

FACT SHEET:

Impacts and management of red-vented bulbul in Fiji

Red-vented bulbul (*Pycnonotus cafer*)

History

The red-vented bulbul is native to parts of Asia. It is reported to have been introduced to Fiji in 1903 by labourers arriving from India. The red-vented bulbul is on the IUCN/ISSG list - 100 of the World's Worst Invasive Alien Species.

General Information

On Viti Levu, the red-vented bulbul is abundant in agricultural and suburban habitats. It is often observed in clearings and patches of secondary forest and can occasionally be found in mature forest. In Fiji, it primarily feeds on the fruit of two invasive plant species: prickly solanum (*Solanum torvum*) and *Piper aduncum*. It is also known to eat the fruits of other invasive plant species as well as agricultural crops, such as lantana, guava, cape gooseberry and passion fruit.

Socio-economic impacts

Surveys of 360 households in 30 randomly selected villages in eastern Viti Levu, Fiji, were carried out to assess the socio-economic impacts of the red-vented bulbul. The red-vented bulbul was present in 29 of the 30 villages surveyed in Viti Levu (97%). Respondents to the community survey identified reduction in agricultural yields, especially reduced production of some fruit crops, as a primary cost associated with the bulbul.

However, about 47% of village focus groups reported that the bulbul was actually good for their community: key benefits include:

- that the bulbul effectively controls some problem insect species;
- they sound a warning when a mongoose is about to attack chickens;
- and the bulbuls themselves are sometimes consumed as a food resource.

In terms of control, only 6 % of the villages attempted to control the bulbul via hunting, while 94% of the villages did nothing. As a result, 80% of villages surveyed indicated that the population of the bulbul was either steady or still increasing.



Photo: wikicommons

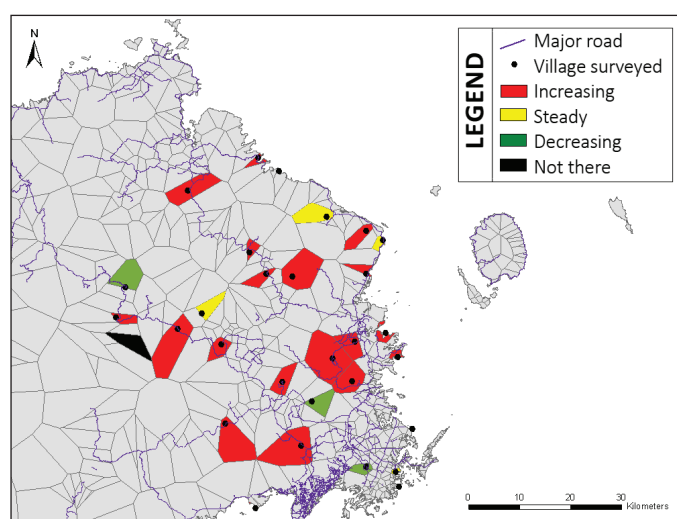


Fig.1. State of red-vented bulbul in villages surveyed in Viti Levu (n=30)



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Benefits and costs at village level

Different management options could have varying effects on bulbul impacts on agricultural crops. As the red-vented bulbul has been established in Fiji for more than a century, we can assume that about 100% of the potential carrying capacity has been reached. The bird also causes other impacts, such as the dispersal of weedy plant species and subsequent displacement of indigenous species. However, there is very limited information on effective management options. As a result, the cost-benefit analysis only considers a “do nothing” approach and two possible management options to reduce impacts of the red-vented bulbul to agricultural crops: a crop management approach and a crop protection approach. The analysis does not examine options for reducing the population of the bulbul, such as placing traps in the affected area, because there is limited knowledge as to whether this would be a feasible option in eastern Viti Levu. The crop damage values for the initial cost-benefit analysis are calculated using the following management options and assumptions:

Do nothing

This option assumes that communities maintain the status quo of putting no noticeable effort into controlling the red-vented bulbul or protecting crops. This approach results in the bulbul continuing to have a steady annual impact on agriculture.

Crop management approach

Bulbuls are attracted to edible weeds, so frequent weeding or application of suitable herbicide to weed species may reduce weed infestation levels in cropping areas, and subsequently reduce the population level of bulbuls. Staking crops so that they are raised above the ground could also increase yield. Some fruit and vegetable crops can also be harvested and stored under cover before they ripen.

Under this management option, households could invest more time and effort into managing their crops against bulbuls. Under the crop management approach, it is assumed that the impacts from the bulbul would be reduced by half.

Crop protection approach

This option assumes that placing nets over vulnerable crops could reduce the damage created by the bulbul. In this case, we assume that farmers place netting over all possible crops. Crops that cannot be covered with nets are, if possible, harvested and stored under cover before they ripen. We assume that crop protection work would be undertaken in all agricultural land in the village as that is the area most sensitive to the harmful effects of red-vented bulbuls. Under this management approach, it is assumed that the impacts from the bulbul would also be reduced by about one-half.

Conclusion

The crop management and the crop protection approaches were both estimated to have negative net economic benefits relative to the ‘do nothing’ option. This indicates that the present value cost of implementing either management option outweighs the present value benefit accrued over the same period from maintaining status quo. This is not a surprising result, given that nearly all respondents to both the community and household surveys indicated that they actually spent little or no effort attempting to mitigate impacts of the red-vented bulbul. This suggests it could be more efficient from an economic perspective to let the invasive bird continue to live as is in the study area unless damages to crops are significantly higher than those estimated from our survey or if there are other important considerations (e.g. biodiversity) at risk that were not accounted for in this study.

The cost-benefit analysis is available on: www.landcareresearch.co.nz/publications/researchpubs/CEPF-valuing-invasives.pdf

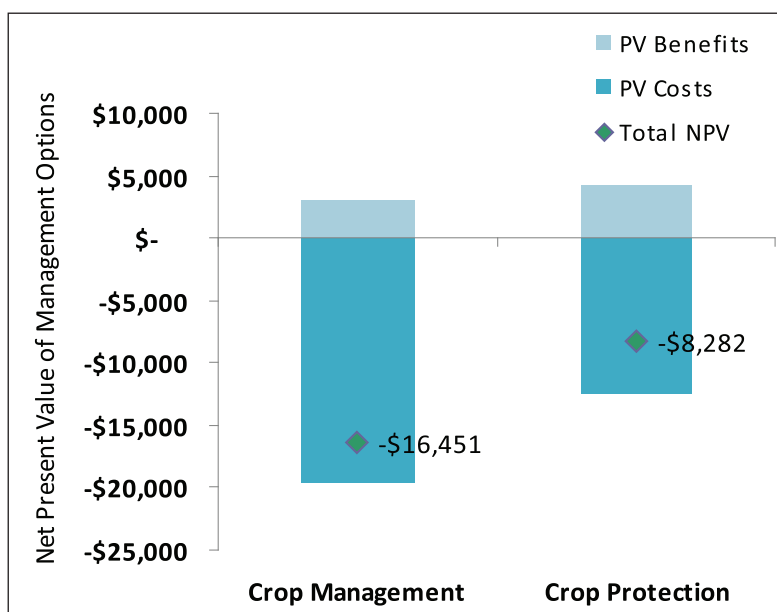


Fig. 2. Net Present Value (FJD/ha) of red-vented bulbul management