Wilma's fashion farm

by S.J.J.F. Davies
(Chairman, Wiluna Emu Farm, Committee of Management)
Photography by Simon Cowling

In 1970 interest in farming Emus in W.A. was stimulated by Dr Hs. M. Kaegi. He had visited the Little Karoo in South Africa, had seen Ostrich farms there and considered that Emus could be farmed in the same way in Australia. Dr Kaegi was most interested in producing Emu leather. He established a partnership with a farmer at Kalannie and set up a farm there. He had many difficulties with nutrition of the birds, with artificial incubation of the eggs and with the removal of fat from the skins. The farm never built up a sufficient number of birds to approach commercial operation and closed in 1973.

In 1976, Applied Ecology, a company established by the Commonwealth Government to promote enterprises for Aboriginal communities, investigated the possibility of establishing an Emu farm at Wiluna to produce Emu leather. Wiluna looked suitable because it had a large Aboriginal population, a good underground water supply for irrigation and a dry climate.

The farm was established in 1976 on the site of the old W.A. Department of Agriculture Research Station.

The Wiluna farm suffered all the trials of a remote location and was often chronically short of equipment, animal food, spare parts and trained staff. Funding was inconsistent and inadequate for development of a new industry. Nevertheless, useful work was done.

The Wiluna Emu Farm is now well on the way to self-sufficiency. In the meantime a private enterprise group, led by Dr George Hobday and Peter Wilson, have established a second Emu farm at Mt Gibson.

Biology of Emus

Emus live throughout Australia. Their social unit is a pair which occupies a home range of about 30 sq km, smaller in wetter areas and larger in the desert. From December to April the pair chase other Emus out of a territory in which the hen will lay a nest of eggs sometime from April to August. Laying can occur at other times but most breeding is in winter. The female lays 8-20 eggs initially at four-day intervals, reducing to two-day intervals at the end of laying. Some early eggs are dropped at random, away from any nest site and are abandoned.

The male Emu incubates the eggs. He begins sitting as the clutch nears completion, often before the last egg is laid. The female usually leaves the area of the nest once laying is finished. The male's body temperature falls and his body approaches a state of torpor. He sits without interruption for the eight week incubation period, rarely standing, drinking or defecating in this time. In captivity some males will feed during incubation and an odd female will incubate but these are exceptional events. Once the chicks hatch the male stays with them, brooding them at night, until they are 4-7 months old. They are then left to their own devices.

Emus will lay when 18-21 months old and live more than 12 years, but some females are unproductive after 10 years.

Emus feed on parts of plants where nutrients are conc-centrated — seeds, fruits, young shoots, flowers — as well as insects. Distribution of these foods is patchy, both in space and time. Emus move constantly (except the male when it is incubating) to keep in touch with their food, being one of the most nomadic of all our animals. When Emus find abundant food they stay in that place until it is nearing exhaustion. They are able to live many months without food, travelling long distances in search of it. During these times they live on fat stored in the body and finally on other body tissues, so that they can remain active at less than half their optimum body weight. Emus breed well only when seasons are excellent. They will remain contentedly on a farm provided they have abundant high quality food. If they do not, they will be restive, knocking themselves on fences and laying few if any eggs.

Emus grow fast provided they have a good food supply. At fifteen months they are over two-thirds adult weight and almost adult size. Up to this age they often live together in non-breeding flocks, moving about in search of food.

Emus eat large quantities of high quality food — so it is best to grow their supply (above).

The paternal instinct (right).

Emu chick.

Emus have a high requirement for water, preferring to drink every day. Individuals differ in the amount they need daily, but in summer it may exceed six litres for some birds. Very young chicks depend on succulent plants for their water because they are often hatched far from pools.

Except when they are breeding, Emus may gather in large flocks at some resource — food, water or at the edge of a road or river — but once they are mature pairs prefer solitude, tending to avoid other birds if they can. On the other hand they do not maintain long pair bonds. A hen usually moves away once her mate is sitting, sometimes mating with another male that season and rarely remating with the same male in the following one.

Principles of Emu Farming

The Emu's value as a farm animal depends upon its high reproductive potential, its fast growth rate and its ability to live in crowded conditions. A pair of Emus can produce at least 10 eggs a year under good conditions, that is if provided with high quality food during the six months before laying. Experience at Wiluna shows it to be realistic to expect to raise 5.5 chicks from these 10 eggs. From these 5.5 chicks the yield after 15 months should be:

4 sq m leather
150 kg meat
5.5 kg feathers
5 L oil
in addition to the egg shells of the infertile eggs.

Farms aim to retain as few animals as possible to breed as many as possible. Because the Emu has evolved to do best on a high quality diet (animal breeding has produced the same result with domestic stock) the breeding birds and the commercial flock must both be well fed. The smaller the core stock needed to produce the commercial throughput the better.

Emus cannot be driven easily; they tend to jump fences when cornered. It is therefore necessary to have laneways along which they can be moved and to avoid moving them often. They will gather at food and water points so that they can be moved by placing these where you want the birds to go and depriving them of these resources elsewhere.

Emu skins are easily damaged. Emus panic when being caught and handled so it is better to avoid doing this to commercial birds. They must be killed instantly without prior handling if the skin is not to be damaged, as well as for humane reasons. Most operations can be performed without catching the birds.

Practice of Emu Farming

Pens

Pairs of Emus need to be isolated from other pairs when they are preparing to breed. Ostrich farms use 2 ha pens for breeding, but .25 ha has proved large enough for Emus at Wiluna. The pens are well vegetated and although some fighting occurs, it is not common. Females are removed from the pens as soon as the clutch is complete, sometimes a week after the male begins to sit.

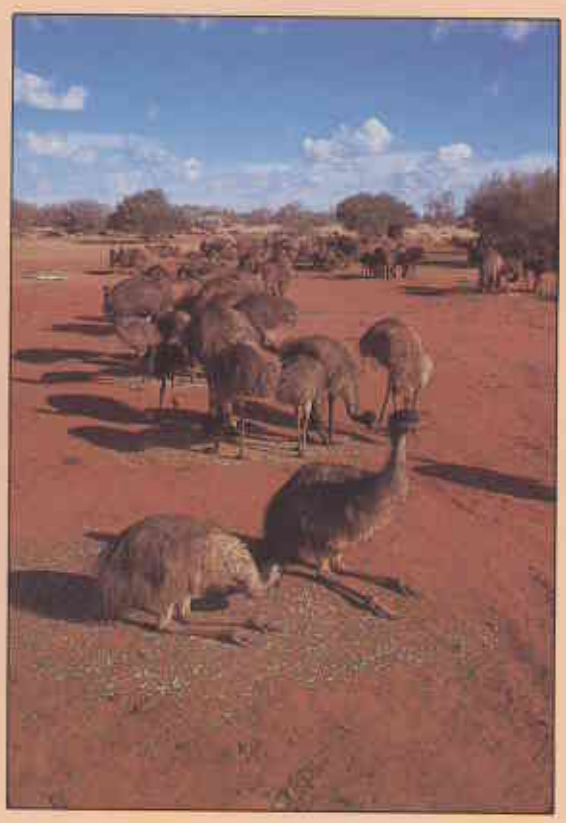
The females remain until the next mating season in large pens, 1.5 to 10 ha in area. The chicks are independent and, provided they are given heat and shelter, can be taken away from the male at one week old or less and reared separately in small pens, 5 m x 35 m, fifty to a pen. This arrangement saves some labour but the chicks can also be left with their father until they are seven months old, provided a high level of nutrition is maintained in the breeding pens. If the chicks are taken away early the males can be kept for the rest of the year in holding pens, similar to those used by the females.

Food

Emus can obtain little useful food from their pens; they depend entirely on provided food.

They need about 500 g of grain and 400 g (wet weight) of chopped lucerne a day, somewhat more when laying, and less when small. Young chicks need high protein pellets (e.g. Turkey Starter) until they have passed the phase of maximum growth at 12 weeks of age. Their requirement for this food increases with age, rising to about 300 g at 12 weeks of age. It is better to keep Emus and lucerne production separate as the birds' trampling damages the growing plants. At Wiluna lucerne is cut daily and fed green to the birds.

Water must be provided in each breeding pen at a height available to tiny chicks and in a position where it is not subject to damage by fast moving Emus. More fast movements are near the fences so the water points are set near the ground, away from the fences but within view of the laneways.



Painstaking work — but carved emu eggs fetch a high price (above).

Tucker time (right).

A selection of colours for 'caped crusaders' — cured emu hides (top).

High fashion outback-style. (above).

Commercial Products

Emus at 15 months old produce .65-.74 sq m of usable body skin. African Ostrich farmers sell their skins wet, getting $10 per sq.ft., but Australian leather experts recommend that Emu farms tan the skins before sale. A small tannery has therefore been established at Wiluna. The skins must be undamaged. Leg skins are most attractive when tanned and sell as high fashion leather for fancy belts and similar products. Each bird yields about 929-1858 sq cm of leg skin.

The only meat of commercial significance is from the legs, each bird providing about 15 kg. Ostrict meat sells at $2-$5 per kg depending on quality. When dried to biltong its weight is reduced to one-third that of fresh meat and it sells for about $17 per kg.

Each bird provides about 1 kg of feathers. There has been little demand for these but they have the potential for use in feather dusters and there is still a small market for feathers for hats of the Light Horse Brigade.

The fat on the back of the Emu can be peeled off in one piece like a skin. When rendered it yields about a litre of an oil whose medicinal properties are under investigation.

There is some demand for uncarved egg shell and a great demand for carved eggs because the shell is composed of layers of paler and paler green the deeper the carving goes. Attractive cameos can be produced and high prices are paid for premium carved shells. Some Aboriginal artists are producing carved shells of very high quality.

Farming a Natural Resource

Why farm Emus? One simple answer is that there is a commercial demand for Emu products. But there is commercial demand for uranium and the products of the *Cannabis* plant. To justify the farming of a native Australian animal on the basis of commercial demand alone will not satisfy many sections of contemporary Australian society.

This is not a conservation issue affecting the status of Emu populations in the wild. The proposed Emu industry would be an intensive farming activity based on captive-bred birds. Breeding stock may be taken from the wild initially but these birds will not be used for production purposes. The reproductive capacity of Emus is such that initial losses to the wild populations will soon be made good and the farms will thereafter be self-sustaining.

Two factors make the Emu particularly suitable for large scale farming and provide positive incentives to develop the industry once its commercial viability is established. First the Emu has evolved as an animal that feeds on high quality food and grows and develops quickly to maturity. On the basis of proportion of breeding stock needed to produce a unit increment, Emus are better farm animals than, for example, sheep. In W.A. a ewe will at best produce twin lambs in a year. Many lambing percentages are lower than this. Results from the Wiluna Emu Farm indicate that Emus have no difficulty in raising six or seven chicks from a nest. Allowing for the need to keep male and female birds and discounting the need to keep rams (one ram can serve sixty ewes), Emus are still more productive than sheep in proportion to the amount of breeding stock that needs to be kept.

A second reason for developing an Emu farming industry is that it appeals to Aboriginal communities. It is helpful to find industries that are commercially viable and fire the imagination of Aboriginal communities. Emu farming does just that. The Ngangganawili Community at Wiluna has fought hard to maintain the Wiluna Emu farm, sometimes against intense pressures. It does this not only because it can see a commercial return in the future, but because the Emu is part of Aboriginal tradition. In a real sense it belongs to them whereas sheep and cattle are part of the European tradition and heritage. As a result Aborigines are more motivated to produce Emus than they are to produce animals from a foreign culture.

If this is so, why support both Aboriginal and European farming of Emus? The answer lies in the need for a commercial quantity of Emu products. The Ostrich industry thrives on 300 farms. In order to market the products satisfactorily a large annual production needs to be achieved. Aboriginal communities will be aided by the greater marketability of their product that increased production can assure. European farmers will be assisted by the diversity that an Emu farming component of their business can provide.

So it is not merely a matter of there being a commercial market. Emu products will be distinctively Australian and could contribute significantly to the nation's export drive. Emu farming may also contribute to the much-needed diversification of our rural economy. And it may greatly assist both motivation and employment for Aboriginal people.

'He can't fly but I'm telling you . . .'

There is still much to learn about Emu farming. More research and development is needed for Emu husbandry techniques, product processing and marketing. Nevertheless current prospects are encouraging for the farming of Australia's first native domestic animal. □

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Shipwreck at Broome (Jiri Lochman).

EDITORIAL

For more than 100 years W.A. has recognised the importance of protecting significant areas of its natural heritage.

Today, about 4.5 million hectares of our State is classified as national parks, vibrant natural museums ranging from the hardwood forests of the south-west to vast inland deserts that represent our unique terrestrial flora and fauna.

Until now, however, there has been a missing element: the marine environment.

Clearly, its absence has made our park system less representative of W.A.'s environment, especially considering that the State has some 12700 km of coastline.

Recently a start was made to address this imbalance with the official opening of the Marmion Marine Park, W.A.'s first marine park.

The primary objective in establishing this park, which is located on metropolitan Perth's doorstep, is to conserve significant examples of our marine heritage, and to encourage public understanding, appreciation and continued enjoyment of the marine environment in ways which will leave it unimpaired for future generations.

These same values apply to the proposed Ningaloo Marine Park which is situated along 260 km of the State's coastline south of Exmouth. Ningaloo will be vested in the National Parks and Nature Conservation Authority as a marine park in July.

Both of these marine parks not only allow for the development of proper management techniques to protect the marine environment, but also to enhance recreation.

Marmion reef has long been a popular holiday destination for many Western Australians who fished for the huge groper and crayfish offshore, and swam in the protected lagoons.

Ningaloo might be less well known because of its isolation, but the tourist industry is expected to promote this area of our coastline and the adjacent Cape Range National Park and, as a consequence, it will become one of the State's premier tourist attractions.

The establishing of marine parks will provide many benefits.

Some intangible, such as the knowledge that future generations will be able to appreciate areas of unspoiled natural beauty.

Others more tangible, such as the enjoyment of visiting a marine park.

There will also be benefits in terms of jobs created and the expansion of a growing and viable tourist industry.

Furthermore, marine parks will provide ecological benchmarks for research into natural processes and into the relative effects of marine and coastal uses.

W.A. has a responsibility to protect special marine environments and to encourage public appreciation of these areas now and in the future.

Our marine parks will do this.