

On the rocks

THE ability of granite outcrop plant communities to regenerate after fire is the subject of a study now in its fourth year.

The location of the study is on Chiddarcooping Nature Reserve where a lightning strike in 1987 caused extensive bushfires.

The study to date has revealed that plants respond to fire in a variety of ways.

Seeders are killed, and regenerate only by germination of seed, whereas resprouters can regenerate by seed or by shoots sprouting from underground rootstocks or trunks.

The Chiddarcooping study has established that an unusually high percentage of seeders are found in the granite communities. Of the 79 perennial plant species investigated, 77 per cent were seeders.

This compares with 34 per cent seeders observed by Professor John Pate of the University of Western Australia in sandplain near Jurien.

South coast heathlands

by Steve Hopper

on Two Peoples Bay Nature Reserve may have as low as 8 per cent seeders (research by CALM's Angus Hopkins).

The high proportion of seeders at Chiddarcooping suggests that cautious fire management is needed for Wheatbelt granite outcrop communities.

Sufficient time needs to elapse between fires for an adequate seed bank to be developed in all seeder species.

Another interesting aspect of the study was the recording of 29 species not previously known on Chiddarcooping Nature Reserve.

These 29 represent a 22 per cent increase in the number of granite community plants recorded previously by consultant botanist Arthur Weston in a 1983-85 survey of the Reserve.

Of the 29 new records, 15 were annuals, five were perennial legumes, five were other perennial shrubs,

and three were short-lived fire opportunists. One of the latter, *Gyrostemon subnudus*, a fleshy and widely but intricately branched shrublet, dominated the early post-fire regeneration. It was dying out in 1990, three years after the fire. A new species of blue china orchid flowered profusely in late Spring 1988, but disappeared thereafter.

The study has confirmed the view that granite communities are rich and complex, with rapid changes of species over short distances.

It is also addressing the regeneration of three mallee eucalypts confined to

granite outcrops, *E. caesia*, *E. crucis* and *E. petraea*.

A run of three good seasons after the fire has meant that some seedlings of all three species still survive.

It will be interesting to follow their survivorship over the years to come.

Observations after fires on other rocks indicate that it will take several, possibly many decades for the Chiddarcooping communities to attain their pre-fire condition. Long-term monitoring of such regeneration is essential to understand and manage effectively, the episodic regeneration of semi-arid mallee vegetation.

'Scoping very well

AN INCREASE of 1500

"This growth is an