

Axis Deer Impacts in Maui County: Strategies for Mitigation & Long-Term Management



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Agenda



Management Options

- Commercial Harvesting + Processing
 - Federal + State Regulations
 - Bottlenecks
- Meat Donation
 - Federal + State Regulations
 - Bottlenecks
- Population growth rates based on removal rates

Commercial Harvest + Processing

Federal Laws & Regulations

Federal Meat Inspection Act (FMIA) (2022) - Ante- and post-mortem inspection required of amenable species. Axis deer are considered non-amenable species under the FMIA, thus, inspections are *voluntary* and the **processors must pay for inspection out of pocket**. Allows states to **establish their own meat inspection services** “at least equal to” Federal law, but those meats may only be sold **intrastate**.

Food Safety and Inspection Service Directive 1200.1 - Provides guidance on the requirements for voluntary inspection services of exotic species.

Bottlenecks:

- **High cost of voluntary inspection:** As non-amenable species, inspection is voluntary, and therefore must be paid for out of pocket - Maui Nui Venison: upwards of \$10,000 / week for inspections
- **Shortage of USDA FSIS inspectors** locally: chicken and the egg problem
(USDA FSIS = United States Department of Agriculture Food Safety and Inspection Service)

Commercial Harvest

Federal Laws & Regulations

Humane Methods of Slaughter Act Title 7 U.S.C. 48 § 1902 (1978) - Defines that a **single shot or blow to the head** that instantly renders livestock incapacitated is a method of humane slaughter.

Bottlenecks:

- Only deer that has been slaughtered via a clean, single shot to the head may enter commerce
- USDA Inspector must observe each and every kill

Federal Food, Drug, and Cosmetic Act (FFDCA) Current Good Manufacturing Practice (2018)

Requirements for sanitation and process control for all human food products. Appears to allow for the **intrastate sale of game meat** under the Food and Drug Administration's enforcement when in compliance with this Act.

Commercial Harvest

State Laws & Regulations

Hawai'i Revised Statutes Section 159, Hawai'i Meat Inspection Act - Similar to the Federal Meat Inspection Act, defining voluntary inspection of non-amenable species.

Bottlenecks:

- Axis deer still considered a non-amenable species
- Defunct since 1995 due to a lack of funding
- 2024 legislative session: SB2794 / HB2142 was introduced. Would have funded 4 FTE positions at the HDOA for meat inspection. (A similar bill was also introduced in 2023)

Hawai'i Administrative Rules Section 11-29-8 - Adopts the Food and Drug Administration's Current Good Manufacturing Practices, essentially making the sales of **non-amenable meats legal intrastate**.

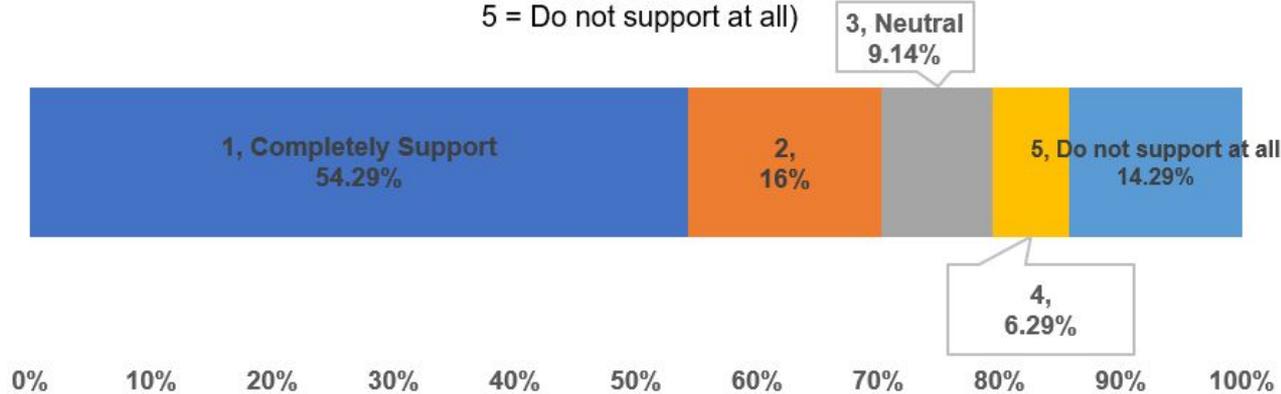
Hawaii Administrative Rules, DLNR DOFAW, Part 2, Chapter 123, 13-123-22: No person shall sell or offer for sale any game mammal or parts of the carcass of any game mammal taken from any public hunting area.

Commercial Harvesting

Source: Authors using data from Rubino and Williams, 2022.

Maui Resident Support for Commercial Harvesting of Axis Deer as a Management Strategy

(On a scale from 1-5,
1 = Completely Support,
5 = Do not support at all)



Commercial Harvest and Processing

- **70.29% support** commercial harvesting as a management action for axis deer on the island
- HDOA estimate: **\$1 million** to restore and recalibrate existing slaughter and processing infrastructure to accommodate axis deer
- Mobile slaughter units most economical: estimated at **\$250,000** for a trailer facility. Must meet the same federal inspection requirements as brick-and-mortar facilities, with less output

Meat Donation

Federal Laws & Regulations

Bill Emerson Good Samaritan Food Donation Act - Abolished

liability for those who donate foods in good faith and belief that those foods are safe for human consumption.

State Laws & Regulations

H.B. 1382: Relating to Meat Donation (2023), Act 054 - Allows for the donation of game meat that is harvested in a food-safe manner.

Bottlenecks:

- Seems to direct that harvesting be done in accordance with the **Humane Methods of Slaughter Act**,
- Unclear whether voluntary inspection under the **FMIA** is required, or if **FDA's Good Manufacturing Practices** suffices
- 2025 legislative session HB1334 was introduced- Would have provided exemptions for hunters donating wild game to nonprofits or religious organizations from HI Meat Inspection Act.

Estimated Population Growth Rates as Determined by Removal Rates, Maui Nui

Hess & Judge, 2021

	No Removal	10% Removal	30% Removal
No Removal	20.8% Growth Rate	N/A	N/A
3:2 Female to Male Removal	N/A	10.3% Growth Rate	13% <i>Reduction Rate</i>
4:1 Female to Male Removal	N/A	N/A	22.3% <i>Reduction Rate</i>

“Effectively reducing axis deer will most likely require an annual removal of approximately 20–30% of the population and with a greater proportion of females to increase the population decline. Selective removal of males may not only be inefficient, but also counterproductive to population reduction goals” (Hess & Judge, 2021, p.561).

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Mahalo Nui!

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