The Broken Hill regeneration area: a concise chronology of key events Peter Ardill July 2017

One of the earliest known and documented ecological regeneration projects to occur in Australia and the world took place in Broken Hill over the period 1936-1958. It was a collaborative effort led by Albert Morris, a mining company senior assayer and also a skilled amateur botanist, ecologist, conservationist and regenerator. Other major players were his wife Margaret Morris, Doctors William and Ian MacGillivray (son) and Edmund Dow, all members with Albert of the Barrier Field Naturalists Club. The Club was an active and influential natural sciences, history and cultural organisation based in Broken Hill. Zinc Corporation mining administrators AJ Keast and Maurice Mawby ably supported the implementation of the regeneration project.

Albert was not only possessed of extensive botanical and ecological knowledge. The degradation of the arid landscapes of the far west of NSW by overstocking, rabbits and vegetation clearing and the decimation of indigenous fauna numbers by shooting, poisoning, habitat destruction and foxes distressed him. He was concerned by and sought solutions to the wind erosion and sand-drifts that plagued Broken Hill and constantly threatened his and Margaret's and many other resident's homes over the early decades of the twentieth century.

As a result of his botanical studies, home experimentation and field trials, Albert had, by the commencement of 1936, developed an effective regeneration technique: fence to exclude stock and facilitate the regrowth of the natural vegetation. Furrowing to facilitate moisture absorption and seed and soil retention, seed spreading and the planting of native trees and shrubs complemented this main technique.

In August, 1936, Albert initiated the construction of the first set of Broken Hill regeneration reserves. He lived to see them successfully develop but sadly, aged 52, a brain tumour cut short his life. Margaret Morris and other members of the Barrier Field Naturalists Club continued the work. After the Second World War (1939-1945) new reserves were constructed and by 1958 Broken Hill was fully encircled by a completed regeneration area.

The work of Albert and Margaret Morris and their restoration colleagues in Broken Hill ranks alongside the efforts of Ambrose Crawford (1935 onwards) on the north coast of New South Wales and Joan and Eileen Bradley in Sydney (1960s and 1970s) in the pioneering history of bush regeneration in Australia. Presented here is a concise chronology of the main events that led to the construction and completion of the innovative Broken Hill regeneration area. Albert's work on two tree plantation projects (1936-approx.1938) and another regeneration project (1936-1939) that involved the fencing of two Broken Hill reservoir sites to encourage natural regrowth of vegetation, is also documented in the chronology. A detailed essay, chronology and a map on the same subjects are available for viewing at http://aabr.org.au .

c1880-1900: Overstocking by pastoralists, timber felling and rabbits leads to widespread native vegetation loss in the far west of New South Wales and many parts of Australia. Extensive soil erosion develops.

c1900-1920: In the absence of government facilities and research it is largely left to concerned local residents in Broken Hill to study and devise solutions to the erosion problem. Dr William MacGillivray observes that fencing to exclude stock promotes native vegetation regrowth. Albert Morris becomes interested in and studies the botany and ecology of the arid landscapes of far western New South Wales.

1920: MacGillivray, Albert and Margaret Morris form the Broken Hill based Barrier Field Naturalists Club (BFN), a natural science, history and cultural organisation.

c1920-c1930: Albert Morris participates in BFN field trips and lectures on and studies topics such as botany, seed viability, local fauna, the impacts of pastoralism and introduced animals, ecology, plant propagation and erosion and its causes.

1935: Albert participates in field trials that test fencing, furrowing and seed dispersal regeneration techniques.

1935: Albert, Dr Ian MacGillivray (son of Dr W MacGillivray) and Edmund Dow of the BFN lobby the NSW state government to ban the cutting of green timber in the far west of the state and to fence the eroded Broken Hill Common to promote regrowth of the natural vegetation and so control sand-drift there.

1936 April: Albert, I. MacGillivray and Dow of the BFN make submissions to the NSW Soil Erosion Committee during its visit to Broken Hill. Albert calls for the fencing of sections of paddocks on pastoral stations to foster the regrowth of native vegetation and to encourage natural seed distribution.

1936 May: Albert agrees to advise the Broken Hill Zinc Corporation on the development of two planted tree plantations to control sand-drift near it new mining operation.

1936 May: Albert and the BFN seek permission and funding from the NSW government to fence the land of the two water reservoirs (Waterworks Hill and Block 10 Hill) in Broken Hill, to allow natural regeneration of the native vegetation.

1936 August: Albert negotiates with and convinces the management of the Zinc Corporation to construct regeneration reserves in the south-west sector of the city. The intention is to fence and exclude stock and allow the natural vegetation to regenerate. The other two Broken Hill mining companies agree to participate. These regeneration reserves are the first reserves of what will eventually become the Broken Hill regeneration area.

1936 October-November: Construction of the first set of regeneration reserves commences.

1937 February: Construction of the first set of regeneration reserves is completed.

1937 August -September: The regeneration reserves are extended to the south of the city.

1937 September: The NSW government approves the Morris/BFN plan to fence and regenerate the surrounds of the two water reservoirs in Broken Hill, Waterworks Hill and Block 10 Hill.

1937 December - 1938 March: The regeneration reserves are extended along the north-west sector of the city.

1938 August: By this stage of their development all of the regeneration reserves have been left to regenerate naturally, except for one, which has been ploughed for scald treatment, irrigated and partly planted with trees and shrubs.

1938 December - 1939 March: The regeneration reserves are extended to the south-east of the city.

1939 January: Death of Albert Morris due to illness.

1939 April: The land of the two city reservoirs, Waterworks Hill and Block 10 Hill is fenced and the reservoir regeneration project becomes operational.

1939 October: At this stage of their development some of the regeneration reserves have had seed scattered in them, planting has been done in some and others have been left untouched. One reserve has been irrigated and planted. The regeneration of the natural vegetation is progressing well, due to the good rains of this year.

1940-44: During the Second World War (1939-45) no further reserves are created. Margaret Morris is extensively involved in their botanical management and also reports on and publicises them in a journal and numerous newspaper articles. Broken Hill is afflicted with a severe drought and there are frequent dust storms in 1944-45.

1946 May: NSW Premier McKell visits Broken Hill and is urged by civic administrators to take action to solve the dust problem. A Broken Hill regeneration conference is held in October.

1948: NSW Conservation Minister approves a plan to construct further regeneration reserves to the north and east of Broken Hill.

1951-58: The final regeneration reserves are constructed: one to the north of the city (1951), one to the north-east (1953) and the last, to the east (1958). The construction of the Broken Hill regeneration area is completed.

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(This article is a summary of the key points provided in Ardill P.J. (2017) “Albert Morris and the Broken Hill regeneration area: time, landscape and renewal” Australian Association of Bush Regenerators. Sydney.)

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