Discussion on Pig Management- NPS/TNC
Haleakala National Park
September 7, 1984

Location: HALE Research Conference Room
Time: 8:30 A.M.

Item to resolve:
What steps can be taken in the immediate future or forseeable future to address the pig problem in Hana rainforest and Kipahulu Valley? Can we do anything before we have a fence? Who should take the next step?

Background: HALE has developed a Resources Management Plan for Kipahulu Valley (involving fence construction, pig removal, and alien plant management) which has received broad endorsement (HALE Supt., HALE RM, Kipahulu District, HALE Research, HAVO Research, PAAR, WRO, TNC, CPSU/UH, etc.). The plan says that little can be done to deal with Kipahulu RM problems until the fence is in place. HALE seems to have done all within its power to seek the necessary funding (10-238's at top of PAAR priorities, etc.). Unfortunately, although funding possibilities in the long-term look excellent, prospects of getting funding for Kipahulu fencing in the near future are not outstanding because of the Federal budget deficit. Even if funding were to be authorized tomorrow, fencing would take several years. Meanwhile, tremendous irreversible damage is apparently being done daily to the native ecosystems of the valley. What, if anything, can be done right away to at least slow the deterioration?

AGENDA

-Background- L. Loope/A. Medeiros

-Recent progress in HAVO pig research & management- C. Stone/L. Katahira

-TNC progress in pig management at Waikamoi and Kamakou- Quisenberry/Holt

-What further pig research is needed at HALE?- C. Stone

-Possibilities for research on chemical control of pigs; What? How? How soon? -C. Stone

-Viewpoint of HALE RM Program- R. Nagata

-Kipahulu District viewpoint- K. Cabatbat/T. Lind

-Superintendent's view- H. Huntzinger

-Open discussion

-Conclusions

RON

10 September 1984

To: Superintendent, Haleakala

From: Research Biologist, Haleakala

Subject: Need for applied pig research in Kipahulu ASAP

In a meeting on RM concerns held last week (summary attached), everyone agreed that pig damage seems to have been accelerating in recent years in the Hana rainforest and bogs and in upper Kipahulu Valley. This memo is an attempt to document these concerns and to propose an interim response.

Diong considered the area of HALE's Kipahulu District above 5000 ft to be suboptimal pig habitat and found relatively low pig populations and damage in 1978-80, in contrast to very high pig activity levels in the lower and middle valley. Researchers in the montane bogs found very little pig damage until 1980. In the summer of 1980, both U.S. Fish and Wildlife and CPSU/UH researchers reported extensive and severe pig rooting damage in one of the bogs ("Greensword bog"). The park responded in June 1981 by fencing this bog with the aid of volunteers. A second bog, nearly pristine until mid-1983, was fenced in December 1983 after serious pig damage. Pig rooting in unfenced bogs accompanied by invasion of alien plants has increased greatly since it began in 1980. The same pattern may be occurring in upper Kipahulu Valley. C.P. Stone's expeditions in 1982-83 detected substantial pig impacts near the higher camps (at 6200-6400 ft). Two expeditions (Medeiros, Gagne) in August 1984 experienced higher pig activity than ever before.

Recent increases in high elevation pig activity may be at least partially due to the dry weather of the past two years. Ted Rodrigues states that pigs from Kipahulu and Kuiki are spilling over into the Hana Mountain area for the first time, based on color characteristics of pigs shot. Weather and season are definitely known to influence pig distribution. Rodrigues says that many pigs normally move from the forests into higher elevation grassland areas in summer. It isn't clear whether this results from the increased relative attractiveness of the higher habitats in summer or from increased population pressure within the forest at such times due to reduction of non-density dependent habitat stress on the population. In spite of Diong's excellent study, much remains to be learned about high-elevation pig populations.

Upper Kipahulu Valley and the adjacent Hana rainforest have what is probably the most intact ecosystem remaining in either HALE or HAVO. The implications of increasing irreversible pig damage in this area are therefore particularly alarming. Participants at the meeting felt that the most appropriate short-term response from HALE would be to request emergency assistance from Chuck Stone.

HALE developed a Resources Management Plan for the Kipahulu

District a year ago, largely based on the findings of C.H. Diong's pig study which had then become available. Although 10-237's and 10-238's for implementation of the plan rank very high in PAAR and Regional priorities, funding is not expected for at least several years. HALE's RM planning has perhaps naively assumed until recently that Stone's work at HAVO would supply the necessary information for effective pig control at HALE and/or that Stone would be able to use funds for his ongoing pig research project where the need for pig control research is greatest. HALE's 10-238 for Kipahulu fencing does contain a component for associated research, but no provision has been made for a separate HALE pig research project prior to fencing. Perhaps it would be appropriate at this time to formally ask that Stone undertake research in upper Kipahulu-Hana rainforest.

HALE's RM program currently has its hands full with fencing, predator control and goat control in the Crater District (and relies heavily on volunteers for the latter two activities). The very limited staff in the Kipahulu District is inadequate even to deal with the high visitor safety demands of the Oheo area. But even if personnel were available for pig control today, time might inevitably be lost with trial and error in use of control techniques. Stone's work should investigate the effectiveness of various pig control strategies in this remote, high-elevation area. The work should determine how quickly the population is able to rebuild numbers after pig removal. [redacted] With a relatively small redirection of priorities in research funding, the groundwork could be laid for greatly accelerating the pig removal effort from this important and pristine area.

Nagata

United States Department of the Interior

NATIONAL PARK SERVICE
HAWAII VOLCANOES NATIONAL PARK
HAWAII 96718

IN REPLY REFER TO:

N1615(HAVO)
xN2219

September 10, 1984

Memorandum

To: Superintendent, Haleakala National Park

From: Research Scientist, Hawaii Volcanoes National Park

Subject: Feral Pig Research and Management Meeting--September 7, 1984

A meeting to discuss feral pig research and management strategy for Kipahulu Valley was held September 7 in the HALE Research Center. Those in attendance were: R. Nagata, L. Loope, T. Rodrigues, T. Quisenberry, C. Stone, and T. Ohashi. A. Holt arrived toward the end of the meeting.

Although pig control strategies and programs at HAVO, HALE, Kamakou and Waikamoi were discussed, the main result of this meeting was the concensus that pig damage in Kipahulu Valley is increasing alarmingly, and cannot wait until fencing in FY 1987 (at the earliest). Evidence for this includes increasing damage to bogs recently, greater numbers of pigs with domestic bloodlines moving up (from Kipahulu) on Hana Mountain, increasing damage by goats and pigs in Upper Kipahulu Valley, increasingly observable pigs in the grasslands and in areas driven for goats by HALE personnel and others, and the increasing need to fence pigs out of po'ouli and parrotbill habitat. Medeiros also mentioned the excellent point that the invasion, increase and then decline of aliens in an area often does irreversible damage because entire taxa can be removed at peak population levels.

Nagata stated that money for pig research and management will probably be available in FY-86 and 87, but that there is none in FY-85. Stone said that his budget was pretty well committed for FY-85 and that he is well aware of the amount of time and dollars studies in Kipahulu would require. He agreed that the area is very important and that much could be learned there. The need was expressed for studies in Upper Kipahulu of pig damage patterns and trends, methods and rates of removal in a low pig density area, and (probably) movements and bait preferences. [redacted] Although Diong considered the Upper Valley marginal habitat for pigs at the time of his study, its

role as habitat for transients and the capacity to absorb more pigs are not known.

Stone said that at HAVO, removal methods effective at low densities were just now being tested. Dogs might be having difficulty removing the last few pigs in the Puhimau area. [redacted] Nagata said that he could not spare people and funds at this time, and believed that Research alone should find out a few things first to increase the efficiency of control by Management later in Kipahulu.

Stone suggested that the need for emergency research would require special justification by HALE and amendment of the RMP to avoid jumping priorities. He mentioned that forest baseline research in the face of geothermal development at HAVO was given similar high priority temporarily. Loope agreed to draft a document identifying the problem and requesting assistance. Stone agreed to draft a research proposal if warranted by Area Office and Western Regional Office response.

/s/ CHARLES P. STONE

Charles P. Stone

bc:
Regional Chief Scientist, WRO
Director, CPSU/UH at Manoa
Pacific Area Director
Research Biologist, HALE
Resources Management, HALE (Nagata)
The Nature Conservancy

THE FERAL PIG PROBLEM IN KIPAHULU VALLEY, HALEAKALA NATIONAL PARK

History.--The feral domestic pig is a recent arrival in Kipahulu Valley. Large scale pig 'ranches' were established during World War II but were discontinued in the 1950s and the pariah populations became feral. A few feral pigs were observed below 2000 ft (below the pristine area) in the 1950s and described as abundant in 1960. Pigs were evident above 2000 ft in 1967 but by 1976 their impact was so bad that it was described as a disaster area. Exotic weeds have increased in the pristine area (1945 - 5 species, 1967 - 28, 1980 - 49) in a pattern closely correlated with the pig invasion.

Negative impacts.--Rooting creates seed beds for aggressive weeds. Erosion is increased significantly, stripping soil from the ground and polluting the streams with their unique Hawaiian biota.

Preferred food plants are destroyed. In Kipahulu Valley, these include tree ferns, lobeliads, and the climbing screwpine.

Pools and puddles create breeding grounds for mosquitoes which are vectors for avian malaria. The valley includes critical habitat for at least four endangered forest birds which are susceptible to the disease.

Pigs prefer strawberry guava fruit, transporting seeds to new environments where they become established. The plants shade out all other species replacing the native understory and ultimately the dominant tree.

Pigs carry a number of human pathogens, e.g., Giardia and Leptospirosis. Both are present in the valley and thus are a potential hazard to people swimming in Oheo Gulch.

Recommendations.--Develop a control strategy during the next fiscal year for implementation in the following year. Three techniques are recommended: [redacted] and, Hunting with dogs. The latter approach must be a NPS controlled program with NPS-trained dogs. There will need to be permanent and seasonal resource management personnel in Kipahulu.

What will happen if not implemented?--If the control program is not implemented within the next five years the valley ecosystem between 2000-3500 ft will be irretrievably disturbed and converted into a strawberry guava thicket. Areas further up the valley including the endangered forest bird habitat would be impacted and threatened with irreversible damage.

Future cooperative arrangements with the State of Hawaii and The Nature Conservancy (both of whom donated the land) could be seriously compromised. Kalaupapa (a joint NPS/State venture) and Keauhou Ranch adjacent to HAVO (a potential TNC acquisition and possible addendum to HAVO) come to mind.