMC).

A fungus capsule is inserted into a drilled hole in the base of the Parkinsonia tree and takes about six to 12 months to kill the plant, but it spreads into the nearby ground too.

Left: DiBak Fungus capsules. Right: Darrell Mateljan and Cody Lambert insert a fungus capsule into a parkinsonia plant. Photos – Jo Kuiper.

Jo Kuiper from the Pilbara Mesquite Management Committee said the symptoms were similar to die-back.

"The plant essentially just slowly dies over time. The fungus works from the bottom of the stem, up through the canopy of the parkinsonia, and then down through the roots system," she said

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During September 2016, De Grey, Muccan, Yarrie and Warrawagine stations along the De Grey river participated in the Landcare Australia fungus trial project. In summary;

- 401 Parki plants were killed using the traditional chemical methods (as they were too small to treated with the DiBak fungus plugs)
- 1764 were treated with the DiBak fungus control capsules.
- 28 Operator days (1st - 14th September) were required, plus coordination logistics.
- In kind support from the PMMC included mobilisation and demobilisation support, equipment, monitoring and reporting etc.

Monitoring in March 2017 by Jo Kuiper (PMMC) found signs of success from the fungus trials, including plants injected with the DiBak fungus capsules:

- Bark on the Parkinsonia is brown and rough - where it should be smooth and bright green.
- Basal stem degradation around the injection hole where the fungus was injected.
- Dead/ dying branches.
- Dying leaves.

March 2017: Dying leaves on a Parkinsonia plant after injection in September 2016 with a DiBak fungus capsule. After heavy summer rains the leaves would normally be bright green and healthy, indicating the fungus was starting to effect the health of the Parkinsonia plant within 6 months of treatment.

Photo: Jo Kuiper

The March 2017 monitoring is indicating that the fungus capsules are affecting the health of the injected Parkinsonia plants, with dead branches and dying leaves. Ongoing monitoring will determine if the fungus has spread through the soil to affect untreated Parkinsonia plants.

The De Grey LCDC would like to thank the support of the funders and sponsors: Landcare Australia Limited and the Pilbara Mesquite Management Committee (PMMC).

Landcare Australia

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PILBARA MESQUITE MANAGEMENT COMMITTEE