FIRE, FLORA AND FAUNA

The Department recently received a letter from an Honorary Warden criticising controlled burning by the Forests Department during spring. "Why," asks our correspondent, "burn in Spring when the flowers are in bloom and all the birds are nesting; why not burn in Autumn?"

In fact, one might ask, why burn at all?

The answer is not a simple one; burning is carried out for a number of reasons and these were comprehensively explained in "Forest Focus", No. 3, December, 1970, and acknowledgement is given to that source for much of the information in this article. Basically the Forests Department burn in order to reduce fuel for accidental fires, but **not** to burn is "preservation" not "conservation", for fire is an integral part of nature in many forest areas. Research has shown that the native flora of the south-west forest belt, having evolved in a fire environment, has inbuilt mechanisms to ensure its survival of occasional fires; in fact many wildflowers, shrubs and trees depend on fire for germination and their continued existence.

This burning for rejuvenation has also been shown to be of importance in the conservation of fauna, because in the long term it conserves the habitat of many animals. In October 1969, Forests Department research officers made a study of the effects of aerial controlled burning on kangaroos and wallabies in the jarrah forests. (Previously, other animal, bird and wildflower observations have been carried out over wide areas of state forests in respect to prescribed burning.) In the study, a 60% burn was achieved. Approximately 2/3 of the kangaroo population left the area of the burn for cover in adjacent forest outside the unit, while only 5% of the wallabies left the area. No evidence of injury or mortality was found.

The rotational controlled burning programme undertaken by the Forests Department is largely done in spring on a four to six year cycle. This decision is influenced by a number of factors.

Research has shown that satisfactory weather conditions occur most frequently and most reliably in spring, starting during October in the northern forest areas and progressing through to December in the southern karri forest.

To achieve a similar fire intensity and safety from "breakaways" during autumn burning, the summer drought effects must first be alleviated. This generally requires three or more inches of rain to return tree bark, scrub foliage and heavy fuels such as ground logs (which when wet provide safe refuge for many small animals) to the low inflammability levels of late spring. Occasionally such rain falls in early April and extended suitable burning weather may follow. However, this is unreliable, as additional rain may prevent further burning.

For these reasons, reduced scenic values are justified once every five or six years when rotational burning is carried out on an area. Even then, the conditions conducive to good controlled burning occur after the main flush of spring flowering so that burning begins as the wildflower display wanes.

Even under the best conditions there are always pockets of forest unburnt due to insufficient and moist forest litter. These moist areas and swamps in the forest give shelter to numerous small animals and birds. During autumn burning a more even and more intense burn will result, with consequent danger to forest wildlife.

That some nests and young birds are destroyed during controlled burning is not denied. However, spring burning allows a slow-moving fire of low intensity, enabling fauna to escape; the low flame (ideally 12 to 18 inches) does not destroy all of the ground cover nor penetrate the top soil. During autumn burning the fire may move too quickly and burn too intensely to prevent fauna escaping and will result in greater destruction of habitat.

This Department and the Forests Department are aware that there is still much to be learned about the effects of fire on the flora and fauna of the southwest, and the Forests Research Branch at Dwellingup is undertaking research into the effect of burning on plants, birds and small animals. This Department's Fauna Research Branch has been undertaking similar research in relation to the effects and use of fire on fauna reserves. It is apparent that in general the policy of autumn burning is not justified.

CROCODILE RESEARCH IN QUEENSLAND

A Government appointed zoologist is to undertake research into crocodiles and the crocodile skin industry in Queensland. At present there is no legislation governing crocodiles in that State, but it is expected that the Department of Primary Industry (Queensland's fauna authority) will eventually control crocodile harvesting.

Not before time; other States have for many years made numerous requests to Queensland to introduce legislation which would prevent interstate crocodile poaching.

Some preliminary surveys have already been undertaken, and the zoologist's initial study is expected to be completed within three years. Both the saltwater and freshwater crocodile are already protected in W.A. Protection for the Saltwater crocodile followed a report of the status of crocodiles by Dr H. R. Bustard in 1969. Queensland would seem to have both money and time to spare on their research—Dr Bustard's very full and comprehensive survey of the W.A. situation took less than one month!