

GLS decline in southern jarrah

by JANET FARR

The high population of the gumleaf skeletoniser moth (GLS) which causes crown scorching of jarrah in the south west has decreased over the last two years.

Janet Farr, Stephen Dick and Peter Skinner of the Manjimup entomology research team have just completed annual monitoring of the GLS population and the outbreak front.

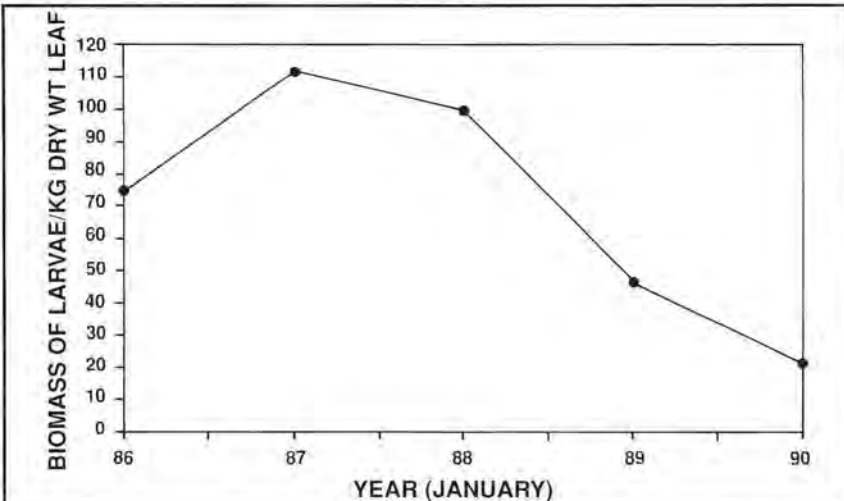
Population levels are recorded by sampling leaves from jarrah crowns using a cherry picker while the outbreak front is monitored by ground spot observational checks.

In the past, aerial flights over the jarrah forest have also been made to confirm areas severely affected.

However, for the 1989/90 GLS season the population was so low aerial observations were considered unnecessary.

The GLS population has fallen from a mean of 111.9 larvae/kg dry wt of leaves in January 1987 to 21.5 in January 1990 (see graph).

This drop can be attributed to a combination of factors, both environ-



mental (eg weather) and pathological (eg parasites).

The GLS outbreak, which persisted from 1983 to January 1988, occurred during a time of unusually low rainfall in the south west.

Before 1988 no parasites of GLS in the jarrah forest had been collected. Since then three species of wasp have been found.

It's thought that during the outbreak, the population of GLS parasites was too low to be picked up in GLS samples.

However, since 1988, parasitism has been a major contributing factor toward the mortality

of GLS.

Such observations are not surprising, as a lag time between the population of a host and its parasites is common in insect outbreaks.

Tracing the GLS outbreak front for 89/90 we found the population had withdrawn to discrete patches where caterpillars existed at a light level of infestation, but in nearby areas the population was so low that it was not visible from spot checks.

This contrasts with past years where the front extended on a northeast line from Donnybrook to Kenninup forest blocks.

According to "irruptive" insect outbreak the-

ory the patches we have identified in the 89/90 front survey could act as sites from which a future outbreak could develop.

Therefore, despite the dramatic decrease in GLS, further outbreaks could occur given the right environmental conditions.

We plan to examine and monitor the sites of current light GLS infestation to test the irruptive outbreak hypothesis.

This will enable us to determine the factors involved in GLS outbreak dynamics and establish a means of forecasting the potential for future outbreaks.