

## RESEARCH UPDATES

**Gobabeb is involved in a number of research projects. Here we give an overview of progress in some of them.**

### Cracking the habitat code of the critically endangered *Juttadinteria albata*

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If you see snow white flowers in the Sendelingsdrif area, chances are good that they belong to *Juttadinteria albata*. If so, you can call yourself fortunate, because you have seen a very rare plant species.

In fact, this low-growing succulent occurs only in a small area in the vicinity of Namdeb's Daberas and Sendelingsdrif mines. So small and vulnerable is the total population of this species that it has been accorded a conservation status of 'Vulnerable' in the red data book of the International Union for Conservation of Nature (IUCN). Namdeb's planned mining operations at Sendelingsdrif are going to strip away extensive areas of *Juttadinteria* habitat in search of diamonds.

Re-creating habitat for *Juttadinteria* is a critical requirement for the company, who wants to return the area to a land use of "nature-based tourism" after mining.



Constructing one of 12 experimental heaps to test the role of environmental factors in habitat preference of *Juttadinteria albata* growing in the rocky ground of the Orange River valley.

Although it does not have problems to germinate in a greenhouse, we suspect that *Juttadinteria* has very specific growth requirements in nature, which may be the reason for its small distribution range. Success in restoring this species in previously mined areas will largely depend on how well we know what it needs from its habitat, and then on whether we can re-create these conditions in the only available post-mining soil materials – the mine wastes.



*Juttadinteria albata* growing in the rocky ground of the Orange River valley.

Apart from a survey of the species in its natural environment, while recording a number of habitat variables where it was present and absent, we tested a number of hypotheses about its habitat preferences through the construction of twelve heaps of mine waste materials and planting *Juttadinteria* plants in various places on them.

Our findings, which are currently being written up, show that *Juttadinteria* has very specific habitat preferences (it prefers moderately rocky slopes with shallow soils, and avoids sandy areas), and furthermore point to the critical importance of aspect: plants growing on the southern aspects were more than twice as likely to grow and survive than plants on the other sides of the heaps.

By incorporating our findings into a restoration plan, we hope that the beautiful white flowers of *Juttadinteria albata* will once again be seen where once there was mining. Through this study (and other related studies) Namdeb, supported by the University of Namibia and Gobabeb, are committed to tackle this challenge head-on.

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