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The Honorable Daniel K. Akaka
The Honorable Daniel K. Inouye
United States Senate

Fruit flies, such as the Mediterranean fruit fly and Oriental fruit fly, pose a major threat to the production and marketing of fruit within the United States and throughout the world. According to the Agricultural Research Service (ARS), an infestation of the Mediterranean fruit fly in the United States, for example, could cost up to $1 billion per year in crop damage and reduced trade. To combat the threat of such an infestation, the U.S. Department of Agriculture (USDA) has for many years been studying and pilot-testing techniques for suppressing and eradicating fruit flies. However, concerns have been raised about the effectiveness of USDA's recent research on fruit flies at ARS' Tropical Fruit and Vegetable Research Laboratory in Hawaii.

In July 1995, you asked us to respond to eight specific questions on certain aspects of the Hawaii laboratory's operations. These questions focused on decisions and expenditures on fruit fly research activities and laboratory facilities in Hawaii. The following information provides background on the laboratory and a chronology of the events affecting the research projects and facilities identified in your request, as well as responses to your eight questions.

BACKGROUND AND CHRONOLOGY

ARS' Hawaii laboratory has two research units: (1) the Genetics, Rearing, Radiation, and Commodity Treatment Research Unit and (2) the Behavior, Ecology, Semiochemical, and Field Operations Research Unit. The latter unit comprises four research activities, including (1) using biological, ecological, and behavioral techniques to control tropical fruit flies; (2) identifying fruit fly attractants and lures and fruit fly parasites; (3) testing sterile Mediterranean fruit fly (medfly) releases; and (4) employing a

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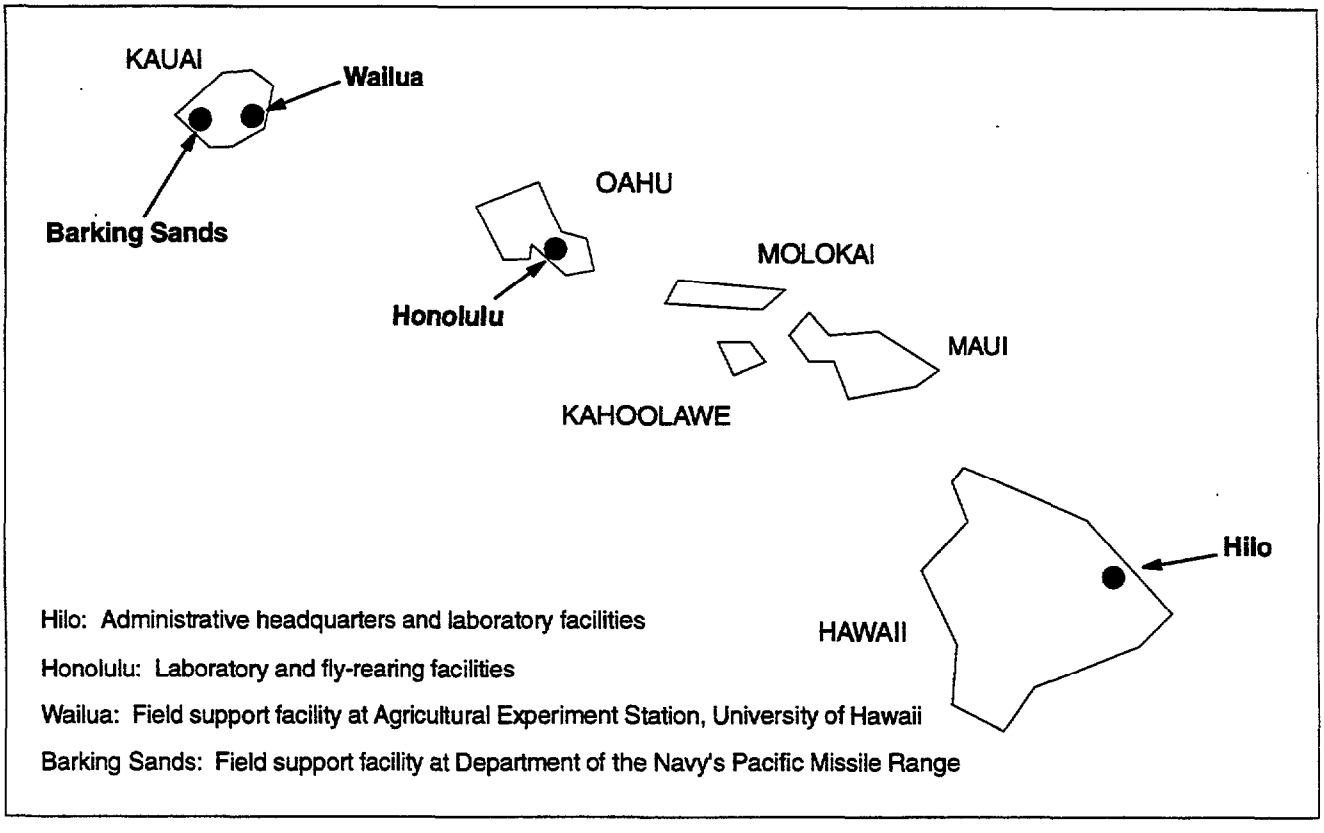
systems approach, which combines techniques to suppress fruit fly populations. The laboratory and its research units study fruit flies and conduct other research at various offices and experiment stations on the Hawaiian islands of Oahu, Kauai, and Hawaii (see fig. 1).

Figure 1: Location of ARS' Facilities in the Hawaiian Islands



Source: ARS' National Program Staff, Beltsville, Maryland.

ARS works closely with USDA's Animal and Plant Health Inspection Service (APHIS), which is responsible for, among other things, protecting U.S. agriculture from harmful pests. APHIS' activities include eradicating pests and quarantining agricultural commodities to ensure that they are pest free. ARS assists APHIS by researching technologies for eradicating and suppressing pests.

In the late 1980s, ARS set an ambitious goal of eradicating the medfly, Oriental fruit fly, Malaysian fruit fly, and melon fruit fly from selected Hawaiian Islands. The primary method of eradication was to be the release

of large numbers of sterile flies developed by both ARS and APHIS. The theory was that by mating with wild flies, these sterile flies would slow down breeding to the point that the fruit fly population would die out faster than it could reproduce.

To achieve its goal of eradicating fruit flies from Hawaii, the laboratory initiated the medfly project in 1989. This project included a pilot test to release sterile flies to combat medflies infesting coffee-growing areas on Kauai.[1] Although ARS testified in March 1990 that it would be able to achieve its goal, it revised the project's objective in 1992 from eradicating the medfly to demonstrating the technology for suppressing it, in part because rapid growth in the fruit fly population had made eradication a less realistic goal. In addition, according to ARS' Deputy Administrator for National Program Staff, ARS is charged not with eradicating pests, but with studying techniques that might be used to eradicate or suppress (i.e., reduce) their populations. Officials from ARS and APHIS agreed that if an eradication program were undertaken, APHIS would be responsible for it.

ARS began researching the systems approach in orchards of tropical fruit, such as papaya and guava, in fiscal year 1992. The agency's goal was to control tropical fruit flies and eliminate the need for quarantining harvested commodities. The project's methodology called for research on mass-trapping techniques and releases of parasites. The methodology also called for experiments using treatments to annihilate male flies in the Moloaa area to lower medfly, Oriental fruit fly, and melon fly populations.

To support the medfly pilot test, the laboratory leased one installation and expanded another. Specifically, it gained more space for laboratory functions and for storing and hatching sterile flies by (1) leasing a facility at Barking Sands, Kauai, in 1989 and (2) expanding existing buildings and adding storage trailers at Wailua, Kauai, in 1991 and 1992. The Barking Sands location also provided access to an airstrip for releasing sterile medflies from airplanes and helicopters. The laboratory stopped wide-scale aerial releases of sterile medflies in 1993 but continued to use the Barking Sands facility for other fruit fly research. The laboratory does not plan to renew its agreement for the Barking Sands facility in fiscal year 1996. The Wailua trailer park did not become operational until April 1995, when the laboratory obtained the University of Hawaii's consent to connect water and electrical utilities to the site.

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[1]Although fruit flies do not damage coffee beans, they use coffee plantations or areas where wild coffee grows as breeding grounds.

ARS planned to develop another facility for fly rearing to support the medfly project and other projects. In 1994, the agency leased a site near the Honolulu International Airport as a replacement for a fly-rearing facility at the University of Hawaii's Manoa campus. However, ARS abandoned the plans for this site when APHIS and state agricultural authorities criticized its location near the airport as presenting a risk that outgoing flights might carry escaped flies to uninfected areas on the U.S. mainland or abroad.

RESPONSES TO SPECIFIC QUESTIONS ABOUT ARS' OPERATIONS IN HAWAII

While USDA has been conducting research on the eradication and suppression of fruit flies for many years, your questions focused on the recent operations and the effectiveness of the fruit fly research at ARS' Hawaii laboratory. A detailed response to each of your questions follows.

Question 1: What was the rationale for changing the research emphasis of the laboratory's medfly project on Kauai, and how much did the laboratory spend on the medfly pilot test?

Rationale for Changing Research Emphasis

ARS' management stopped the releases of sterile medflies on Kauai in 1993 and subsequently changed the focus of the medfly research when it found that the pilot test did not meet the project's objective of suppressing the native medfly population in the test area. The Hawaii laboratory tested the efficacy of sterile medfly releases from October 1990 through September 1993 in two test areas on Kauai (see fig. 2).

Figure 2: History of Events Related to the Medfly Project

August 1989	ARS initiates medfly project on Kauai.
October 1990	Laboratory initiates first sterile fly releases.
February 1992	ARS reclassifies medfly project from eradication to a demonstration of suppression technology.
May 1993	Laboratory halts sterile fly releases in lowland cultivated coffee groves.
September 1993	Laboratory halts sterile fly releases in upland canyons. ARS shifts emphasis to researching ancillary suppression techniques.

Scientists at the Hawaii laboratory concluded that the medfly pilot test did not achieve the high ratio of sterile to wild flies needed to suppress the medfly population. Such a high ratio is required to decrease the rate of fertile fly matings and thus suppress the population. Laboratory scientists estimated that the population would be suppressed if surveys in the release area indicated a sterile-to-wild-fly ratio of 100 to 1. Surveys of trapped flies in the cultivated areas yielded a ratio of 84 to 1 in mid-1992 but fell to about 2 to 1 by December 1992, indicating that the wild fly population was not suppressed.

Laboratory scientists attributed the outcome of the medfly pilot test to two developments. First, the wild medfly population in the treated area had acquired a resistance to mating with the laboratory strain of sterilized flies. Second, the rapid growth of the cultivated coffee acreage on Kauai had increased beyond a reasonable level the amount of host material available to breeding medflies. For example, according to statistics from the Hawaii Department of Agriculture, coffee crop acreage on Kauai, which includes the test plot area, increased by 3,530 acres, or over 400 percent, from 1989 to 1993.

The laboratory suspended wide-scale releases of sterile flies in the cultivated lowland coffee groves in May 1993 and stopped releases from helicopters in the upland canyons in September 1993, shifting its research emphasis to the mating resistance problem and ancillary suppression technologies. An ARS national project review committee, which included representatives from ARS' National Program Staff and Pacific West Area Office, APHIS, USDA's Cooperative State Research Service, and academia, had suggested in 1991 that the project place more emphasis on other suppression technologies.

Officials from ARS' National Program Staff, APHIS, the California Department of Food and Agriculture, and the Hawaii Department of Agriculture, as well as most of the laboratory scientists working on the medfly project, concurred with the director's assessment that the releases had not succeeded in suppressing the medfly population and that the study of ancillary suppression techniques was appropriate.

Expenditures for the Medfly Project

The Hawaii laboratory expended about $8.5 million on the medfly project from 1989 to 1994.[2] While there is no specific appropriation for tropical fruit fly research at the laboratory, ARS' Director of Budget and Program Management Staff believes that the funding levels for this research were in line with guidance contained in the Senate and House Committee and Conference reports on ARS appropriations. Table 1 shows, for fiscal years 1989 through 1994, how ARS allocated and expended medfly project funds in Hawaii.

[2]We could not identify the amount expended on the medfly pilot test because ARS' financial records track funds to the project level, not to individual tests.

Table 1: ARS' Expenditures for the Medfly Project, Fiscal Years 1989-94

Dollars in thousands

Fiscal year	Expenditures					
	Salaries[a]	Research grants and agreements	Equipment	Other[b]	Indirect costs[c]	Total[d]
1989	$ 71	$ 45	$ 40	$ 159	$ 0	**$ 315**
1990	422	193	195	336	96	**1,242**
1991	370	235	840	83	138	**1,665**
1992	551	434	198	518	317	**2,018**
1993	572	54	275	391	349	**1,641**
1994	561	540	26	204	304	**1,634**
Total[d]	**$2,547**	**$1,499**	**$1,574**	**$1,692**	**$1,204**	**$8,515**

[a]Salaries reflect budgeted amounts because laboratory staff are not required to record the actual time spent on each project.

[b]Other includes expenditures for travel, supplies and materials, and contracts for services, such as aerial releases.

[c]Indirect costs include the costs of laboratory activities (e.g., rearing fruit flies) and overhead (e.g., administrative salaries) that are allocated to more than one project.

[d]Totals do not add because of rounding.

Source: Budget and procurement records from ARS' Pacific West Area Office.

From 1989 through 1993, the year the sterile medfly releases were stopped, ARS spent $6.9 million, or 81 percent of the total expenditures for the project. After stopping the releases, ARS used the project funds to pursue ancillary suppression techniques and to research the native flies' resistance to mating with laboratory-bred sterile flies. ARS also used about $967,000 from the project funds to pay for part of the improvements to facilities discussed under questions 3 and 5.

Question 2: What is the status of the laboratory's male fruit fly annihilation test at the Moloaa area of Kauai, and how much has ARS expended on this test?

Status of the Male Fly Annihilation Test

ARS canceled the male fruit fly annihilation test in Moloaa, which was part of the broader systems approach project, because (1) the test did not involve new or innovative technologies and was behind schedule in obtaining a required permit for the use of insecticides and (2) a Senate Appropriations Committee report directed ARS to de-emphasize research on eradication in favor of work on treating commodities (e.g., with fumigants and hot water washes).

According to an ARS official, the proposed male annihilation technologies have been used in California for about 20 years, so the planned test would have provided few new data. Moreover, the test would have used unregistered insecticides in an experimental fashion and would, therefore, have required an experimental use permit from the Environmental Protection Agency. Although the laboratory initially planned to conduct the male annihilation test in October 1993, it did not submit a complete application for the required use permit until April 1995. Delays occurred, according to laboratory documents, because (1) the Environmental Protection Agency took more than 6 months to respond to the laboratory's inquiry about the need for a use permit and (2) numerous errors had to be corrected in the application for a use permit, such as errors in the type and amount of insecticide listed.

ARS also believes that the test's cancellation was in line with a June 1994 Senate Appropriations Committee report on fiscal year 1995 ARS appropriations. The report recommended that ARS scale back fruit fly eradication tests to provide more resources for higher-priority needs.[3] Specifically, it urged ARS to (1) accelerate the development and approval of high-priority quarantine treatments to enable the shipment of diversified agricultural products to domestic and foreign destinations and (2) provide $600,000 to the University of Hawaii for research on papaya ringspot virus and pineapple nematode resistance.

[3]Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Bill, 1995, S. Rep. No. 103-290, 103d Cong., 2d Sess. 21-22 (1994).

Cost of the Male Fly Annihilation Test

We could not identify how much ARS had expended on the male annihilation test; however, the agency spent about $1.75 million on the broader systems approach project from fiscal years 1992 through 1994 (see table 2). Salaries for scientists and support staff accounted for about $982,000, or 56 percent of the expended funds, while indirect research costs (laboratory overhead) accounted for about $405,000, or 23 percent of the 1992-94 expenditures. The remaining $361,000, or 21 percent, was spent on research agreements and grants, equipment, and miscellaneous items.

Table 2: ARS' Expenditures for the Systems Approach Project, Fiscal Years 1992-94

Dollars in thousands

Fiscal year	Expenditures					
	Salaries[a]	Research grants and agreements	Equipment	Other[b]	Indirect costs[c]	Total[d]
1992	$ 330	$11	$61	$119	$112	**$ 633**
1993	328	48	1	33	141	**550**
1994	325	30	1	58	151	**564**
Total[d]	**$982**	**$88**	**$63**	**$210**	**$405**	**$1,748**

[a]Salaries reflect budgeted amounts because laboratory staff are not required to record the actual time spent on each project.

[b]Other includes expenditures for travel, supplies and materials, and contracts for services, such as aerial releases.

[c]Indirect costs include the costs of laboratory activities (e.g., rearing fruit flies) and overhead (e.g., administrative salaries) that are allocated to more than one project.

[d]Totals do not add because of rounding.

Source: Budget and procurement records from ARS' Pacific West Area Office.

ARS used about $22,000 of the funds for the systems approach project to pay for part of the improvements to facilities discussed under questions 3 and 5.

Question 3: How much did the laboratory spend to construct and maintain its facility at the Pacific Missile Range, Barking Sands, Kauai, and what are the laboratory's plans for this facility?

Expenditures for the Barking Sands Facility

ARS has expended about $621,000 on construction, support services, and improvements at its Barking Sands facility since 1989. Most of this amount, $453,000, was paid to the U.S. Navy for the construction of three buildings that were used primarily for the medfly pilot test. Table 3 shows ARS' expenditures for facility improvements from 1989 through 1994.

Table 3: ARS' Expenditures for Construction, Support Services, and Improvements to the Barking Sands Facility, Fiscal Years 1989-94

Expenditures in thousands of dollars

Facility improvement	Fiscal year	Expenditures	Source of funds
Design and construction of 3 buildings and site improvements	1989-90	$453	Unknown--expenditure records do not indicate project source[a]
Annual support services (guard, janitorial, etc.)	1990-94	121	$110,000 from medfly project, $10,000 from systems approach project
Acquisition and installation of 2 temporary trailers for fly storage	1992	47	$47,000 from medfly project
Total		**$621**	

[a]Although expenditure records do not identify the funding source, the procurement requests indicate that ARS planned to use $310,000 of the medfly project's funds for this contract.

Source: Budget and procurement records from ARS' Pacific West Area Office.

Future Plans for the Barking Sands Facility

The laboratory has continued to use the Barking Sands facility for field research on fruit fly suppression technologies, although it stopped wide-scale releases of sterile medflies in 1993. For example, the laboratory used the facility for tests of mass-trapping techniques, which were planned for use in conjunction with future releases of sterile flies. In addition, laboratory staff have been studying the distribution patterns of Oriental fruit flies.

Because of budget constraints, however, the laboratory does not plan to renew its support services agreement for the Barking Sands facility in fiscal year 1996. As a result, the laboratory will consolidate the Barking Sands staff and research activities at the laboratory's facility at the Wailua Experiment Station on Kauai.

Question 4: Why did the laboratory abandon the helipads on Kauai and shift its resources to mass trapping and using the chemical attractant Ceralure?

Rationale for Abandoning the Kauai Helipads

The Hawaii laboratory stopped releasing sterile medflies from helicopters in September 1993, in accordance with the decision to stop all sterile fly releases associated with the medfly pilot test. The inability to suppress the medfly population in the prime medfly breeding area, combined with the finding that medflies migrated from the lowland breeding area to the upland canyon area where the helicopter releases occurred, reduced the significance of further helicopter releases.

Although the helicopter releases over the canyon area achieved high flooding ratios of sterile to wild medflies and reduced the medfly infestation rates, researchers discovered that the canyon's medfly population was not well isolated from the massive medfly population found in the cultivated coffee groves on Kauai's lowlands. Fly-trapping data revealed that dye-marked sterile flies released in the lowland coffee grove test area migrated to the canyon area. Since ARS had decided in May 1993 to halt sterile medfly releases in the lowlands because the releases failed to suppress the medfly population's growth, wild medflies migrating from the lowlands to the highlands would make sterile fly releases in the upland canyons ineffective. Concluding that the helicopter release portion of the medfly pilot test had achieved essentially all that it could, the laboratory director,

with the full support of ARS' National Program Staff, decided to stop using helicopters for the project.

Additionally, ARS' management considered the contract for helicopter services to be very expensive and concurred with the laboratory director's judgment that the resources could be applied more effectively to researching ancillary suppression technologies. From 1991 through 1993, ARS paid Niihau Helicopters $565,000 for flight services, a site survey, and helipad clearing. Niihau Helicopters charged ARS approximately $1,900 per hour for flight services, whereas the two fixed-wing aerial contractors charged ARS $182 and $190 per hour, respectively.

Rationale for Researching Ceralure

After canceling the sterile medfly releases, ARS shifted the project's emphasis to researching related fruit fly suppression technologies, one of which was the mass trapping of male fruit flies (referred to as the male annihilation technique). The mass-trapping research involved testing the ability of ground-based sticky traps, baited with a chemical attractant, to lure male fruit flies. In February 1991, 2 years prior to this shift in research emphasis, the previously mentioned ARS review committee recommended increasing mass-trapping research and incorporating the use of the fly attractant called Ceralure.

The director of the Hawaii laboratory coinvented and patented the use of Ceralure as an attractant. ARS encourages its scientists to invent new products and use their inventions in research projects because it believes such action helps to transfer technology to the private sector. The inventors receive 25 percent of the royalties paid to the government if the product is licensed by a private producer.[4] At least three scientists at the laboratory have patented inventions, although not all patents have been licensed and maintained.

Because ARS does not track the royalties received by individual scientists in relation to specific research projects, we could not determine the specific financial benefit the director may have derived from the use of Ceralure on this project. However, the director and his coinventor have jointly received a total of $11,000 in royalties through ARS for all uses of Ceralure since 1990.

[4]Up to a maximum of $100,000 per year per invention.

Although the refocused research suppressed some of the medfly population, the laboratory stopped using Ceralure in March 1994. The attractant had proven effective in previous tests on Oriental fruit flies but was ineffective for the mass trapping of male medflies. ARS has continued its research on mass-trapping techniques but is now focusing on other chemical attractants and improved trap designs.

Question 5: Why did the laboratory make improvements to, and purchase additional vehicles for, its Wailua facilities in light of its stopping the medfly pilot test, and how much did it spend to improve the facility?

Rationale for Improving the Wailua Facilities

ARS improved the leased facilities at the Agricultural Experiment Station at Wailua between 1991 and 1992 primarily to support the sterile fly releases planned under the medfly project. The improvements included renovations to existing laboratory facilities, the development of a separate trailer park site, and the acquisition and installation of eight trailers for storing and hatching fruit flies.[5] The buildings were renovated and the trailer park site was constructed by March 1992. However, the trailer park site was left unused because ARS could not obtain the consent of the landowner, the University of Hawaii, for water and electrical utility easements to the site until April 1995. According to the commercial project architect, she and the laboratory did not anticipate the university's delay in granting utility easements because the utility companies were involved in the design sessions.

Even though it had canceled the wide-scale release of sterile flies in 1993, the Hawaii laboratory completed the Wailua expansion (i.e., hooking up the utilities) because it (1) had already expended 99 percent of its investment in renovating the site and constructing the trailer park and (2) planned to use the facility to support other field research projects, including potential future sterile fly release projects. The laboratory now uses part of the Wailua facility to hatch a new strain of sterile medflies that is being developed to resolve the mating resistance problem identified during the medfly pilot test.

[5]Initially, ARS expected to release up to 150 million sterile medflies per week in the test area. The laboratory planned to store 70 million flies at the Barking Sands facility and 80 million at the Wailua facility.

The laboratory plans to transfer four of the eight trailers at Wailua to its Hilo headquarters in fiscal year 1996 to support the expansion of research on quarantining harvested commodities and to accommodate the transfer of two scientists, currently stationed in Honolulu. The laboratory will keep three trailers at Wailua to support ongoing field research, such as the project to develop a new genetic strain of medfly to overcome the mating resistance problem found in the pilot test. The laboratory will discard the last trailer, which sustained substantial damage from Hurricane Iniki in late 1992.

In addition to renovating and expanding the Wailua facility, ARS supplemented its Kauai field fleet with four vehicles that it acquired in 1993 to support the expanded scale of field work under the medfly project. ARS submitted the request for the four vehicles to the General Services Administration (GSA), which supplies federal agencies with vehicles, in August 1992, but the vehicles were not delivered until June 1993. Of the 22 vehicles currently located at Wailua, the laboratory plans to leave 11 vehicles on Kauai to support continuing field work, transfer 3 vehicles to Honolulu to replace vehicles leased through GSA, transfer 1 vehicle to the laboratory's headquarters in Hilo, and dispose of 5 vehicles. ARS has not finalized its plans for the remaining two vehicles.

Wailua Experiment Station Expenditures

As table 4 shows, ARS spent $858,000 to expand and improve the Wailua experiment station from 1991 through 1992.

Table 4: Expenditures for Expanding and Improving ARS' Facilities at the Wailua Experiment Station, Kauai, 1991-92

Expenditures in thousands of dollars

Award date	Contractor	Services	Expenditures	Cost allocation
June 1991	Earl Kai Chann & Associates, Ltd.	Design and engineering services for building renovation and trailer park site development	$111	$111,000 to medfly project
September 1991	Matt Deal Contractors	Building renovation Trailer park site development	315 260	$526,000 to medfly project, $12,000 to systems approach project, and $37,000 to other sources
September 1991	Mokulua Consultants	Acquisition and installation of 8 trailers	172	$172,000 to medfly project
Total			**$858**	

Source: Budget and procurement records from ARS' Pacific West Area Office.

Question 6: How much did the laboratory spend on planning and constructing the unused fly-rearing facility located near the Honolulu International Airport, what are ARS' future liabilities for this unused facility, and what management lapses, if any, allowed this situation to occur?

Expenditures and Future Liabilities for the Unused Fly-Rearing Facility

ARS decided not to use the leased fly-rearing facility before any construction actually began. But, according to a GSA realty specialist, ARS is liable for several hundred thousand dollars in preconstruction design expenses and may be liable for another $2 million in rent unless a lower

buyout is negotiated or the facility is subleased to another tenant. The realty specialist said that in August 1995 the property owner offered to release ARS from its preconstruction design and lease obligations for $1.5 million. GSA is reviewing the offer.

ARS has not determined how it will pay the total liability incurred on this facility. However, according to ARS' Deputy Administrator for National Program Staff, the laboratory may have to bear the costs by curtailing research programs.

Reasons for Leasing but Not Using the Fly-Rearing Facility

ARS notified GSA on February 3, 1995, that it could not fulfill its obligation to occupy the leased facility located near the Honolulu airport. According to ARS officials, the cancellation was in response to objections from APHIS, although the California Department of Food and Agriculture, the Hawaii Department of Agriculture, and an industry official had also expressed objections. The objectors voiced concerns that fruit flies could escape from the facility and be carried on outgoing flights to uninfected areas on the U.S. mainland or abroad.

ARS' Pacific West Area Office provided GSA with the criteria for the fly-rearing facility in 1992. Using these criteria, GSA sought offers for a facility in the eastern third of Oahu, from the airport to Kahaluu. In procuring the required facility, GSA chose the significantly less expensive offer of the two submitted. In July 1994, ARS signed a letter of concurrence instructing GSA to lease the facility, and GSA signed the lease in August 1994. (See fig. 3.)

Figure 3: History of Events Pertaining to Hawaii Laboratory's Fly-Rearing Facility on Oahu

April 1992	ARS asks GSA to find site for temporary fly-rearing facility because it does not have funds for permanent facility in Waimanalo
August 1994	GSA signs lease for property near airport on behalf of ARS. ARS requests comments from APHIS on laboratory design.
January 1995	After asking for comments from public and private interests, APHIS notifies ARS that site is "not consistent with good regulatory practice."
February 1995	ARS notifies GSA that it will not use the property.
June 1995	Interagency committee meets to select criteria for locating new site.

ARS did not seek APHIS' views on the criteria until after the lease was signed. ARS was not required to obtain approval from APHIS for its fly-rearing facility, but the director of the Hawaii laboratory acknowledged that he should have solicited the views of other interested parties, such as APHIS, before submitting the criteria and asking GSA to find a property in 1992.

However, APHIS voiced concerns about the location of the facility after the lease was signed when it responded to the laboratory's request to review the fly-rearing and quarantine facility.[6] Although APHIS initially suggested design conditions for an escape-proof facility, in January 1995 it expressed complete opposition to the project because of concerns raised by other agencies. According to APHIS officials, the California Department of Food and Agriculture was adamantly opposed to locating the facility near the airport.

[6]APHIS is the federal agency responsible for protecting U.S. agriculture and therefore must approve the importation and containment of nonnative pests. The Hawaii laboratory proposed using the facility, in part, to rear flies exotic to Hawaii.

Question 7: How much was expended on renovating the laboratory's offices located at the University of Hawaii's Manoa campus prior to the laboratory's move to Hilo, what funds were used to pay for the renovations, and were the expenditures justified in light of laboratory's impending move?

Expenditures and Source of Funds Used for Renovating Laboratory Offices

From 1988 through 1991, ARS expended about $303,000 on design and construction contracts for the renovation and repair of its offices at the University of Hawaii's Manoa campus in Honolulu. The renovation and repair work began in 1988 and 1989 but was not completed until November 1991. ARS spent about $203,700 to renovate and enlarge about 1,500 square feet of space, which included the laboratory director's office and administrative offices, and $99,300 on roofing, drywall, and other repair work.

ARS charged $299,000 of the $303,000 expended on the office renovation and repairs to laboratory overhead, ARS headquarters funds, and three research projects that were subsequently terminated. ARS could not provide us with the funding source for the remaining $4,000. The projects were the (1) Quarantine Treatments for Tropical Fruit Flies, terminated in 1989; (2) Laboratory Rearing and Radiation and Field Eradication of Fruit Flies, terminated in 1991; and (3) Fruit Fly Biology and Control, also terminated in 1991.

Rationale for the Renovations

ARS contracted for the repair and renovation of its Honolulu facility before being notified that the University did not intend to renew the lease. The repair contracts were issued in July 1988 and July 1989, and the renovation design and construction contracts were issued in September 1988 and December 1989, respectively. In November 1990, the University of Hawaii notified ARS that the university would not renew the lease for ARS' laboratory on the Manoa campus because the space was needed for future expansion. Although the lease was to expire in June 1992, ARS negotiated a conditional extension until 1997.

USDA's Office of Inspector General also reviewed the repair and renovation expenses at the laboratory's facility on the University of Hawaii's Manoa campus. The Inspector General concluded in a November 1993 report that

there was no evidence of impropriety in the repair and renovation projects.[7]

Although the laboratory's 1983 long-term facility plan called for relocation to Hilo, ARS proceeded with the renovation project at Honolulu for two reasons, according to an official in ARS' Pacific West Area Office. First, ARS considered the renovation project a temporary measure to create more fly-rearing capacity and to consolidate office space until a more permanent arrangement was approved. Second, when issuing the contracts in 1988 and 1989, ARS did not expect the University of Hawaii to cancel the lease for the Honolulu location.

Question 8: What alternatives did the laboratory consider in its deliberations on relocating its headquarters functions to Hilo, and what were the laboratory's justifications for the move in light of its research activities on Kauai?

Alternatives Considered

The laboratory's move to Hilo was initially proposed in 1982, when ARS' Facility Survey Committee considered five options to deal with the problems posed by insufficient space and separate locations. Specifically, the Honolulu laboratory did not furnish adequate space for all of its functions, and a portion of the Hawaii laboratory (the Commodity Treatment, Handling, and Distribution Research Unit) was located on the island of Hawaii.

The first two options addressed consolidating laboratory functions in one location, while the remaining three options assumed that consolidating laboratory operations at one location was not necessary. Specifically, option 1 considered relocating the Honolulu facility to Hilo; option 2 considered consolidating laboratory operations, including the Hilo operation, in newly constructed facilities in Honolulu; option 3 considered remodeling the laboratory's facilities in Honolulu; option 4 considered obtaining a new site on state or federal lands elsewhere on Oahu for the Honolulu facility; and option 5 considered locating the laboratory's research functions on land adjacent to the planned APHIS fly-rearing facility in Waimanalo, Oahu.

[7]Report of Investigation of Honolulu, Hawaii, Pacific West Area, PS-0299-0025 (Nov. 1, 1993).

Rationale for the Relocation to Hilo

In accordance with the committee's recommendations, a former laboratory director concluded that option 1, relocating to Hilo, was the best alternative and recommended in March 1983 that ARS approve the move. The former director and the committee reasoned that the Hilo site would provide for current and future research needs while consolidating the laboratory's staff at one location to provide for a multidisciplinary approach.

The Hawaii laboratory developed a relocation plan in 1983 and started constructing new facilities in Hilo in 1986. In 1987 and 1989, ARS completed two of four proposed new buildings at the Hilo site as part of the relocation plan. However, the laboratory did not have sufficient funds to complete the relocation. (See fig. 4.)

Figure 4: History of Events Related to the Laboratory's Relocation to Hilo

March 1983	ARS' plan recommends relocating laboratory to Hilo.
December 1987	Building "P" at Hilo completed.
August 1989	Laboratory initiates medfly pilot test project.
October 1989	Building "S" at Hilo completed.
November 1990	University notifies ARS of decision not to extend lease after 1992.
April 1991	Laboratory prepares 10-year transition plan to relocate to Hilo.
April 1993	ARS approves relocation of laboratory director and administrative office to Hilo; office moves.
May 1993	University conditionally extends lease to 1997.

ARS officials renewed their relocation efforts after the University of Hawaii notified them in November 1990 that it would not extend the lease for the laboratory on the Manoa campus site beyond 1992. (See our response to question 7.) Accordingly, the laboratory developed plans for relocating the fly-rearing facility to a temporary location on Oahu and for completing the Hilo facilities. However, ARS scaled back its efforts because it lacked the estimated $1.5 million needed to construct the Hilo facilities. Instead, ARS decided to move four trailers from Kauai to Hilo to house its laboratory and headquarters operations.

Relocating the laboratory from Honolulu to Hilo should have minimal impact on supporting the fruit fly suppression pilot project in Kauai. The fundamental research on eradication technology takes place in Hilo and Honolulu, although large-scale testing has recently taken place on Kauai. Traveling to Kauai from Hilo takes 1 to 2 hours longer than traveling from Honolulu and costs about $7 more per trip.

USDA's Office of Inspector General also reviewed the laboratory's decision to relocate its headquarters operations to Hilo. In its November 1993 report, the Office of the Inspector General concluded that the laboratory's decision was justified.

We performed our review between July and August 1995 in accordance with generally accepted government auditing standards. To compile information on ARS' expenditures on fruit fly research and facilities in Hawaii, we obtained data from the laboratory's headquarters in Hilo, Hawaii; ARS' Pacific West Area Office in Albany, California; and the agency's headquarters in Beltsville, Maryland. We also reviewed congressional appropriations to ARS and Senate and House committee and conference reports on ARS appropriations. However, because of the limited time we had to perform our review, we did not attempt to trace expenditures to actual invoices.

To obtain information about the Hawaii laboratory's programs and recent decisions, we visited the Barking Sands and Wailua field experiment stations on Kauai, the Honolulu laboratory at the University of Hawaii's Manoa campus on Oahu, and the Hawaii laboratory's administrative headquarters in Hilo. We interviewed the laboratory director, the administrative officer, and the laboratory scientists responsible for the projects specified in your request. We also interviewed ARS officials at the agency's Pacific West Area Office and headquarters. Finally, we interviewed APHIS officials in Hawaii, California, and Washington, D.C.; GSA officials; and officials from the California Department of Food and Agriculture.

We provided a draft of this report to USDA for its review and comment. We discussed the facts presented in the report with ARS' Acting Administrator and Associate Deputy Administrator for Financial Management, as well as with ARS officials responsible for directing and budgeting the program.

They agreed with the information presented but provided technical and editorial clarifications. We included their comments where appropriate.

Please call me at (202) 512-5138 if you or your staff have any questions about this report.

John W. Harman
Director, Food and
Agriculture Issues

(150891)

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