South-west duck shooting season

by Clifford Young

Along with waterfowl, duck-shooters in Western Australia have to pay the penalty of living in one of the driest continents in the world and must learn to take the good seasons with the bad.

Very little of this state's inland water is permanent, it being mainly dependant on each year's rainfall for replenishment. This, together with the flat "salt-pan"— like nature of many of the lakes, means that in years of low rainfall the available water is concentrated in a few small areas. Likewise, waterfowl are also concentrated and therefore are particularly vulnerable to any hunting pressure. Consequently, in years of poor rainfall, duck-shooting is prohibited throughout the South-West and the Eucla Land Divisions. A continuous open season applies in the remainder of the state due to the vast areas and very small number of inhabitants involved, and to the difficulty of access to most breeding areas following rain.

In the South-West and Eucla areas duck-shooting seasons are held sometime between January and March, if at all, and are classified according to prevailing conditions. Full seasons are declared when conditions for breeding have been average or better-than-average, restricted seasons when conditions have been poor and no seasons when conditions have been particularly poor for a number of years. A full season normally lasts 10 weeks and shooters may take 10 birds of any game species each day. However, a restricted season is limited to four weeks duration and a bag limit of only five birds a day per shooter.

Because of the recent interest shown by duck-shooters in this state and others concerned with the management of waterfowl and wetlands in Western Australia a report has been produced by the Department of Fisheries and Wildlife giving an account of the biological principles involved in decisions concerning duck-shooting seasons in the south-west. The following is based on extracts from the report which is titled *1980 Review of Rainfall and Wetlands in the South-West of Western Australia* by J. A. K. Lane and D. R. Munro of the Western Australian Wildlife Research Centre.

Rainfall, Wetlands and Waterfowl Breeding

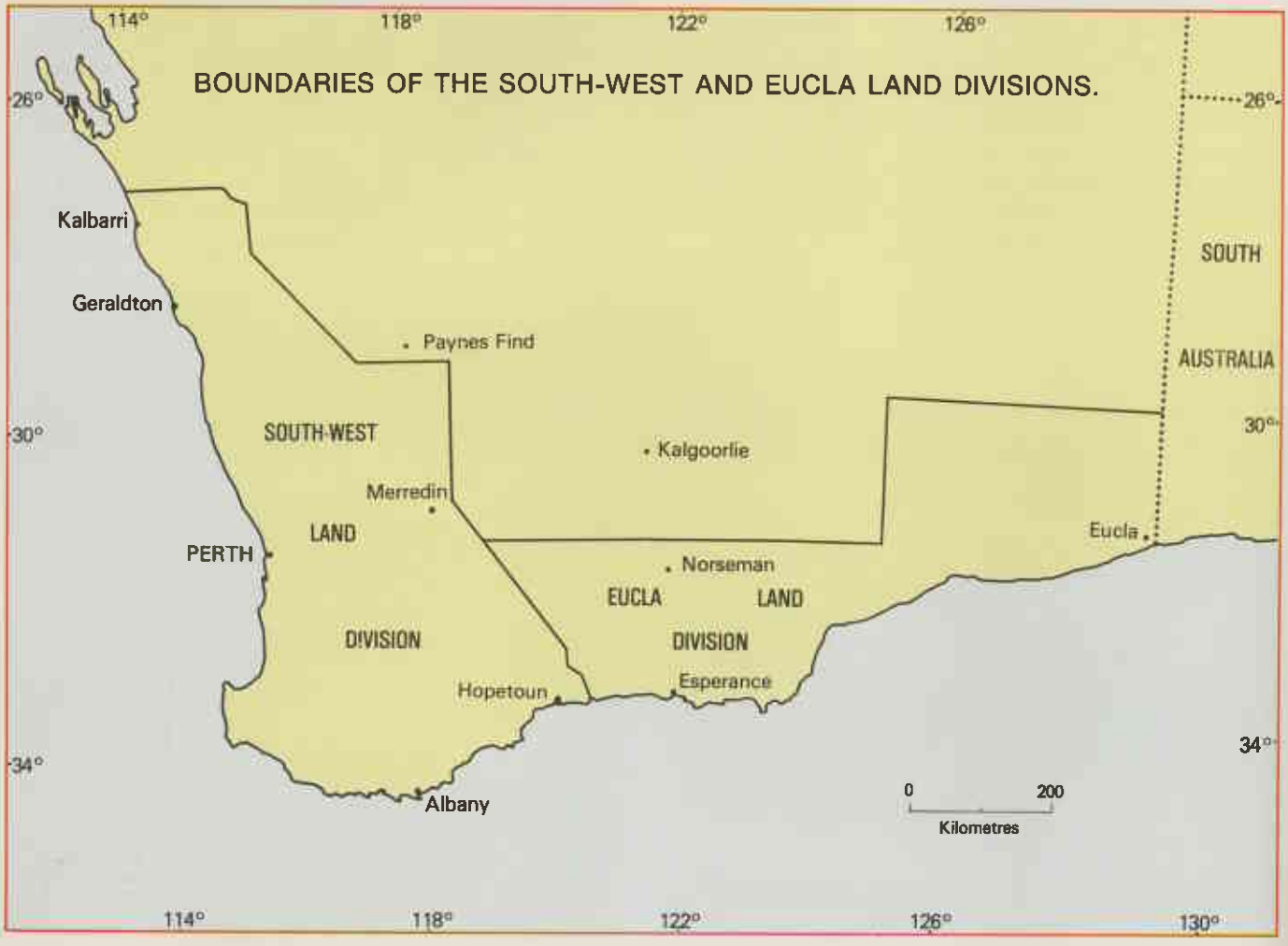
Rainfall in the south-west of Western Australia is markedly seasonal. On average, about 70 percent of the total annual rainfall occurs during the months May to September, with half of this being recorded during June and July. As a result, wetlands throughout the south-west show marked seasonal variations in water levels with depths rising during the wetter months of winter and spring and then falling during summer and autumn when little rains falls and evaporation rates are high.

Waterfowl breed when conditions are most favourable, that is, when food and water are most abundant. In the south-west of W.A. this occurs during spring and early summer when water levels reach their peak and warm weather accelerates the growth of aquatic plants and animals.

Nest construction and egg-laying may commence as early as June, and continue until November or even December. For most species

▼ Mountain Duck. (left) and Grey Teal are two of the more abundant game duck species found in Western Australia. (Photo Copyright A. G. Wells).

▲ Technical Officer, Don Munro, taking depth gauge readings and water samples from a lake in the wheatbelt. (Photo C. Young).



however, peak nesting activity appears to be during August and September. Broods of ducklings are most commonly seen from September to November and the great majority of young birds are flying by January. Waterfowl numbers are therefore at their peak in the New Year. This is when duck-shooting seasons are held.

Duck Shooting Seasons

Duck-shooting seasons are confined to January-March each year in order to minimise their impact on duck populations. This can be explained as follows: Game species of ducks are highly fecund, that is, they are capable of producing large numbers of offspring each year, provided conditions are favourable (single broods of five or more ducklings are a common sight during spring and early summer). Consequently, at the end of each successful breeding season, duck numbers are swollen by the addition of new birds. However, as the summer-autumn dry season progresses, and conditions for waterbirds deteriorate, many birds die due to a variety of natural causes such as lack of food or water, predation and disease.

Such deaths are referred to collectively as "natural mortality". First-year birds in particular have a high rate of natural mortality, largely due to lack of experience in locating natural resources. By holding the shooting season early in the year one is able to minimise the impact on duck populations since a significant proportion of the ducks killed are birds which would normally die anyway before the next breeding season.

Thus, shooter-induced mortality is timed to replace natural mortality, rather than add to it. It follows that, upon completion of breeding, the sooner the shooting season is held, the less the effect on the number of birds surviving to the following breeding season. The later the season, or the longer it extends, the greater the effect on numbers surviving to breed.

▲ The northern face of the Stirling Ranges looms over this small lake in the lower South-West. (Photo C. Young).

▼ Flooded vegetation provides ideal nesting sites for several duck species as they are protected from predators. (Photo C. Young).

▲ In good seasons, W.A.'s wetlands provide sanctuary for many bird species besides ducks. A flight of Banded Stilt takes off from a wheatbelt lake. (Photo C. Young).

▲ Increasing water salinity in the State's South-West has killed vegetation bordering many wetlands. (Photo C. Young).

▼ Late afternoon reflections at a water monitoring site on the Coblinine River. (Photo C. Young).

Variations in Rainfall and Conditions for Breeding

Rainfall, of course, varies from year to year, and as a consequence so does the availability of water for breeding purposes. Thus, in conditions of average or better-than-average rainfall, conditions for waterfowl breeding are usually good and the number of young produced is high; whereas, in years of exceptionally low rainfall, little surface water is available and production is greatly reduced.

For example, in the past ten years, duck-shooting seasons have only been declared six times. For the remaining years, particularly dry conditions have been unfavourable for duck breeding and seasons have not been declared open. Although the last duck shooting season was in the summer of 1978-79, good rains throughout 1981 improved conditions greatly to the extent a season has been declared for 1981-82.

Obviously, waterlevels at wetlands throughout the south-west are crucial to any decision as to whether or not a duck-shooting season will be held. Prior to 1978 conditions for waterfowl breeding were assessed each year during ground and aerial surveys of important waterfowl sites. Water levels were recorded as dry, low, half-full, high or full.

Notes were also made of waterfowl numbers and, where possible, waterfowl breeding activity. However, in 1977 it was decided that a more precise system of evaluation was required and a programme of installation of depth gauges on selected wetlands was undertaken. Twenty-seven gauges were installed from November 1977 to December 1978, 29 in 1979 and a further 27 in 1980. Another 25 gauges were installed during 1981 and more are proposed for 1982.

The wetlands which have been gauged are distributed throughout the south-west of the state, mainly south of a line through Dongara, Merredin and Esperance. Most are

▲ A water sample and depth reading is taken at Poorginup Swamp in the lower South-west. (Photo C. Young).

Wetland Nature Reserves (including Game Reserves) vested in the Western Australian Wildlife Authority and managed by the Department of Fisheries and Wildlife (in fact, it is now policy to instal gauges only on wetland reserves so vested). The depth gauges permit precise monitoring of water levels and thus allow more meaningful comparisons of conditions to be made from one season to another. The gauges also make it possible to determine average rates of water loss during the annual dry season and thus enable researchers to forecast "dry-out" dates for individual wetlands or groups of wetlands each year.

Together with rainfall data this information assists any decision regarding declaring a duck-shooting season and enables better management of Western Australia's game bird species.