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COMMUNITY BASED FERAL PIG MANAGEMENT IN NORTHERN AUSTRALIA'S WET TROPICS

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ABSTRACT: A community based approach to feral pig (*Sus scrofa*) management has been adopted in the Wet Tropics region of northern Queensland (Australia) to foster adoption of best practice principles and community ownership of the problem. The program has demonstrated trapping as a successful control technique in an environmentally sensitive area as well as key concepts desirable for community involvement in natural resource management. Approximately 700 traps are currently available for use by 41 community-based trappers, with more than 10,000 feral pig captures documented since 1993.

KEY WORDS: feral pigs, trappers, trapping systems, management groups, cassowary, recreational hunting, devolved management, community extension, adaptive management

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INTRODUCTION

Feral pigs have been recognized as a significant threat to the conservation values of the Wet Tropics World Heritage Area (WHA), as well as having a substantial economic impact on neighboring rural industry. Following the World Heritage listing of the WHA in December 1988, public perception was that Wet Tropics Management Authority (WTMA) had caused the problem by "locking up" the WHA and creating a breeding ground for feral pigs, safe from outside disturbances.

In implementing the recommendations of a number of consultancies to WTMA, a management strategy was developed and implemented. This strategy was to utilize local community knowledge and support in addition to the other factors recommended in feral pig consultancies to WTMA.

This strategy evolved into a management plan termed the "Community Based Feral Pig Trapping Program" and has now been operational since April 1993. The program has undergone continual refinement over the last six years through an adaptive management process which has increased effectiveness and efficiency of the techniques used and has allowed the adoption of new management information as it becomes available. This approach has also enabled the program to respond rapidly to other issues as they arise such as non-target captures and animal welfare issues.

The program is designed to achieve the following management objectives:

Long Term Objectives

1. To reduce the impact of feral pigs upon the conservation values of the WHA.
2. To reduce the impact of feral pigs upon neighboring rural industry.

Short Term Objectives

3. To foster public involvement and ownership of the problem.
4. To encourage the adoption of Best Practice principals of feral pig management.

The implemented management plan encourages a regional approach, utilizing an environmentally acceptable control technique. Landholders have traditionally hunted feral pigs using trained dogs, a method proven to be ineffective and threatening to conservation values. Government agencies have previously conducted poisoning programs using agent 1080 (*sodium monofluoracetate*), however this method is also perceived to be environmentally unacceptable by some sections of the community. As well as assisting the conservation and protection of the WHA, the program has provided a framework for a regionally coordinated approach to feral pig management, with more stakeholders becoming involved as the program evolves.

ORGANIZATIONAL ENVIRONMENT

Organization is achieved by dividing the program into a series of trapping systems. A trapping system is defined as a set of traps within a certain local area operated by a trained trapper. This division is made purely to assist the organization of the program, with some trappers operating multiple trapping systems.

The trapper is responsible for organizing the day to day management of traps within his system(s), which will be performed by landholders, himself, or other feral pig harvesters (hunters). A majority of trappers are volunteers who gain some income from their operations by selling captured pigs to the commercial game meat and pet food industry or through other informal channels. Some trappers that operate larger trapping systems or organize a network of volunteer trappers or landholders are remunerated between \$200 and \$1,000 per month. The trapper is also responsible for the collection of all scientific and management data associated with his operations.

Trappers are required to attend a training workshop before commencing operations and then annually to ensure techniques used are compliant with current program specifications. After training, they are

accredited and issued with a trapper's manual, identification card and distinctive cap, which serves as a uniform and aids in promotion of the program.

Most trappers do not report directly to the project officer, but to a local management group. This group can be either a local primary producer group, an environmental organization, a natural resource management group or even an informal grouping of concerned local citizens. The management group provides the trapper with direction and acts as a liaison with the wider community. They also have complete control of the trapping system within certain parameters set by program management. Some management groups make payments to the trapper or supplement remuneration made by the program.

The Department of Natural Resources (DNR) provides overall management of the program in consultation with a representative stakeholder group, the Feral Pig Advisory Committee (FPAC). This committee also acts to disseminate information to stakeholder groups, government and the general community.

The Department of Natural Resources, as the lead state government agency for pest plant and animal control operate a feral pig research unit. The program has a close relationship with this unit and supplies all data collected to them in exchange for management information.

OPERATIONS

The Wet Tropics region of northern Queensland covers an area of approximately 2 million hectares and extends for about 500 kilometers along the northeast Queensland coast from Townsville in the south to Cooktown in the north. The major landforms include steep to undulating plateaus lying between 600 m and 900 m, mountain peaks rising to 1622 m, and coastal lowlands linking to the higher country through steep escarpments, ranges, and foothills. The vegetation types represented include tropical rainforest, open eucalypt forest, swamp, and mangrove forest. The dominant land use is agricultural, mainly broadacre sugar cane farming and to a lesser extent other horticulture such as bananas, papaya, pineapple, and passionfruit. The region presents unique problems due to the inaccessible nature of the terrain, high conservation values, and proximity to agricultural production and urban settlement.

These factors limit the choice of control techniques (McIlroy 1993; Mitchell 1993). General conservation values and the presence of endangered species such as the southern cassowary (*casuarius casuarius*) and the tiger quoll (*dasyurus maculatus gracilis*) preclude the use of poisoning due to concerns of non-target bait take. The poison used in government sanctioned control operations is sodium monofluoroacetate (agent 1080) and must be used at concentrations up to 0.05% w/w, raising concerns of secondary and even tertiary poisoning. The only other poison registered for use is phosphorus based and seen to be inhumane. Helicopter shooting is impractical due to the dense rainforest canopy and surrounding sugar cane monoculture. On ground hunting with dogs has been a traditional control technique used by landholders and is still popular as a recreational activity, though it has been proven ineffective and may threaten conservation values.

Many landholders have a positive perception of this method as it can halt acute damage to crops by dispersing feral pigs and involves no cost or effort other than to contact a local recreational hunter.

The Community Based Feral Pig Trapping Program commenced operations as a feral pig management plan in April 1993, following the commissioning of several consultancies and extensive public consultation by WTMA. Trapping had been used previously by landholders using a variety of strategies and techniques that had been adapted from methods used in other regions. The results had been erratic and it was apparent that coordination at both the local and regional level was required. The decision to devolve as much of the management responsibility as possible to the local level was made at the outset and has proven to be extremely effective in developing links with the community and utilizing invaluable local knowledge.

Traps used are exclusively of the cage type, designed to contain captured pigs as humanely as possible and can be divided into the following three types.

- (a) Silo traps are constructed from a 1.5 m wide roll of 100 mm square, 5 mm high tensile steel mesh arranged in a roughly circular pattern and fixed to the ground by steel posts. The circumference of the trap is usually about 10 m but can be up to 120 m if high catch numbers are anticipated. The entrance is a 8 m wide side swinging mesh door hinged to a steel post and closed by a trampoline spring. The trip mechanism that holds the door in the set position is a 100 mm diameter piece of timber with slots cut in either end that rest on the mesh of the door and a section of the trap wall. Feral pigs feeding on the bait lift the trip bar with their snouts and release the door. Downwards or sideways pressure does not dislodge the trip-bar, making non-target captures less likely. This style of trap is relatively cheap to construct, but more difficult to relocate than other types.
- (b) Box traps operate on a similar principle to silo traps but have a rigid steel frame and are usually constructed to fit on the back of a standard vehicle tray for ease of deployment. These traps require a roof or the use of returns to prevent captured pigs from climbing up the corners. As a result the height can be as little as .9 m but is usually 1.2 m. Two steel posts are used to anchor the trap, which is very easily moved to follow feral pig activity.
- (c) Panel traps are very similar to box traps but are capable of being dismantled to allow many to be stacked on a vehicle. Most are 1.5 m high with removable gussets fitted to the top of the corners to prevent pigs climbing out and add strength.

All traps use a side swinging door with the trip-bar release mechanism. Other entrances such as guillotine doors and spear or one-way entrances have previously been used but found to be either not target specific or dangerous.

Traps are usually set near the boundary between farmland and the forest and, if possible, pushed back slightly into the scrub-line or along an access track in the forest, close to signs of activity but not on top of it. Pre-feeding is undertaken before placing the trap in

position and then for another two or three nights before setting the trap.

The bait used is mainly waste bananas from nearby farms or other scrap fruit or vegetables, with consideration given to the risk of seed dispersal. Meat baits are used elsewhere in Australia but have proven ineffective in this region. The fact that bananas are available in large quantities and at no cost has been absolutely crucial to the success of this program. Trapped feral pigs are generally removed by shooting in the trap but are removed live by some operators in a mesh crate. While it is widely believed that live removal will enhance trap efficacy on subsequent nights, the risks and effort involved are seen to outweigh the benefits.

OUTCOMES

Since commencing operations in 1993, in excess of 10,000 feral pigs are documented as being captured. About 550 program traps are available, with 150 privately owned traps reported as being under the program's control. In addition to this number approximately 300 to 400 privately owned traps have been constructed as a result of extension activities, but are operated beyond the program's control. These traps form 53 trapping systems operated by 41 program trappers who are supervised by 26 local management groups.

FINANCES

The program is financed by various government agencies with a statutory or other responsibility for land management. Several industry and local management groups fund individual trapper's operations by direct payments to the trapper. Commercialization has the potential to further finance the operations of individual trappers, however, demand is unreliable due to supply being to a niche market. Difficulty in maintaining a reliable supply to the market is also a problem due to seasonal climatic conditions, other work commitments and other factors.

LIMITATIONS

The program's success in addressing the short term objectives of community ownership of the problem and adoption of best practice principles are well advanced, though the long term objectives of reduced impact upon the environment and agricultural production are unquantified due to the lack of a suitable monitoring system. DNR's feral pig research unit are currently developing a system to address this as well as quantifying the environmental impacts of feral pigs.

As this pest control program relies on palatable bait as an attractant, there remains considerable potential for a quantum leap in efficacy from continued bait development. A hormonal based attractant, an easily

transported processed bait, or even an untried naturally occurring bait could prove invaluable.

SUMMARY

The program has been successful in achieving some of its objectives due to several factors incorporated in the original management strategy. These factors are not specific to feral pig management, or indeed vertebrate or other pest management, but can be applied to most natural resource management issues.

1. The structure employed to devolve management to the local level while retaining regional coordination has been the single most important factor. Trapping systems with a strong local support structure and ownership place less demands upon program resources, enjoy greater local support and are generally more successful.
2. The program was initially research based and has evolved into a control program mainly due to its scale and the amount of coordination required to deal with the many and diverse stakeholders involved. Strong links with this research base remain and adaptive management has been a feature of the program since its inception.
3. The capacity for community extension demonstrated by this program is unparalleled in this region. The networks developed by some program trappers are an exceptional example of community based natural resource management in the breadth of the interface created between government and the community. Governments would be unable to employ enough extension and communication staff to have an equivalent reach, and more importantly impact, upon the community as a handful of program trappers. Environment Australia, the Federal Government's environmental agency, has recognized this achievement and recently provided funding to further the extension capacity of program trappers.

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