Gumleaf Skeletonizer (*Uraba lugens*) Outbreak February 2010

Preliminary survey of the extent and severity of Gumleaf Skeletonizer outbreak in Warren Region, February 2010

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Department of
Environment and Conservation
Our environment, our future

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Background

A severe outbreak of gum leaf skeletonizer (GLS, *Uraba lugens*) occurred in the southern jarrah forest from 1983-1992 such that at the peak of the infestation 90,000 ha of forest were affected. On 10th February 2010 Alan Seymour of Forest Products Commission alerted DEC Science Division (Janet Farr) of potentially high numbers of a defoliating caterpillar at Sears Rd north to Carter Rd and east onto Boronia Rd, particularly on *Eucalyptus patens*. A sample was provided by Alan Seymour which verified the species as *U. lugens.* Also in February 2010 a member of the public provided consistent reports of "a strange caterpillar with a horn" defoliating trees in Maiden Bush picnic ground in Warren National Park (observed in December 2009) and Lake Yegarup (Feb 2010). From the photographs provided the species was also confirmed as late instar larvae of *U.lugens*.

Fig 1 *U. lugens at* Warren NP, December 2009.

Action

Consequently a road survey of the 45 GLS monitoring sites (Abbott 1992) was initiated at the first opportunity, 24th February 2010. These sites provide a regional framework for gauging the extent and severity of outbreak. Population data from a previous outbreak was available for these sites (Farr 2002; Farr et al. 2004) and reappraisal of the sites was likely to be enhanced by the earlier data (Figure 2)

Approximate location for the sites were determined from written descriptions of the locations and 1:50,000 maps, as definitive marking of the actual survey trees had been removed. Surveys were conducted by Janet Farr and Allan Wills on 24th and 25th February and 3rd March 2010. Inspection of sites consisted of a visual search of tree crowns by 2 persons with binoculars. Presence of skeletonizing and GLS style chewing were noted, as were the proportion of stems affected, an approximation of the upper range of damage per tree when severe, and the level of background non GLS damage. Observations are summarized in Table 1. Jarrah crowns had already flushed new foliage

and late February was not the optimal time to assess peak damage. Actual positions surveyed were captured by GPS in most cases or estimated from maps in a few cases.

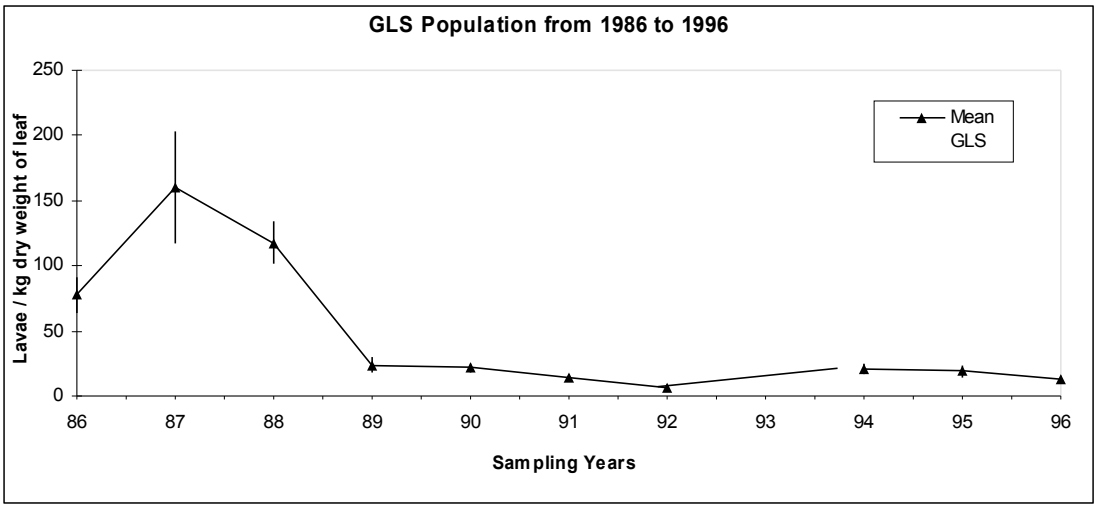

Fig 2 Population of GLS in the southern Jarrah forest as measured from canopy samples taken in January of the respective year (Farr unpublished data).

Results

Two centres of outbreak are apparent. One focused on Yanmah and Wheatley blocks and another on Kinkin, Quillben and Dingup blocks. Although Maiden Bush and Yeagerup reported by the public are areas beyond the range of the 45 monitoring sites, damage assessments were also made in these locations, but with limited success due to the reasons stated above. The Yanmah, Wheatley locus was a centre for the original outbreak in 1982.

Fig 3 Canopy chewing by GLS (Yanmah block February 2010)

Recommendation

In view of the potential for rapid development of severe and widespread damage by this pest, it is recommended that the canopy sampling program, as established by Ian Abbott and Janet Farr (1986-1996), be reactivated for January 2011 and incorporated into the DEC works program for the times specified. January should be maintained as the sampling period to coincide with the same development period of GLS as sampled previously. This sampling will track changes in GLS populations across a representative network of jarrah forest sites previously susceptible to GLS outbreak and allow direct comparison with the quantitative population levels previously recorded for 1986-1996 as shown in Figure 1. In addition a road survey to establish the extent of GLS activity should be implemented; this can be scheduled in Nov - Dec 2010. We suggest using 2 short term casual appointments for 3 weeks of sampling in January 2011 and one week on a road survey during Nov – Dec 2010.

References

Abbott, I. 1992. Records of outbreaks of defoliating insects in jarrah forest, south-west Western Australia, from 1960-1990. Department of Conservation and Land Management.

Farr, J.D. 2002. Biology of the gumleaf skeletoniser, *Uraba lugens* Walker (Lepidoptera: Noctuidae), in the southern jarrah forest of Western Australia Australian Journal of Entomology 41(1): 60-69.

Farr, J.D., Swain, D., and Metcalf, F. 2004. Spatial analysis of an outbreak of *Uraba lugens* (Lepidoptera: Noctuidae) in the southwest of Western Australia: does logging, vegetation type or fire influence outbreaks? Australian Forestry 67(2): 101-113.

Table 1 Observations of GLS from a road survey of GLS sample sites (*as established by Abbott 1992) conducted in February 2010. Positive sightings of GLS highlighted. Damage levels and proportion of stems affected are a visual estimate; "normal " non gls damage is < 20% chewing in patterns other than GLS style damage (D'Entre = D'Entrecasteaux National Park).

Sample date	Site No *	Forest Block	Longitude	Latitude	GLS Skeletonizing	GLS chewing	%Jarrah stems affected	Estimated severity of chewing	NonGLS chewing	Comments
24/02/2010	15	Solai	50H 0413000	6207200	absent	absent	none		"normal"	
24/02/2010	14	Solai	50H 0408750	6203200	absent	absent	none		"normal"	
24/02/2010	12	Solai	50H 0406098	6204668	absent	absent	none		"normal"	
24/02/2010	13	Solai	50H 0407769	6207583	absent	absent	none		"normal"	
24/02/2010	10/11	Graphite	50H 0396000	6207950	absent	absent	none		"normal"	
24/02/2010	9	Lewin	50H 0395850	6212750	absent	absent	none		"normal"	
24/02/2010	8	Gordon	50H 0400000	6214400	absent	absent	none		"normal"	
25/02/2010	3	Yanmah	50H 0407700	6219900	present	present	30-40%	60-80% in some cases	"normal"	larval casts present
25/02/2010	2	Yanmah	50H 0407400	6223700	present	present	<5%		"normal"	
25/02/2010	4	Wheatley	50H 0406450	6223300	present	present	ca 20%		"normal"	
25/02/2010	7	Wheatley	50H 0404100	6223000	present	present	15-20%		"normal"	Mostly mid-story
25/02/2010	6	Wheatley	50H 0403230	6226575	present	present	5%		"normal"	Skeletonizing on marri
25/02/2010	5	Netic	50H 0404591	6228279	absent	absent	none		"normal"	
25/02/2010	1	Carter	50H 0415167	6227330	absent	absent	none		"normal"	
25/02/2010	19	Mersea	50H 0427017	6227493	absent	absent	none		"normal"	
25/02/2010	18	Mersea	50H 0431438	6225239	absent	absent	none		"normal"	
25/02/2010	17	Mersea	50H 0427468	6223361	absent	absent	none		"normal"	
02/03/2010	16	Palgarrup	50H 0420645	6216888	absent	absent	none		"normal"	sampled 2/03/2010
03/03/2010	30	Quininup	50H 0428673	6188728	absent	absent	none		"normal"	unidentified flagging in upper canopies
03/03/2010	29	Dordagup	50H 0432791	6191607	absent	?present	1 instance		"normal"	
03/03/2010	near 28	Kinkin	50H 0433870	6193572	present	present	70%		"normal"	
03/03/2010	28	Kinkin	50H 0433820	6194263	present	present	70%	up to 90% in some cases	"normal"	
03/03/2010	27	Quillben	50H 0432969	6199883	present	present	<5%		"normal"	
03/03/2010	26	Dingup	50H 0431715	6200141	present	present	10%		"normal"	
03/03/2010	25	Dingup	50H 0428817	6203734	absent	present	<5%		"normal"	
03/03/2010	24	Cardac	50H 0433023	6205872	absent	absent	none		"normal"	

Sample date	Site No *	Forest Block	Longitude	Latitude	GLS Skeletonizing	GLS chewing	%Jarrah stems affected	Estimated severity of chewing	NonGLS chewing	Comments
03/03/2010	23	Cardac	50H 0436129	6204776	absent	absent	none		“normal”	
03/03/2010	22	Mooralup	50H 0436513	6205769	absent	absent	none		“normal”	
03/03/2010	21	Yeticup	50H 0440678	6206877	absent	?present	<5%		“normal”	
03/03/2010	20	Yeticup	50H 0443895	6207140	absent	absent	none		“normal”	
03/03/2010	31	Coonan	50H 0440070	6212458	?present	?present	<5%		“normal”	
03/03/2010	32	Warrup	50H 0443073	6215278	absent	absent	none		“normal”	
03/03/2010	33	Corbal	50H 0450033	6222470	absent	absent	none		“normal”	Ian’s site about 300m north
03/03/2010	34	Dwalgan	50H 0452671	6225930	absent	absent	none		“normal”	
03/03/2010	35	Dwalgan	50H 0456171	6226440	absent	absent	none		“normal”	
03/03/2010	36	Yendicup	50H 0458185	6225121	absent	absent	none		“normal”	
03/03/2010	37	Yendicup	50H 0460009	6222371	absent	absent	none		“normal”	
03/03/2010	38	Yackelup	50H 0464362	6218009	absent	absent	none		“normal”	straggly jarrah crowns. Wandoo crown decline present
03/03/2010	39	Yackelup	50H 0462030	6215586	absent	absent	none		“normal”	
03/03/2010	40	Camelar	50H 0461090	6213459	absent	absent	none		“normal”	
03/03/2010	41	Camelar	50H 0459008	6211137	absent	?present	1 instance		“normal”	
03/03/2010	42	Boyicup	50H 0457643	6208042	absent	absent	none		“normal”	
03/03/2010	43	Boyicup	50H 0456515	6203120	absent	absent	none		“normal”	
03/03/2010	44	Meribup	50H 0456215	6201662	absent	absent	none		“normal”	
03/03/2010	45	Meribup	50H 0456966	6196598	absent	absent	none		“normal”	
10/03/2010	Maiden Bush	Warren NP	50H 0402381	6181260	absent	present	<5%		“normal”	Site of public enquiry
10/03/2010	Yegarup Lk	D'Entre	50H 0396729	6177275	Absent	present	<5%		“normal”	Site of public enquiry