

Native fish demand boosts business for breeder

A SCHOOLBOY interest in aquaculture has led to the establishment of Australia's largest single commercial hatchery for native food and sport fish.

Uarah Warm Water Fish Hatchery, which last summer sold almost 300 000 fish, has been developed over the past five years by 30-year-old Bruce Malcolm and his father Jim near Grong Grong in southern-central New South Wales.

Bruce said recently he had become interested in fish-farming while still at school, and maintained that interest while studying biology. At first he examined trout-farming but felt there were too many producers and not enough markets, so turned to native fish.

For 18 months he searched for a suitable location, finally selecting the present 20-hectare site. It is on Bundijerry Creek, just below Berembed Weir; the creek carries irrigation water from the weir in summer, ensuring an adequate water supply during the summertime fish-breeding season. However, because of the controlled flow and the slight rise in the property away from the creek, the hatchery remains flood free.

'The selection of the site was critical to the success of the whole venture, and that's why we were prepared to put so much time into finding the right spot,' Bruce said.

Grong Grong is not a very large dot on the map of New South Wales, but it is about 80 km north-west of Wagga and just over 20 km east of Narrandera. This is an area that has been central to the development of breeding techniques for native freshwater fish, particularly Murray cod, golden perch and silver perch. The techniques for breeding these species were first

developed at the Inland Fisheries Research Station at Narrandera.

Bruce has benefitted from his close proximity to the research station and, like other breeders of native fish, has utilised refinements in hatchery techniques developed there. And of course he also has welcomed the decision to use all fish produced from the Department of Agriculture hatchery for stocking public waters, leaving commercial sales in the hands of licensed privately-owned hatcheries.

Uarah Hatchery has a total of 18 earth ponds. Twelve hold adult fish and food species (such as carp and yabbies), and range in area from 0.1 to 0.2 hectare (0.25 - 0.5 acre).

The six ponds used to grow newly-hatched fish to saleable size range



Fish hatchery proprietor Bruce Malcolm.



The Uarah fish hatchery pond-area is relatively flat but remains flood free.

from 0.25 to 0.4 ha (0.6 - 1 acre). There are plans for further ponds to meet expected growth in demand for fish.

All the ponds contain raceways and are connected by a series of underground drain and fill pipes. The emphasis has been on maximum efficiency at minimum cost, and, while Bruce admits to an occasional 'disaster' such as a burst pond wall, his engineering procedures have been highly cost-effective.

The fish are bred by the widely-used hormone-induction technique. The eggs are incubated in flow-through trays, with water quality and water temperature closely monitored.

Bruce uses bore water for this process. He said the slightly saline, 'hard' bore water did not harm the eggs or newly-hatched fish but did kill fungus and some parasites. The water also was exposed to ultraviolet light, in much the same way as water used to purify oysters before sale, to ensure there were no organisms that could harm the

larval fish. The bore water is low in oxygen, so it is splashed to raise the oxygen content before being used in the hatching room.

When the fish have absorbed their yolk sacs and are ready to feed for themselves — from three to 10 days, depending on the species — they are transferred to the open ponds. These ponds are filled with water about 10 days earlier, and enriched with an organic fertiliser such as fowl manure or hay, or an inorganic fertiliser such as super-phosphate. The fertilisers boost production of plankton, on which the small fish feed. Water quality and parasite levels are monitored daily, and the ponds treated if necessary.

When the fry reach 40 to 45 mm (a little under two inches) — an average of seven weeks after stocking — the ponds are emptied and the fish transferred back to the hatching shed. There they are placed in a salt solution to kill any parasites, counted into a plastic bag with a mix of water and pure oxygen, and finally packed in a

cardboard carton ready to be transported. The fish can live in that pack for about four days.

Usually they are sent by rail, but can be sent by road or by air; long-distance deliveries always go by air.

Most of the 300 000 fish sold last summer were golden perch, but included 60 000 silver perch and 63 000 Murray cod. One of the features of the Uarah Hatchery has been its consistent success in producing the popular but traditionally difficult-to-breed Murray cod.

'The Murray cod is a species that you have to take a lot of time and trouble over. You only have to ask any breeder to know it's not an easy fish to produce year after year. The water quality has to be good, parasite levels have to be kept down and they have to be fed at just the right time. However the price is directly related to the cost of breeding and the time involved, so it's worth the extra effort,' Bruce said.

Last summer he put 75 000 Murray cod larvae out into the



This is where the hatchery's production line begins: during the spawning season adult fish are held briefly in the tanks in the background, and their eggs later hatched in the shallow trays. From here the fry are transferred to large open ponds.

ponds and sold 63 000 of them as fry, a result he regards as satisfactory.

Bruce believes the farm could produce one million fry if required. He regulates production to meet demand, and demand was lower than expected last summer because of the drought. For instance he was holding a total of 38 male and female adult golden perch as brood stock, but needed only six females to produce the 170 000 golden perch fry sold.

The fish normally breed in October, with fry available from late December until late April. Following widespread heavy rain, he is hoping for increased orders this summer.

'The demand for native fish has grown fairly sharply in the last couple of years, despite the drought conditions last summer,' he said. 'The basis of this demand is still the farmer who wants to put fish in his dams for food and sport, but there are also many who are now on-growing the fish for sale to the fresh-fish markets.

'I think that's an area likely to grow. For example, commercial fishing is banned during the natural

breeding season from September to October inclusive, and that creates a demand for fish that farmers could meet. At Easter, too, demand for fish is always high. If you have fish in a farm dam you can harvest them when the price is best.'

Some of the Uarah fry have gone to larger waters. Shire councils, for instance, have bought fish to stock local water storages and water treatment ponds, and service clubs have stocked waterways for community recreation and as a tourist attraction. The Commonwealth Department of Capital Territory is another buyer, taking several thousand fish for stocking Lakes Burley Griffin, Ginninderra and Googong in and around Canberra.

Fish sales have not been restricted to New South Wales. Bruce Malcolm has sold fry into every Australian State except Tasmania and the Northern Territory. Fish hatched at Uarah have gone at least as far north as Cairns in Queensland.

But, with the growing interest in native Australian fish, Bruce Malcolm believes his fish, and his farm, will go a lot further yet. ☞



One of the fry ponds. The small concrete raceway houses fill and outlet pipes, and also is the collection point when fry are removed from the pond for sale.

Commonwealth Government Fishing Industry Research Trust Account

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- the training of persons for any such research
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- vocational training and technical education for persons engaged in the fishing industry
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Under the broad objectives of the research program, emphasis is placed on development of the 200 nautical mile Australian fishing zone and general expansion of the Australian fishing industry.

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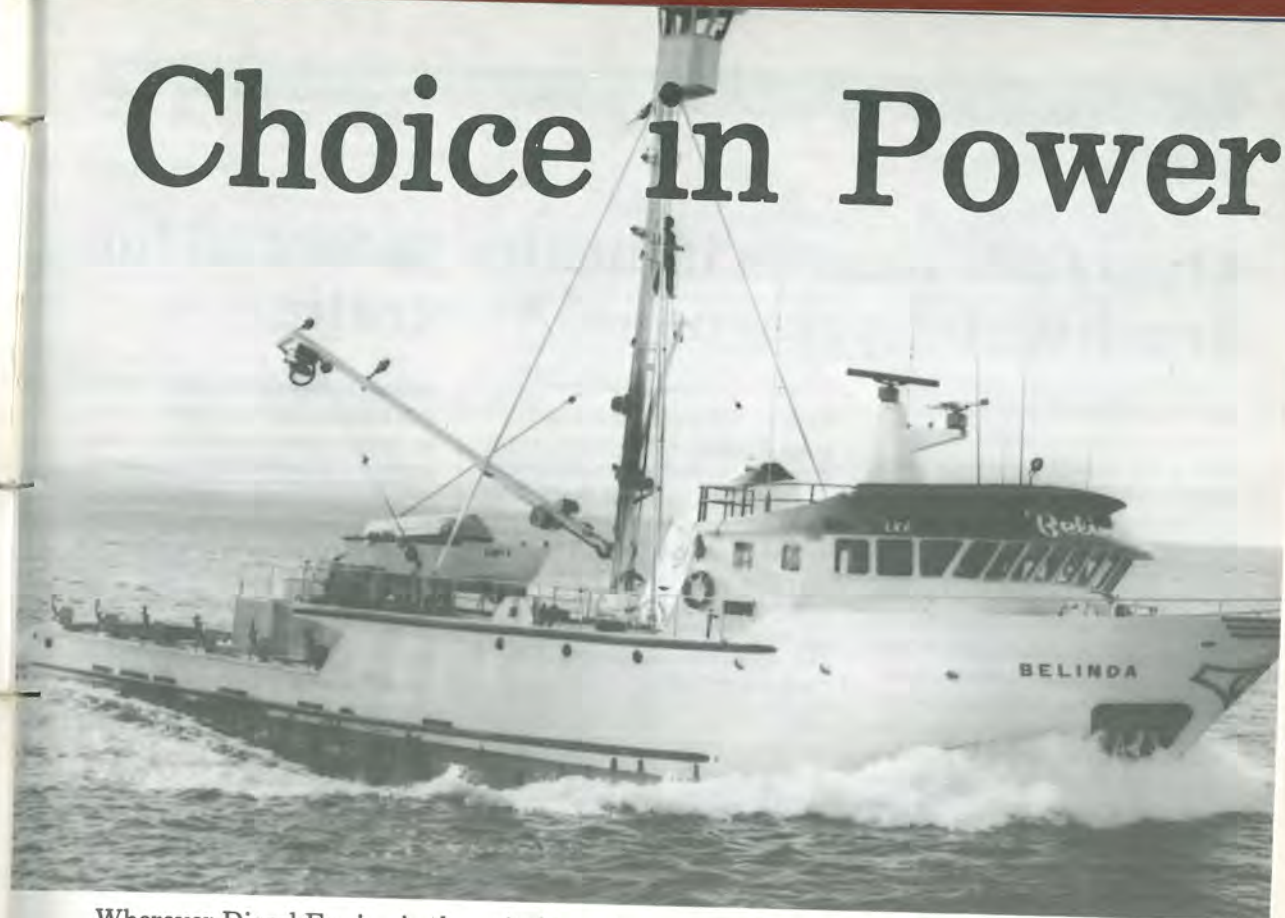
- potential benefit to fishing industry throughout Australia
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Applications close on December 31, 1983. Forms are available from:

The Secretary,
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