

MAUI AXIS DEER GROUP

INITIAL FINDINGS AND RECOMMENDATIONS FOR A MAUI DEER MANAGEMENT PLAN

DEVELOPED BY THE SUBCOMMITTEE OF

PUBLIC INFORMATION AND DEER MANAGEMENT PLANNING

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Maui Axis Deer Group
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Introduction

The Maui Axis Deer Group (MADG) is pleased to present Initial Findings And Recommendations For A Maui Deer Management Plan. This document is a result of research findings presented at a public informational meeting in August of 2001 and subsequent Working Group Findings and Recommendations concluding with a MADG sub-committee recommendation for an Island wide management plan. It has been developed through consultation with Maui residents to identify comprehensive strategies to address Maui's rapidly growing axis deer population. It combines input from land and natural area managers (founders of MADG), hunters, researchers, farmers and other interest groups on how to address negative impacts associated with Maui's growing Axis Deer (*axis axis*) population.

This document was drafted by the Subcommittee on Public Information and Deer Management Planning of MADG (hereafter called the "Subcommittee"). Membership of the Subcommittee was expanded from its original size of four MADG members to include representatives from the three stakeholder working groups that were created from the Public Information Meeting held in Kihei in August 2001 and a representative of the Mayor's Office. The three working groups created were: Economic; Hunter, Ethics, and Hawaiian Culture; and Natural Resources management. The two basic goals for this document are 1) to document and include stakeholder input through a process of public meetings and 2) to outline goals, objectives, and strategies to serve as the basis for a Maui deer management plan. Although much time was given to the successful completion of this proposal, the Subcommittee understands that other factors associated with a comprehensive deer management plan will need to be worked out in the next step-in the writing of the plan itself.

Axis Deer on Maui

In September 1959, five deer were introduced to Maui on Kaonoulu Ranch, Pu'u O Kali. Later in July 1960, four additional deer were released near the 1959 release site (Waring 1996). These deer were introduced to Maui by the Territorial Legislature for increased hunting opportunities and to provide subsistence for island residents. In 1968, the Maui population was estimated to be 85-90 animals (Kramer 1971). Today, reports of deer sightings have occurred throughout Maui from Hana to Kapalua with numbers estimated in the thousands island wide (Anderson 2001). The growing population of axis deer has created a number of concerns ranging from vehicle accidents, property damage, poaching, ecosystem damage, and disease to crop damage. In Hawaii, 90% of mature females produce fawns annually when forage is good (Waring 1996). Reproduction is year round. An unmanaged axis deer population will grow exponentially and lead to increased environmental and human conflicts.

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Historical Perspective

In April of 1996, a group of landowners, land managers, and individuals got together in an informal meeting to discuss the common concerns of the growing axis deer population on Maui. This informal meeting evolved into the formation of MADG, which developed the following as its operative:

A coalition of public and private agencies/individuals assembled to develop strategies that preserve Maui's native ecosystems.

MADG set for itself two very basic goals.

- To develop axis deer control methods.
- To provide information and public education regarding axis deer and their impact.

To accomplish these goals, the following actions were planned:

- Investigate the biology of Maui's axis deer to provide a basis for management strategies. This investigation would encompass ongoing population studies including sightings, hunting reports, transects, surveys, capture and telemetry, as well as investigation into methods of reproductive control.
- Develop cooperative management strategies with landowners and managers, hunting groups, and others affected by axis deer.
- Share the work and findings of MADG with the public.

Although MADG in its operative recognized the need to protect Maui's unique Hawaiian ecosystem as its primary focus, it also recognized the importance that the concerns raised by axis deer be addressed for the whole of Maui. A Maui wide management strategy is critical in controlling deer population growth and expansion. The extent of the deer problem became apparent as MADG members began to combine their knowledge and obtained information from other deer experts. It was realized that to really understand the extent of the deer problem, basic research was needed for Maui. To this end, MADG solicited a deer study and members were able to secure funds to initiate a study by February of 1997. Steven B. Anderson, a University of California at Davis graduate student, was selected as principal investigator. His doctorate thesis is based on acquiring baseline data on axis deer population dynamics on Maui. While his research included other areas, Steve did the bulk of his field studies on Ulupalakua Ranch, which at that time was known as the area with the highest deer concentration. His work also includes a historical perspective, population expansion (statistics), resource and community impacts, and methods of control.

By April of 2000, the field data collection for the deer study had been completed. Preliminary reports were received by MADG and the group felt that it was time to share this information with the general public. MADG also realized that any type of

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management strategy for Maui would not be possible without public, local, and State government support. MADG held a public informational meeting on Maui's growing

deer population in Kihei on August 30, 2001 in cooperation with the Maui County Office of the Mayor and by the Hawaii State Department of Land and Natural Resources. During this meeting, researcher Steve Anderson presented his findings. After presenting this information the public was invited to participate in a series of workshops to develop findings and recommendations related to the management of Axis Deer on Maui.

Public Meeting and Working Groups

About 150 people attended the August 2001 Public Informational Meeting, including Maui County Mayor James "Kimo" Apana and DLNR Chairman Gil Coloma-Agaran, who voiced concerns and offered support for the process. At that meeting, the public was invited to participate in one of four working groups representing different interests:

- (1) Natural Resource Management;
- (2) Economic;
- (3) Public Safety (road hazards and health issues); and
- (4) Hawaiian Culture, Hunting and Ethics.

The groups were asked to identify problems and suggest possible solutions. Approximately fifty percent of those who attended the August 2001 Public Meeting later signed up for the Working Groups. The largest group to form was that of the Hawaiian Culture, Hunting and Ethics. No one signed up for the Public Safety group, although public safety issues were addressed by the other Groups. The goal of the Groups was to make Findings and Recommendations to present back to the other Groups and the public. After a series of individual meetings (at least three per Working Group) the three different Groups met collectively and shared their separate Findings and Recommendations with each other in January of 2002. At the January meeting, the different Working Groups were asked to elect representatives to serve on the Subcommittee to draft a compilation of the Findings and Recommendations. The Subcommittee then decided to compile these different findings in the form of this document and report the results at another public meeting.

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Working Groups Findings & Recommendations

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Natural Resource Management Work Group

Axis Deer Management Proposal Outline

Introduction

Currently there are no management actions to control the adverse affects of axis deer. The Natural Resource Management Group recommends the following outline as a basis in developing a general management plan. The general management plan should be used as a guideline to develop specifics or details for a comprehensive plan. Our findings suggest that immediate action must be taken to stop the threat to the watershed. Strategic fencing will stop encroachment and allow for effective management. Management of axis deer must incorporate all government agencies and strong representation from the public.

Outline

- I. Watershed is threatened by the encroachment of a growing Axis Deer population. Managers of watersheds both public and private are developing fencing strategies to protect these lands. The cooperation of landowners presents the possibility of creating an all-encompassing Maui Deer Management Plan.
- II. Fencing strategies will divide Maui into three Axis Deer Management Zones, East, West, and Central Maui.
- III. Axis Deer Management Plan to be incorporated over a period of time.
 - A. Goals for a three-year period.
 - Coordinate efforts with the National Park, State, County or private landowners in the construction of the Axis Deer fence.
 - Completed East and West Maui fence lines will create three management zones.
 - B. Goals for a ten-year period.

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- Establish public hunting units in Central Maui.

- Develop Venison as a market product.

(Natural Resource Working Group continued)

- “Zero Tolerance” of free ranging deer outside the private and public hunting areas.
- Establish guidelines for axis deer ownership.
- Develop a long-term management plan.

IV. The Projected Future

- East and West Maui watersheds will be “deer free”.
- Public Axis Deer hunting units for Maui Residents.
- Profit gain for private enterprise through Axis Deer Utilization.
- “Zero tolerance” of free ranging deer outside the private and public hunting areas.

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Hawaiian Culture, Hunting and Ethics Working Group

Findings and Recommendations
November 2001

Three Working Group meetings (9/13, 9/27 & 10/25) have produced Findings and Recommendations from this Group as follows: 1. Access; 2. Safety; 3. Ethics; 4. Health; 5. Government; 6. Hawaiian Culture; 7. Public Education.

Findings are in Bold followed by Discussion notes.

I. ACCESS - Findings and Recommendations: **The Group finds that the majority of the deer population on Maui is on Private Lands and that increased public hunter access to those lands is necessary to control the population. The Group would like to recommend or see that DLNR officials meet with private landowners to determine if and how this can be accomplished.** The Group offered up many suggestions on how to accomplish this goal (e.g. by providing incentives, relieving liability, possible funding sources, etc.) as well as how to run an actual Game Management Program (e.g. fee, lottery, hunter education and volunteer service). The Group feels strongly that Government needs to take a more aggressive approach in trying to provide incentives and deal with (and solve) any private landowner problems or concerns about opening up some of their areas so public hunters can help control deer.

II. SAFETY - Findings and Recommendations: **The Group finds that Safety is the most important factor to consider when determining any type of control measure. Roads need to be made as safe as possible to reduce deer/vehicle collisions. Any hunting of deer needs to be done with careful consideration to the safety of any nearby people or residences as well as hunter safety. The Groups would like to recommend or see that any and all safety measures be taken to ensure our roadways are safe and that hunting be carefully regulated and restricted when done near houses or people.** The Group suggested that only certain types of weapons be used in certain circumstances to ensure the safest possible method (e.g. bow-hunting, shotguns, black-powder, sharpshooters, etc.). Road safety devices available and used on the Mainland to reduce deer/vehicle collisions should be considered for use here. Fencing along highway to reduce deer/vehicle collisions. More Hunter Education focusing on safety could be done to deal with special circumstances.

III. ETHICS - Findings and Recommendations: **The Group finds that any hunting or control of deer should be done in the most humane manner possible and that no**

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meat should be wasted. Total eradication of the deer from the Island is not desirable, control is. The Group would like to recommend or see that public

(Hawaiian Culture, Hunting and Ethics Working Group continued)

hunters be given first consideration for any control as they have the necessary abilities, skills and knowledge. No snaring and/or aerial shooting of deer.”

IV. HEALTH - Findings and Recommendations: **The Group finds that deer pose a potential health problem and that appropriate measures be taken to keep deer out of the watershed and that deer populations be monitored.**

V. GOVERNMENT - Findings and Recommendations: **The Group finds that Governmental Agency and Official involvement is necessary because they have the authority and jurisdiction to deal with issues like Public Health, Cooperative Game Management, Hunter Education and Highway Safety. The Group would like to recommend or see that these Officials be contacted and be included in any future action on deer issues under their authority and jurisdiction.**

VI. HAWAIIAN CULTURE - Findings and Recommendations: **The Group finds that deer may negatively impact Hawaiian plants and archaeological sites. The Group would like to recommend or see that these negative impacts be studied and reduced. It is necessary to preserve and educate people about hunting and gathering rights by Hawaiians.**

More study of how much negative impacts are really caused by deer or say verses tourists

VII. PUBLIC EDUCATION - Findings and Recommendations: **The Group finds that more public awareness and community outreach is necessary to educate the public about the growing problem. The Group would like to recommend or see more and better information going out to the public about the problem and how to deal with it as well as information about the benefits of deer. It is important to gather more and better information on deer/vehicle collisions to learn how other places deal with the problem and to keep the public involved with the decision making process.** The Group suggests that hunters need to become educated about Hawaiian plants and cultural issues and the public needs to be educated that control is necessary, not eradication. We suggest people form a group to call for selective hunting on private lands.

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Economic Working Group

Findings and Recommendations
November 2001

Introduction:

It was agreed that axis deer represent a genuine threat to Maui's present and future economic and environmental health. It was also agreed that while many industries may be adversely affected by axis deer, agriculture is currently suffering and will continue to suffer the greatest economic losses. Furthermore, it was agreed that as axis deer were introduced on Maui by the State, the State should be responsible for funding the development and implementation of a management program that will mitigate the threat posed by axis deer and compensate for losses incurred as a result of the introduction of axis deer on Maui. Lastly, it was agreed that any management program developed and implemented should have as its primary goal the creation of a humanely controlled, sustainable, healthy, and economically contributing axis deer population.

Management:

1. We find that axis deer pose an increasing risk to Maui's economy and native ecosystems and that current control mechanisms do not work; therefore, we recommend that an effective management plan be formulated and implemented
2. We find that information on axis deer is lacking, population counts are unreliable, and educational programs are insufficient; therefore, we recommend that the State provide funds to DLNR to gather information, deliver effective count methods, and inform the public.
3. We find that the DLNR uses regulated hunting on Lanai to manage the axis deer population; therefore, we recommend that the State provide funds to DLNR to implement on Maui those aspects of that program that are applicable.
4. We find that the mainland and New Zealand currently employ a variety of effective deer management programs; therefore, we recommend that these programs be researched and applied when and where possible.
5. We find that axis deer harbor potentially serious diseases; therefore, we recommend that funds be applied for and used to improve inspection methods and facilities and to defray costs of carcass disposal through the USDA, State Department of Agriculture, CDC, Rural Community Development funds, and other agencies. Note: These agencies and funding sources may provide the capital for rendering plants, processing plants, or other acceptable biological waste disposal solutions.

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6. We find that damage control permits are effective, but are an improperly used and misunderstood control mechanism; therefore, we recommend that a program be established to better utilize this resource.

(Economic Working Group continued)

7. We find that there is no program through which private landowners are compensated and protected for opening their lands to public hunting; therefore, we recommend that such a program be put in place.

Hunting:

1. We find that current hunting laws do not effectively regulate the caliber of gun that may be used on Maui; therefore, we recommend that the DLNR set zones (shotgun with slug, black powder, no pistols, etc.) and caliber regulations.

2. We find that hunting fees are insufficient to cover game management costs; therefore, we recommend that hunting fees be increased, especially for non-residents.

Government:

1. We find that farmers bear the burden of economic damage caused by axis deer and are least able to bear the cost of protecting their crops; therefore, we recommend that money be made available to educate farmers about the best available programs and methods to protect their crops and to compensate them for their losses.

2. We find that the economic potential from axis deer is limited by the absence of sufficient rendering, processing, and disposal facilities; therefore, we recommend that the legal and physical infrastructure to farm, process, and distribute venison be put in place.

3. We find that the State is responsible for the introduction of axis deer on Maui, that their introduction has resulted in a minimum of \$100,000 in losses to the private sector to date, and that these losses continue to mount; therefore, we recommend that the State assume financial responsibility for the losses and initiate corrective measures as well as take an active role in formulating and implementing these corrective measures.

Law:

1. We find that the economic potential from axis deer is limited by the absence of game hunting operations; therefore, we recommend that the legal infrastructure to conduct such operation be put in place.

2. We find that axis deer will cause an increasing amount of personal injury and property damage; therefore, we recommend that insurance companies develop and provide affordable comprehensive insurance policies to protect against these damages.

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3. We find that the largest axis deer herds reside on private land; therefore, we recommend that access to private land be increased.

4. We find Hawaii State tort law currently hinders the process of hunting on private land by placing too much responsibility on private landowners for any personal and/or property damage that occurs during a hunt; therefore, we recommend that the law be changed to reduce landowner responsibility and thus allow hunters greater access to private land.

(Economic Working Group continued)

Conclusion:

Because of the clear and growing problem axis deer represent to Maui's economy, a management program needs to be developed and implemented that includes education, protection, and compensation for those affected. The responsibility for supporting and funding that program lies chiefly with the State as it introduced axis deer to Maui. In order to allow regulated hunting to become an effective management tool, Hawaii's tort laws need to be reformed. A regulated hunting program that could follow as a result of this tort reform could provide the needed protection for landowners and the desired access for hunters, as well as provide perhaps the most practical method to humanely control and sustain the deer population for the benefit of both residents and visitors.

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MADG Statement of Recommendation

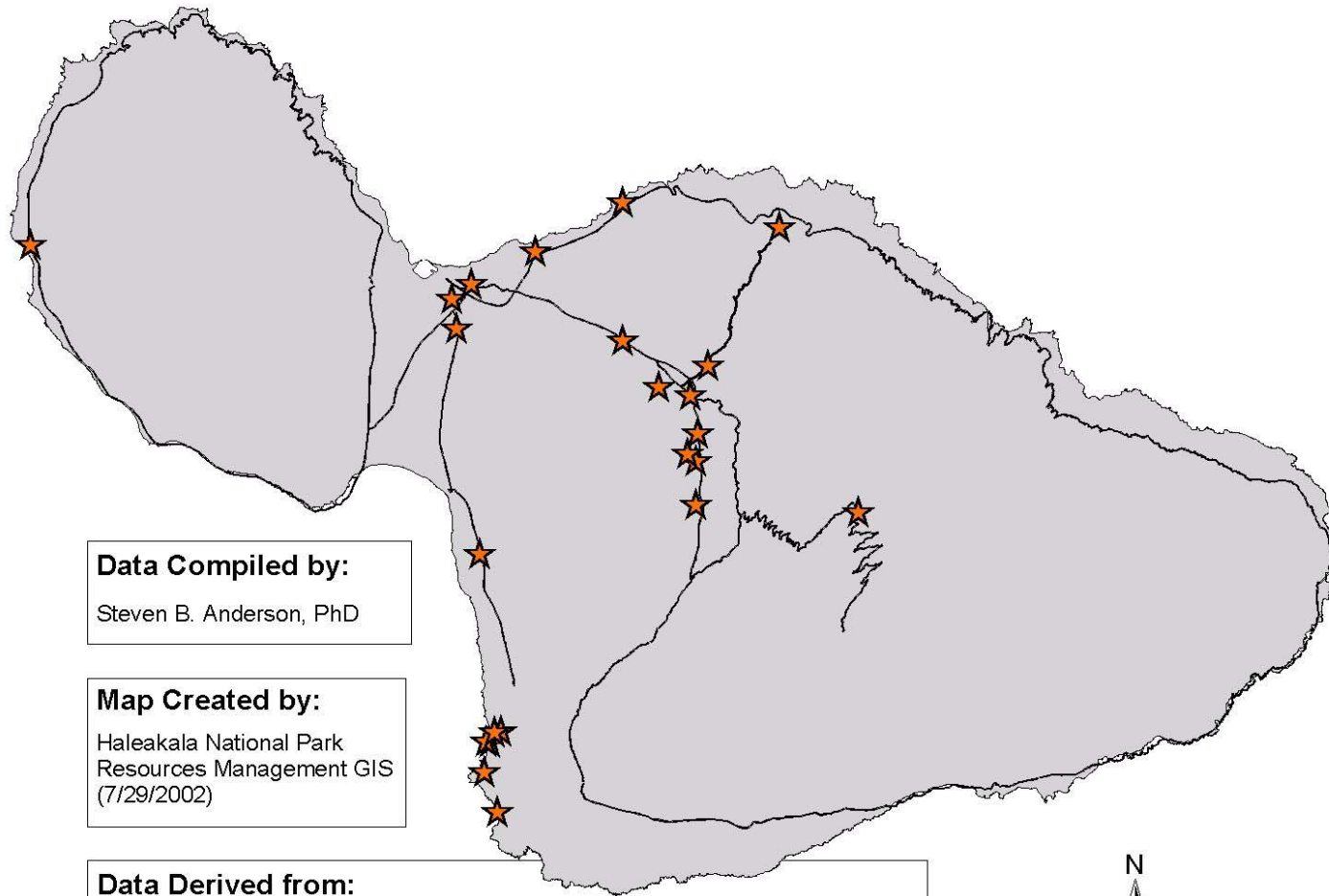
Land managers formed the Maui Axis Deer Group (MADG) in 1996 to address concerns about increased negative impacts associated with Maui's growing deer population. Research was done and results were shared with the public in the summer of 2001 and Working Groups were formed to make findings and recommendations on points of concern and interest. A MADG sub-committee was formed that included representatives from each of the Working Groups. Their job was to find common ground amongst the different Working Group Findings to use as the basis for possible action.

This Sub-Committee determined that a comprehensive, island-wide plan would be the most effective and efficient way to address the negative impacts of axis deer on Maui. It was further determined that the formulation of such a plan would require time beyond the capability of any current MADG member. Being that the State Department of Land and Natural Resources (DLNR) has the most authority and jurisdiction over the matter it was then determined that DLNR is the logical entity to draft such a plan.

MADG recommends that proposals be submitted to obtain funding to help DLNR hire a consultant to write such a plan, following a process similar to ones used on the mainland to deal with the negative impacts of growing white-tail deer populations. MADG will continue to work with both public and private parties to find solutions to problems associated with Maui's growing deer population.

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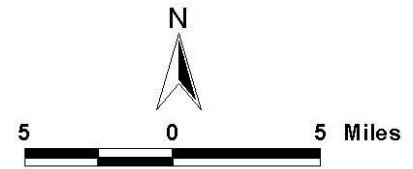
Reported Deer-Vehicle Collision Data on Maui



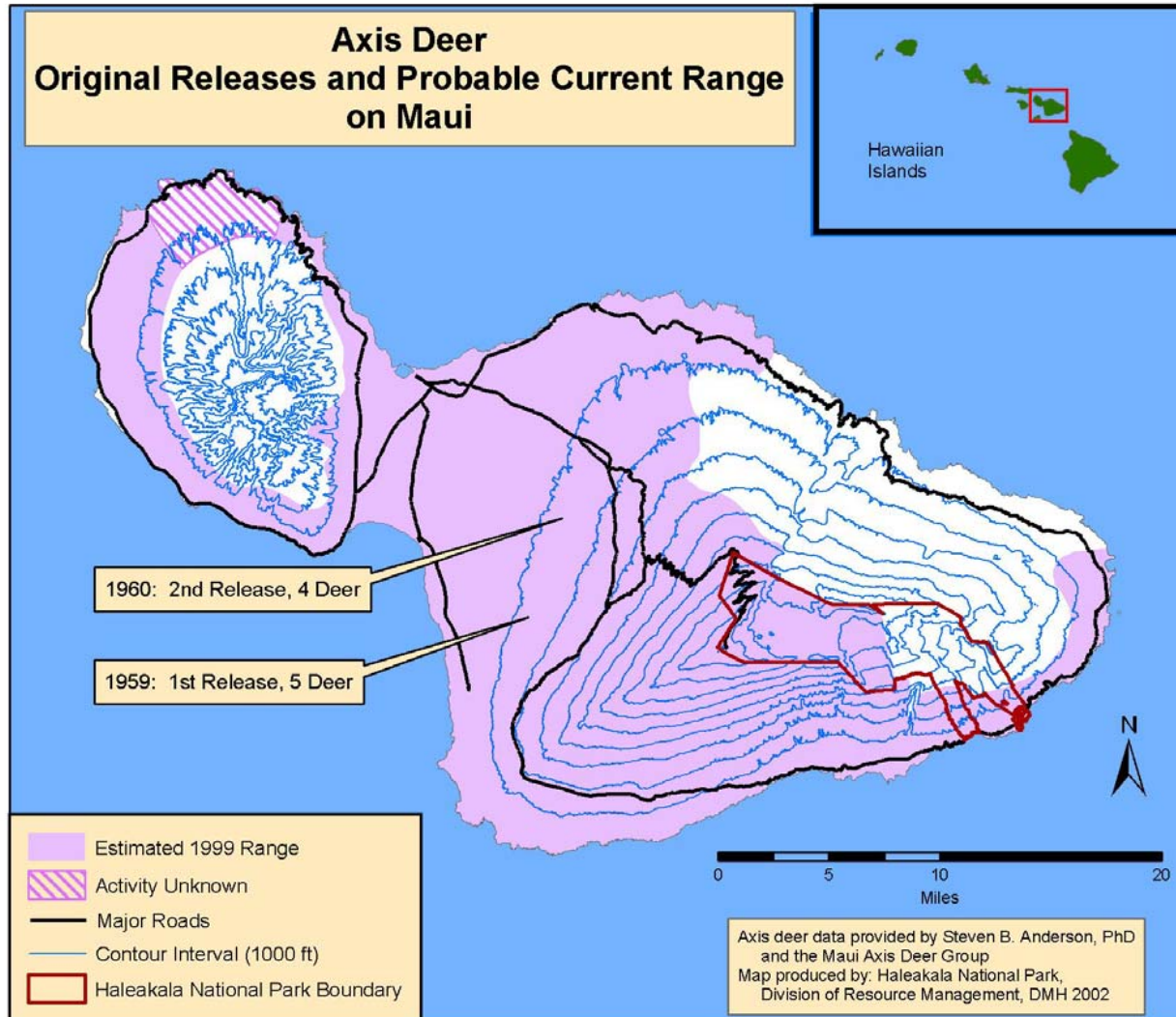
Data Compiled by:
Steven B. Anderson, PhD

Map Created by:
Haleakala National Park
Resources Management GIS
(7/29/2002)

Data Derived from:
Hawaii Dept. of Land & Natural Resources Salvage Record (1/1997 - 5/2000)
Maui Police Dept. Vehicle Collisions (1997 - 6/2000)
National Park Service (9/16/1999)



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