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Creating and Managing Productive Pastures in the Dry Tropical Regions of the World

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[Presentation Report]

Robyn manages land in the Kimberley region, on the border of the Northern Territory. This an arid tropical region of degraded land, consisting mainly of sand-dunes, that has been overstocked. The station is called Birdwood Downs. Savannah Systems has been set up by eco-technicians who work with Robyn. The area in the Kimberley was chosen due to its political stability. Up to 45% of the land in the region is small-leased and the area is considered by the Government to have the least possible potential.

As the land had been over-grazed, the topsoil had been removed and the remaining soil was compacted. All of the perennial seed species had been removed. Some tree species from the region were no longer in existence.

To be able to make changes in this region, it was essential to look not only at the land and the land use but to understand the culture. For the local people it was a lifestyle and therefore it was difficult to change attitudes. So it was necessary to maintain some of the ways that land had been managed, and integrate new methods.

The variance of rainfall is a major contributor to the poor soil.

Cleared areas were worked in strips with a bulldozer that had a rake on the front. Legumes were planted into these areas. Local native species could not grow so introduced species were bought in as they could establish themselves readily. The first plantings failed as the cattle weren't moved off the land early enough for the seed to germinate. Wind dispersed the seed so it was randomly placed onto the areas that had moisture. These areas were concentrated growth areas. The contours of the land had led to large quantities of the soil eroding off, leaving huge erosion gullies. Contour drains and spoon drains were installed to help channel the run-off.

The following decade was a drought, so it was decided to place troughs on the top of the dune caps. The seed types planted were varied to experiment as to what would survive. The cattle grazing and seed scattering was much more controlled and Robyn was able to observe the species survival. The seed was cut and collected

and fed to the cattle, along with molasses, to speed up the digestion process. The cattle became an important part of the seeding process.

The harvest was done with combine harvesters that would take the first 'seed set' and then collect the second seed layer from the later maturing plants, the cattle were then left to graze on the stubble.

De-stocking of the cattle was important in the drier years but in more recent times Robyn has leased other people's cattle, to help with the seed sowing.

Year after year she noted a small but significant change. The species types were obviously going through a process of succession. These were species that became the 'indicator' species for how the soil and the conditions were changing. The dune caps began to sustain ground-covers for the first time in years.

The Acacias that were pulled out of the grazing areas were thrown in to the water hole areas to deter the cattle from eating plant species that were needing to be established.

The introduced species helped to create the 'right' environment for native Eucalypt species to become established for the first time in years. The EPA were impressed at the change, which was encouraging, as they had only previously offered scepticism. The species diversity was also increasing.

Robyn's work is an example of how to manage an extremely challenging region when the climate, soil, and poor management were against you.

An education base is also the focus of the station where people come from all over the world to work and study the principles and practices. Nutrition, hygiene, animal husbandry, organic farming and machinery are part of the courses that are run.