

Management issues in minimisation of damage by flying-foxes to horticultural crops

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ABSTRACT

From a horticultural perspective, several issues need to be borne in mind when considering future management of flying-foxes as a vulnerable species. Of particular concern are the processes for obtaining approval to harm species listed as threatened under the *Threatened Species Conservation Act 1995* (TSC Act). The procedures can be complex and costly, and it is unlikely that many growers could afford to comply with the requirements of the Act. In addition, the processes required under the TSC Act are relatively slow and unsuited to the rapid response needed when sudden large influxes of flying-foxes occur. In addition to new approval processes, there is a need for a significant and urgent research effort to develop and validate alternative crop protection strategies to those currently available. The immediate challenge is to source the necessary funds for this research effort. The development of future management strategies for Grey-headed Flying-foxes will require communication between National Parks & Wildlife Service as regulators, conservation groups, growers, researchers and other relevant agencies. NSW Agriculture supports the establishment of a NSW Flying-Fox Consultative Committee similar to that now running in Queensland.

Introduction

This paper seeks to raise some issues from a horticultural perspective that need to be borne in mind when considering future management of Grey-headed Flying-foxes as a vulnerable species. I reiterate some dilemmas of the current situation.

1. From a community viewpoint, two seemingly incompatible truisms exist
 - a) Fruit growing is good.
 - b) Conservation of flying-foxes is good.
2. The second dilemma is that even though the Grey-headed Flying-fox is now classified as a vulnerable species, it is still capable of causing direct losses to horticulturists in NSW of up to \$10M per annum (Ullio 2002). I am not aware of any other species classified as vulnerable that at the same time is a widespread and consistent agricultural pest. This seems to be incongruous.
3. The third dilemma is that there is only one 100 percent effective control measure for

flying-foxes in crops – exclusion netting, which unfortunately is increasing in cost at the same time as returns to growers are declining. Exclusion netting is becoming less viable economically as a control measure as Lawrence Ullio has indicated (Ullio 2002). In any event, there are crops and situations (eg. bananas) where netting cannot be used.

Thus we have the situation where the listing of Grey-headed Flying-foxes as vulnerable may leave growers no viable defences for their fruit if shooting is not permitted. Given these dilemmas there is no obvious simple solution to this problem.

Management under the threatened species conservation act

The listing of Grey-headed Flying-foxes as a vulnerable species brings its future management within the ambit of the NSW *Threatened Species Conservation* (TSC) Act. Some points need to be made about the potential implications of this for future management.

The processes for obtaining approval to harm species listed as threatened under the TSC Act can be long and complex (see Wilson 2002 for description). The processes involve multiple stages, are likely to be expensive, and require knowledge and expertise in the biology of threatened species, expertise not possessed by fruit growers.

If the normal processes for a development application under the TSC Act are followed for flying-fox management, I doubt that smaller growers, or even many larger ones, could afford it. This is because the Act would require an assessment of the impact of any proposal to harm flying-foxes on the local and regional populations. To do this would require the assistance of an expert consultant and consultants are expensive.

Apart from complexity and cost, the processes required under the TSC Act are also relatively slow and unsuited to the rapid response needed when sudden large influxes of flying-foxes occur. It is probable that by the time a licence to harm was obtained under the Act, the fruit season would be over. Therefore, where shooting is the only control option, another process more suited to the nature of this particular problem is needed. Whatever the process, it needs to be simple, low cost and fast.

I am aware there may be scope for the development of approved Property Management Plans, or of Regional Management Plans involving groups of growers rather than individuals. Some creativity will be required to develop effective regional or property-specific strategies that satisfy growers' needs. To work effectively, agreed flying-fox management strategies should be scientifically based, effective and economically feasible.

Effectiveness is a particular concern. If management plans impose on growers those strategies that have proven to be ineffective in the past, they are unlikely to be accepted by the industry. Plans that represent hope, rather than scientifically proven damage minimisation, are doomed to failure. The grower may lose not only the crop, but also failure will have cost dearly in time, money and effort. In particular, I refer to unproven strategies such as the planting of

alternative food sources and various aversion systems as listed by Ullio (2002). We need to be particularly careful about an over reliance on alternative food sources given that some crops, such as lychees, appear to be preferred over all naturally available foods. Also, it needs to be borne in mind that failure of natural food during droughts is equally likely to affect planted food trees and may not alleviate the severe problem experienced by growers at these times.

Consultative committee

The development of appropriate management strategies will require communication between National Parks & Wildlife Service as regulators, conservation groups, growers, researchers and other relevant agencies. NSW Agriculture supports the establishment of a NSW Flying-Fox Consultative Committee similar to that now running in Queensland. This Committee could make recommendations to Government on strategies to resolve issues and conflicts. In particular, it could recommend such things as greater access to finance for exclusion netting; provision of funding for research; funding of a dedicated Flying-Fox Management Unit responsible for (a) population monitoring, (b) community liaison, and (c) research; and compensation to growers (a difficult issue).

Conclusion

In conclusion, I would just make the observation that although we all want to see a solution that results in continued viability of both flying-foxes and horticulture, I do not think we quite have all the tools we need to make this happen. The big gap is a universally applicable, economical, effective, flying-fox friendly orchard protection strategy. Until we have this, sensible transitional approaches are needed. There is clearly a need for a significant and urgent research effort to develop and validate appropriate alternative crop protection strategies. The immediate challenge is to source the necessary funds for this research effort.

Reference

Ullio, L. 2002. To net or not to net that is the question! But is it the answer? Pp 70-76 in *Managing the Grey-headed Flying-fox as a Threatened Species in NSW*, edited by P. Eby and D. Lunney. Royal Zoological Society of NSW, Mosman, NSW.

Wilson, G. 2002. Implications of listing the Grey-headed Flying-fox *Pteropus poliocephalus* as a vulnerable species in NSW under the *Threatened Species Conservation Act 1995*. Pp 29-38 in *Managing the Grey-headed Flying-fox as a Threatened Species in NSW*, edited by P. Eby and D. Lunney. Royal Zoological Society of NSW, Mosman, NSW.

CHRIS DICKMAN: Time for a question or two.

CHRIS ALLEN (University of Sydney): If the number of pastoralists is decreasing, I wonder if the area being cultivated is remaining approximately the same or if it is declining. I am not sure, but if the cost of fruit trade is falling due to greater competition, and in particular due to large-scale operations, I wonder if the large-scale operations are really part of the problem. If the costs of trade are coming down it means you cannot afford the netting.

COLIN BOWER: You are getting into very complex marketing issues there. Essentially what is happening in the horticultural industries is that operations are getting bigger. The number of growers is tending to fall and growers are operating on tighter and tighter margins. A lot of this is driven by the supermarkets, who do not like to deal with small growers. They would rather deal with a big cooperative or grower groups. The supermarkets are basically calling the shots. The survival of small growers in my view depends on them banding together and forming marketing groups, but that is altogether another issue.

CHRIS ALLEN: I know it is another issue, but it almost seems to be a major part of what's going on. Obviously the economics of the situation is a large component of the problem. It is the small growers that are being hit the hardest and they are the ones that cannot afford the netting, because the price of fruit is falling.

COLIN BOWER: I think we need to remember that these sorts of changes are going on in the industry all the time irrespective of the flying-fox situation. Growers are being confronted with all sorts of additional imposts. Making life more difficult on the flying-fox front is going to make it more difficult for them to survive on the slim margins they have. I think you need to look at that in isolation, even though these other things are going on.

CHRIS DICKMAN: Thank you.