



Mr John Williams
Save Bantamsklip Association
Agulhas Plain

Dear John

Statement of Concern: Nuclear Facility at Bantamsklip

My colleagues and I conducted ecological and conservation research on the Agulhas Plain for two decades (1980-2000). During this time we published 39 items, including 24 papers in peer-reviewed journals, and a guide to the region's flora (see Appendix). We coined the term "Agulhas Plain" back in the mid 1980s to distinguish the region as a centre of plant endemism. We are delighted that this term has taken root amongst the local inhabitants and used to market the region as a prime ecotourism destination.

I struggle to find appropriate language to describe the extraordinary biota and associated evolutionary processes that characterize the Agulhas Plain, especially the coastal plain and adjacent hills between Gans Bay and Cape Agulhas. Here one finds a juxtaposition of soils of different chemical composition (acid, alkaline, neutral), drainage and texture, each with an entirely distinctive flora and its own suite of local endemics. The net result is diversity of a remarkable, indeed, globally unique nature. The convergence of such a wide array of edaphic habitats has produced levels of ecological speciation that are unparalleled among the world's terrestrial floras.

The Hagelkraal-Bantamsklip area harbours the best example of this evolutionary theatre. Should a region such as this be found in any of the world's developed countries, it would be proclaimed a World Heritage Site and enjoy the status and attention of the "Cradle of Humankind" site at Sterkfontein.

Locating a nuclear facility anywhere on the Agulhas Plain coastline, but especially at Bantamsklip-Hagelkraal is a preposterously silly idea. The planning for the identification of sites needs to be revisited and must take into consideration political, institutional and knowledge advancements since the early 1980s, when the candidate sites were first identified. Keeping Bantamsklip as a site for a nuclear facility in this the "Year of Biodiversity" is a damning indictment of a country that has signed numerous conventions pledging concerns about nature and the services it renders for South Africans.

Yours sincerely

Prof Richard Cowling

Appendix. List of publications on the Agulhas Plain by RM Cowling and colleagues

Peer-reviewed scientific papers

- Milewski AV and Cowling RM 1985. Anomalies in the plant and animal communities in similar environments at Barrens, Western Australia, and the Caledon coast, South Africa. *Proceedings of the Ecological Society of Australia* 14, 199-212.
- Cowling RM, Campbell BM, Mustart PJ, McDonald DJ, Jarman MC and Moll EJ 1988. Vegetation classification in a floristically complex area. The Agulhas Plain. *South African Journal of Botany* 54, 209-20.
- Thwaites RN and Cowling RM 1988. Landscape vegetation relationships on the Agulhas Plain. *Catena* 15, 333-46.
- Esler KJ, Cowling RM, Witkowski ETF, and Mustart PJ 1989. Reproductive traits and accumulation of nitrogen and phosphorus during development of fruits of *Protea compacta* R.Br. and *P. obtusifolia* Buek. ex Meisn. *New Phytologist* 112, 109-15.
- Cowling RM 1990. Diversity components in a species-rich area of the Cape Floristic Region. *Journal of Vegetation Science* 1, 699-770. Cowling RM and Bond WJ 1991. How small can reserves be? An empirical approach in Cape fynbos, South Africa. *Biological Conservation* 58, 243-56.
- Mustart PJ and Cowling RM 1991. Seed germination of four serotinous Agulhas Plain Proteaceae. *South African Journal of Botany* 57, 310-13.
- Newton IP, Cowling RM and Lewis OAM 1991. Growth of calcicole and calcifuge Agulhas Plain Proteaceae on contrasting soil types, under glasshouse conditions. *South African Journal of Botany* 57, 319-24.
- Cowling RM and Holmes PM 1992. Endemism and speciation in a lowland flora from the Cape Floristic Region. *Biological Journal of the Linnean Society* 47, 367-83.
- Kilian D and Cowling RM 1992. Comparative seed biology and coexistence of two fynbos shrub species. *Journal of Vegetation Science* 3, 637-46.
- Mustart PJ and Cowling RM 1992. Seed size: phylogeny and adaptation in two closely related Proteaceae species-pairs. *Oecologia* 91, 292-5.
- Mustart PJ and Cowling RM 1992. Impact of flower and cone harvesting on seed banks and seed set of serotinous Agulhas Proteaceae. *South African Journal of Botany* 58, 337-42.
- Mustart PJ and Cowling RM 1993. The role of regeneration stages in the distribution of edaphically restricted fynbos Proteaceae. *Ecology* 74, 1490-99.
- Mustart PJ and Cowling RM 1993. Seed-imbibed water relations of Proteaceae in soils with different water properties: an explanation for field emergence patterns. *Canadian Journal of Botany* 71, 1363-68.
- Cowling RM and Witkowski ETF 1994. Convergence and non-convergence of plant traits on climatically and edaphically matched sites in Mediterranean Australia and South Africa. *Australian Journal of Ecology* 19, 220-32.
- Mustart PJ and Cowling RM and Dunne TT 1994. Reproductive traits of two closely related species-pairs on adjacent, different soil types in South African Fynbos. *Vegetatio* 111, 161-71.
- Cowling RM, Witkowski ETF, Milewski AV and Newbey KR 1994. Taxonomic, edaphic and biological aspects of narrow plant endemism on matched sites in mediterranean South Africa and Australia. *Journal of Biogeography* 21, 651-64.

- Mustart PJ, Cowling RM and Wright MG 1995. Clustering of fertile seeds in infructescences of serotinous *Protea* species: an anti-predation mechanism? *African Journal of Ecology* 33, 224-29.
- Richards MR, Stock WD & Cowling RM 1995. Water relations of seedlings and adults of two fynbos *Protea* species in relation to their distribution patterns. *Functional Ecology* 9, 575-83.
- Richards MB, Cowling RM and Stock WD 1995. Fynbos plant communities and vegetation environment relationships in the Soetansberg hills, Western Cape. *South African Journal of Botany* 61, 298-305.
- Richards MB, Cowling RM and Stock WD 1997. Soil factors and competition as determinants of the distribution of six fynbos Proteaceae species. *Oikos* 79, 394-406.
- Laurie H, Mustart PJ and Cowling RM 1997. A shared niche? The case of the species pair *Protea obtusifolia* and *Leucadendron meridianum*. *Oikos* 79, 127-136.
- Lombard AT, Cowling RM, Pressey RL and Mustart PJ 1997. Reserve selection on the Agulhas Plain, South Africa: a flexible tool for conservation in a species-rich and fragmented landscape. *Conservation Biology* 11, 1101-1116.
- Richards MB, Stock WD and Cowling RM 1997. Soil nutrient dynamics and community boundaries in the fynbos vegetation of South Africa. *Plant Ecology* 130, 317-332.
- Heydenrych BJ, Cowling RM and Lombard AT 1999. Strategic conservation interventions in a region of high biodiversity and high vulnerability: a case study from the Agulhas Plain at the southern tip of Africa. *Oryx* 33, 256-269.

Peer-reviewed books/chapters in books

- Privett SDJ, Heydenrych BJ and Cowling RM 2002. Putting biodiversity to business on the Agulhas Plain. In: Pierce SM, Cowling RM and Sandwith T (eds), *Mainstreaming biodiversity development. Case studies from South Africa*. World Bank, Washington.

Scientific reports, reviews and miscellaneous papers (not peer-reviewed)

- Cowling RM 1989. The research perspective: veld resources. In: Greyling T and Davis GW (eds), *The wildflower resource: commerce, conservation and research. Ecosystems Programmes Occasional Report* 40. CSIR, Pretoria.

Professional and consultancy reports

- Cowling RM, Romoff N and Pierce SM 1988. Eskom nuclear site investigation. Pearly Beach to Quoin Point. Report submitted to the Environmental Evaluation Unit, University of Cape Town.
- Cowling RM 1993. Progress with the ecological management of Groot Hagelkraal (1992-1993). Report submitted to Eskom.
- Cowling RM 1994. Progress with the ecological management of Groot Hagelkraal (1993-1994). Report submitted to Eskom.
- Cowling RM and Mustart 1994.. Agulhas Plain: vegetation, flora and conservation. Report submitted to MHL Architects and Planners, Cape Town.
- Cowling RM 1996. Flora and vegetation of Groot Hagelkraal. Commissioned by Environmentek (CSIR), on behalf of Eskom.

Cowling RM 1996. Description of flora and mapping units: Bantamsklip Nuclear Facility Site. IPC Report submitted to TerraMare CC.

Cole NS, Lombard AT, Cowling RM, Euston-Brown D, Richardson DM and Heijnis CE 2000. Framework for a conservation plan for the Agulhas Plain, Cape Floristic Region, South Africa. IPC Report 0001 submitted to WWF:SA.

Popular books

Mustart PJ, Cowling RM and Albertyn J. 1997. *Southern Overberg. South African Wildflower Guide No. 8.* Botanical Society of South Africa, Kirstenbosch.

Popular articles and other items

Cowling RM 1989. Farming fynbos: reconciling exploitation with conservation. *Sagittarius* 4, 8-11. Reprinted in *SAPPEX News* and *U.C.T. News*.

Cowling RM 1990. Who will save Hagelkraal? *Veld & Flora* 76, 52-3 Kilian D and Cowling RM 1991. Appropriate harvesting strategies for *Phyllica ericoides*. *SAPPEX News* 72, 15-7.

Mustart PJ and Cowling RM 1992. Fynbos ecology for wildflower harvesters. Information pamphlet. Cape Nature Conservation, Bellville.

Mustart PJ and Cowling RM 1992. Ekologie het die hulp van veldblomplukkers nodig. *SAPPEX News* 76.

Cowling RM and Heydenrych BJ 1999. Agulhas Plain. A brave new fynbos park. *Plant Talk* July, 21-25.