## **ARTICLE SUBMITTED: Op-Ed on Axis Deer**

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## **Axis Deer Control will be Challenging**

The Star Advertiser editorial on 6/6/11 accurately reflected some of the devastation that these deer can do in our perfect climate. With no winters, natural predators, or herd-culling diseases, axis deer populations are on the rise where they have been introduced. While the axis deer is valued for its meat and as a game species, the presence of axis deer comes with a price that we all pay. In Maui County last year, herds of axis deer devastated crop areas, damaging production of vegetables, cane, pineapple, and grapes, and wiping out forage areas that would have supported cattle during the drought. Financial losses to agriculture and impacts to the environment will persist and increase, as will deer-vehicle collisions. Axis deer were responsible for more than a dozen vehicle accidents in the past year, and the Department of Land and Natural Resources has been inundated with requests for wildlife control permits, suggesting that the population on Maui is still increasing exponentially. Efforts on Maui are focusing on working together to minimize deer impacts by fencing and population control—eradication is no longer an option.

On Hawai'i island, the situation is much different. The limited number of deer provides an opportunity to save Hawai'i island farmers, ranchers and residents the long-term, annual costs that deer presence would add. Efforts will focus on the complete removal of axis deer from Hawai'i island.

We agree that the axis deer must be dealt with in a humane way, on both Hawai'i island and in Maui County. However, there are many challenges to using contraceptive techniques in particular, which we would like to share. There is a contraceptive that can be delivered by injection. A single, hand-injected dose of contraceptive has successfully kept some female white-tailed deer infertile for up to 5 years in studies conducted in enclosed pens. During small–scale field studies in New Jersey and Maryland using free-ranging deer in partially-fenced urban settings, data showed the contraceptive to be 67-88% effective at preventing pregnancy the first year, dropping to 47-48% effective the second year. Similar to other vaccines, a second dose can be administered to extend the contraceptive effect. It is unclear how often deer would need to be re-vaccinated to maintain infertility in subsequent years, and this method has not been tested with large, free-roaming populations of deer.

It is true that in small, accessible areas where there is a limited population of deer, resource managers have been able to inoculate enough reproductive female deer to slow reproduction, while lethal methods were used to cull and eventually completely remove a population of deer in some instances. Axis deer in Hawai'i are cryptic and skittish, and locating animals and successfully administering treatments to the recommended 70-90% of the island population of female deer every few years to achieve zero population growth is mathematically and physically impossible.

Although there is a great interest in developing humane and cost-effective methods of controlling wildlife, effective contraceptive methods for controlling large populations of free-ranging deer do not yet exist. As contraceptive technology advances, it could become a valuable management tool in specific areas, but we are not there yet when you consider management on the island scale. Again, on Hawai'i island, the goal will not be management, it will be the complete removal of deer using the quickest and most effective tools at our disposal.

No matter what control method is used, managing axis deer on Maui and Hawai'i islands will be difficult. The islands are large and the landscape, terrain, and property ownership issues do not lend themselves to accessibility. As the state and its partners move ahead to protect agriculture, the environment, and society from the impacts of axis deer, we humbly ask for your understanding and help.

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