

Molokai

G. H. BALAZS
1980s - 1990s

MOLOKAI
DATA & ARTICLES
PART 2 of 2

MOLOKAI

MOLOKAI
NEARSHORE

Date Tagged: Oct 19, 1982

Location Caught: Just west of Palaua house on flats, Kahana Pt.

Method of Capture: Medusoid Nets

| Number | Curved Length (cm) | Curved Length (cm) | Tag Number On Left Front Flipper | Tag Number On Right Front Flipper |
|-----------|---------------------|--------------------|----------------------------------|-----------------------------------|
| 1 | 62 ^{57.5?} | 55 | 6533 | 6534 |
| 2 | 59 | 52 1/2 | 6535 | 6536 |
| 3 * | 66 | 62 | 6537 | 6538 |
| 38 4 57.5 | 40 1/2 | 38 1/2 | 6539 | 6540 |
| 1/2 5 * | 46 | 41 | 6541 | 6542 |
| 6 ** | 72 | 63 | 6543 | 6544 |
| 7 | 58 | 48 1/2 | 6545 | 6546 |
| 8 | 47 1/2 | 41 1/2 | 6547 | 6548 |
| 9 | 83 1/2 | 75 1/2 | 6549 | 6550 |
| 10 | 79 | 72 1/2 | 6451 | 6452 |
| 11 | 75 | 71 | 6453 | 6454 |
| 12 | 73 | 64 | 6455 | 6456 |
| 13 | 69 | 59 | 6457 | 6458 |
| 14 | 76 | 67 | 6459 | 6460 |
| 15 | 68 1/2 | 61 | 6461 | 6462 |
| 16 | 58 | 53 | 6463 | 6464 |
| 17 * | 79 1/2 | 69 1/2 | 6465 | 6466 |
| 18 | 56 1/2 | 51 | 6467 | 6468 |

Remarks: * SEE ATTACHED SHEETS 1, 2, & 3

** Exceptionally heavy bodied

ENTRY NO. 6

***** TURTLES TAGGED ON MOLOKAI *****

Date Tagged: Oct. 20, 1982

Location Caught: Just west of Palace House on stilts (same ^{place}) yesterday

Method of Capture: C. Medeiros' nets

| Number | Curved Length (cm) | Curved Length (cm) | Tag Number On Left Front Flipper | Tag Number On Right Front Flipper |
|--------|--------------------|--------------------|----------------------------------|-----------------------------------|
| 1 | 71 | 73 1/2 | 6469 | 6470 |
| 2* | 70 | : 64 1/2 | none | 6471 |
| 3 | 75 | 66 | none | 6472 |
| 4 | 63 1/2 | 57 1/2 | none | 6473 |
| 5 | 73 1/2 | 64 1/2 | none | 6474 |
| 6* | 77 | 65 | none | 6475 |
| 7*** | 61 | 52 | 6551 | 6552 |
| 8*** | 53 | 48 | 6446 | 6390 |
| | | | ↑ missing | 1 of 2 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

*** Released at Kaunakakai Dock same day.

Remarks: * SEE ATTACHED SHEETS # 1 & #2

* * RECOVERY FROM 9/3/82!!!!

Ten tagged green turtles resighted at
Site F, Palaa, Molokai, July 9-11, 1990

by
George H. Balazs, Bill Puleloa, and Ed Medeiros
National Marine Fisheries Service, Honolulu Laboratory
2750 Dole Street
Honolulu, HI 96822-2396

| Tag no. | Date orig. tagged | Interval (year) | Straight length (cm) | | Curved length (cm) | |
|------------------------|------------------------------------|--------------------|----------------------|------------------------|--------------------|------------------------|
| | | | original | 7/90 and (increase) | original | 7/90 and (increase) |
| Y817-18 | 5/90 (site A) | 0.2 | 43.5 | 43.8 (0.3) | 46.5 | 47.0 (0.5) |
| *6533-34 (Z132) | 10/19/82 (site A) | 7.8 | -- | 72.5 (--) | 62.5 | 78.0 (15.5) |
| 7792-93 (Z124) | 7/17/85 (site F) | 5.0 | 52.9 | 57.4 (4.5) | 55.5 | 61.5 (6.0) |
| 8521-22 (Z140) | 7/16/85 (site F) | 5.0 | 39.7 | 48.5 (8.8) | 42.5 | 51.5 (9.0) |
| 9444-45 (Z107) | 7/19/85 (site F) | 5.0 | 47.4 | 54.8 (7.4) | 51.0 | 59.0 (8.0) |
| 9440-41 (Z104) | 7/19/85 (site F) | 5.0 | 55.9 | 63.7 (7.8) | 59.5 | 68.0 (8.5) |
| 6473 (N-346) (Z173) | 10/20/82 (site A) | 7.8 | -- | 72.1 (--) | 63.5 | 77.5 (14.0) |
| *7937-38 (Z175) | 4/11/85 (outside Pakanaka Pond) | 5.25 | 57.5 | 68.0 (10.5) | 61.5 | 72.5 11.0 |
| *8842 (Z179) | 7/11/85 (Kaunakai Dock) | 5.0 | 56.5 | 66.6 (10.1) | 60.0 | 71.0 (11.0) |
| 9450-51 | 7/19/90 (site F) | 5.0 | 45.1 | 52.5 (7.4) | 48.0 | 55.5 (7.5) |

*fibropapillomas present

Disc 12/16/90 T. GHB

Seven tagged green turtles resighted at
 Site B, Palaa, Molokai, July 2-3, 1990

George Balazs, Ed Medeiros, and Bill Puleloa

Southwest Fisheries Center Honolulu Laboratory
 National Marine Fisheries Service, NOAA
 2570 Dole Street
 Honolulu, Hawaii 96822-2396

| Tag no. | Date orig. tagged | Interval (year) | Straight length (cm) | | Curved length (cm) | |
|--------------------------|--------------------------|--------------------|----------------------|------------------------|--------------------|------------------------|
| | | | Original | 7/90 and (increase) | Original | 7/90 and (increase) |
| *7227, 28 (Z93) | 5/9/84 Kaumana Pt. | 6.2 | 44.5 | 63.0 (18.5) | 47.5 | 68.0 (20.5) |
| Y428, 29 (Z162) | 7/5/89 Site A | 1.0 | 55.4 | 56.9 (1.5) | -- | 61.0 (--) |
| 10931, 32 (Z164) | 7/14/88 Site E | 2.0 | 54.4 | 56.6 (2.2) | 58.5 | 61.0 (2.5) |
| 8519, 20 (Z166) | 7/16/85 (7/88) Site D | 5.0 | 49.0 | 62.4 (13.4) | 53.0 | 67.5 (14.5) |
| Y452, 53 (Z167) | 7/5/89 Site A | 1.0 | 67.9 | 70.1 (2.2) | 73.0 | 76.0 (3.0) |
| *10940, 41, 42 (Z168) | 7/14/88 Site E | 2.0 | 69.4 | 71.9 (2.5) | 75.0 | 77.0 (2.0) |
| *7239, 9564 (Z153) | 5/16/84 (3/86) Site G | 6.2 | 40.0 | 56.7 (16.7) | 42.0 | 61.0 (19.0) |

*Small tumors present when examined 7/90.

Tagged and untagged green turtles with fibropapillomas
 captured at Palaaau, Molokai, June 1987-July 1990

George H. Balazs

| Study Dates | Turtles encountered for the first time | | Turtles encountered already tagged | | Total | |
|--------------|----------------------------------------|-----------------------|------------------------------------|-----------------------|------------|-----------------------|
| | N | No. and % with tumors | N | No. and % with tumors | N captured | No. and % with tumors |
| 6/87 | 23 | 0 (0.0%) | 4 | 1 (25.0%)* | 27 | 1 (3.7%) |
| 7/88 | 109 | 5 (4.6%) | 16 | 1 (6.2%)* | 125 | 6 (4.8%) |
| 7/89 | 130 | 11 (8.5%) | 12 | 3 (25.0%) | 142 | 14 (9.9%) |
| 3/90 | 12 | 5 (41.7%) | 1 | 0 (0.0%) | 13 | 5 (38.5%) |
| 5/90 | 44 | 5 (11.4%) | 7 | 1 (14.3%) | 51 | 7 (13.7%) |
| 7/90 | 100 | 23 (23.0%) | 17 | 6 (35.3%)* | 117 | 29 (24.8%) |
| 3-year total | 418 | 49 (11.7%) | 57 | 12 (21.1%) | 475 | 62 (13.1%) |

*Includes the following turtles (tag numbers) with fibropapillomas at one or more of the tag sites, in addition to those growing at other locations:

6/87 (6698, 6699)
 7/88 (7835, 7836)
 7/90 (6533, 6534) (7937, 7938) (8842)

FIRST EVER SEEN - Bill Puleo w/ Ed Medeiros
 SITE A 10/16/85 S-78 x 61 9523 LFL applied
 C-84.5 x 80 photos taken

Counting sheets from 10/16/85 are in folder
 10/16/85 - 10/16/85 (10/16/85)

| Label | Inventory | Inventory Account # | Inventory Account # | Inventory Account # | Inventory Account # |
|--------------|-----------|------------------------|------------------------|------------------------|------------------------|
| Inventory 1 | 10/16/85 | 10/16/85 | 10/16/85 | 10/16/85 | 10/16/85 |
| Inventory 2 | 10/16/85 | 10/16/85 | 10/16/85 | 10/16/85 | 10/16/85 |
| Inventory 3 | 10/16/85 | 10/16/85 | 10/16/85 | 10/16/85 | 10/16/85 |
| Inventory 4 | 10/16/85 | 10/16/85 | 10/16/85 | 10/16/85 | 10/16/85 |
| Inventory 5 | 10/16/85 | 10/16/85 | 10/16/85 | 10/16/85 | 10/16/85 |
| Inventory 6 | 10/16/85 | 10/16/85 | 10/16/85 | 10/16/85 | 10/16/85 |
| Inventory 7 | 10/16/85 | 10/16/85 | 10/16/85 | 10/16/85 | 10/16/85 |
| Inventory 8 | 10/16/85 | 10/16/85 | 10/16/85 | 10/16/85 | 10/16/85 |
| Inventory 9 | 10/16/85 | 10/16/85 | 10/16/85 | 10/16/85 | 10/16/85 |
| Inventory 10 | 10/16/85 | 10/16/85 | 10/16/85 | 10/16/85 | 10/16/85 |

(10/16/85) (10/16/85) (10/16/85)

Nine whole blood samples collected from Hawaiian green turtles captured alive from the Palaau, Molokai, foraging pasture on July 19, 1985. Shipped frozen to Dr. Sylvia Galloway on December 17, 1985 by George H. Balazs.

| Tag No. and vial No. | Straight carapace length (cm) |
|-------------------------|----------------------------------|
| 7829 | 46.7 |
| 9421 | 44.1 |
| 9436 | 48.5 |
| 9438 | 53.4 |
| 9440 | 55.9 |
| 9442 | 48.8 |
| 9448 | 46.5 |
| 9452 | 42.9 |
| 9466 | 66.9 |

SENT TO THANE WIBBELS
2-10-86

GEORGE H. BALAZS
NATIONAL MARINE FISHERIES SERVICE
HONOLULU LABORATORY
P. O. BOX 3830
HONOLULU, HAWAII 96812

51 SERUM SAMPLES FROM ⁴³HAWAIIAN GREEN TURTLES, 1985

| Tag/Vial No. | Straight carapace length (cm) |
|-----------------------|-------------------------------|
| <u>Palau, Molokai</u> | |
| 7837 | 71.8 |
| 7921 | 71.0 |
| 7825 | 39.6 |
| 7833 | 63.4 |
| 7835 | 68.6 |
| 8628 | 55.3 |
| 7917 | 57.2 |
| 7801 | 59.4 |
| 7794 | 47.4 |
| 7804 | 52.8 |
| 8549 | 52.1 |
| 7802 | 55.6 |
| 8658 | — |
| 7817 | 70.3 |
| 7819 | 63.7 |
| 7796 | 57.9 |
| 8537 | 54.7 |
| 8531 | 58.7 |
| 8543 (2) | 51.8 |
| 7812 | 64.6 |
| 7827 | 53.0 |
| 7792 | 52.9 |
| 8629 | 57.3 |

Serum samples, Continued, p. 2

| Tag/Vial No. | Straight carapace length (cm) |
|--------------|-------------------------------|
| 8636 | 51.3 |
| 8635 | 57.8 |
| 8641 | 49.2 |
| 8642 | 49.7 |
| 8639 (2) | 47.5 |
| 8632 | 55.0 |
| 8458 | 41.2 |
| 8453 (2) | 60.2 |

Kawela Bay, Oahu

| Tag/Vial No. | Straight carapace length (cm) |
|--------------|-------------------------------|
| 8761 (2) | 7/2 64.0 |
| 8506 (2) | 7/2 67.0 |
| 8778 (2) | 7/2 54.4 |
| 8511 (2) | 7/2 50.2 |
| 8513 | 7/2 52.9 |
| 8806 | 4/15 61.9 |
| 8802 | 4/15 54.0 |
| 8810 | 4/15 67.6 |

Serum samples, Continued, p.3

| Tag/Vial No. | Straight carapace length (cm) |
|---------------------------|-------------------------------|
| <u>Maunaloa Bay, Oahu</u> | |
| 7275 (2) | 62.2 |
| 7273 | 41.7 |
| <u>Kahului Bay, Maui</u> | |
| 8479 | 71.8 |
| 7271 | 55.2 |
| 7272 | 57.2 |
| 7274 | 58.4 |
| 7275 | 61.7 |
| 7276 | 62.2 |
| 7277 | 62.4 |
| 7278 | 62.4 |
| 7279 | 62.4 |
| 7280 | 62.4 |
| 7281 | 62.4 |
| 7282 | 62.4 |
| 7283 | 62.4 |
| 7284 | 62.4 |
| 7285 | 62.4 |
| 7286 | 62.4 |
| 7287 | 62.4 |
| 7288 | 62.4 |
| 7289 | 62.4 |
| 7290 | 62.4 |
| 7291 | 62.4 |
| 7292 | 62.4 |
| 7293 | 62.4 |
| 7294 | 62.4 |
| 7295 | 62.4 |
| 7296 | 62.4 |
| 7297 | 62.4 |
| 7298 | 62.4 |
| 7299 | 62.4 |
| 7300 | 62.4 |
| 7301 | 62.4 |
| 7302 | 62.4 |
| 7303 | 62.4 |
| 7304 | 62.4 |
| 7305 | 62.4 |
| 7306 | 62.4 |
| 7307 | 62.4 |
| 7308 | 62.4 |
| 7309 | 62.4 |
| 7310 | 62.4 |
| 7311 | 62.4 |
| 7312 | 62.4 |
| 7313 | 62.4 |
| 7314 | 62.4 |
| 7315 | 62.4 |
| 7316 | 62.4 |
| 7317 | 62.4 |
| 7318 | 62.4 |
| 7319 | 62.4 |
| 7320 | 62.4 |
| 7321 | 62.4 |
| 7322 | 62.4 |
| 7323 | 62.4 |
| 7324 | 62.4 |
| 7325 | 62.4 |
| 7326 | 62.4 |
| 7327 | 62.4 |
| 7328 | 62.4 |
| 7329 | 62.4 |
| 7330 | 62.4 |
| 7331 | 62.4 |
| 7332 | 62.4 |
| 7333 | 62.4 |
| 7334 | 62.4 |
| 7335 | 62.4 |
| 7336 | 62.4 |
| 7337 | 62.4 |
| 7338 | 62.4 |
| 7339 | 62.4 |
| 7340 | 62.4 |
| 7341 | 62.4 |
| 7342 | 62.4 |
| 7343 | 62.4 |
| 7344 | 62.4 |
| 7345 | 62.4 |
| 7346 | 62.4 |
| 7347 | 62.4 |
| 7348 | 62.4 |
| 7349 | 62.4 |
| 7350 | 62.4 |
| 7351 | 62.4 |
| 7352 | 62.4 |
| 7353 | 62.4 |
| 7354 | 62.4 |
| 7355 | 62.4 |
| 7356 | 62.4 |
| 7357 | 62.4 |
| 7358 | 62.4 |
| 7359 | 62.4 |
| 7360 | 62.4 |
| 7361 | 62.4 |
| 7362 | 62.4 |
| 7363 | 62.4 |
| 7364 | 62.4 |
| 7365 | 62.4 |
| 7366 | 62.4 |
| 7367 | 62.4 |
| 7368 | 62.4 |
| 7369 | 62.4 |
| 7370 | 62.4 |
| 7371 | 62.4 |
| 7372 | 62.4 |
| 7373 | 62.4 |
| 7374 | 62.4 |
| 7375 | 62.4 |
| 7376 | 62.4 |
| 7377 | 62.4 |
| 7378 | 62.4 |
| 7379 | 62.4 |
| 7380 | 62.4 |
| 7381 | 62.4 |
| 7382 | 62.4 |
| 7383 | 62.4 |
| 7384 | 62.4 |
| 7385 | 62.4 |
| 7386 | 62.4 |
| 7387 | 62.4 |
| 7388 | 62.4 |
| 7389 | 62.4 |
| 7390 | 62.4 |
| 7391 | 62.4 |
| 7392 | 62.4 |
| 7393 | 62.4 |
| 7394 | 62.4 |
| 7395 | 62.4 |
| 7396 | 62.4 |
| 7397 | 62.4 |
| 7398 | 62.4 |
| 7399 | 62.4 |
| 7400 | 62.4 |

? * 5683

Longest Fiber Optic Cable Will Handle 30,000 Calls

Agreements to build and maintain the world's longest undersea fiber optic cable system have been signed in Canberra by representatives of 36 international telecommunications carriers who will be involved.

According to Australia's Overseas Telecommunications Commission, the largest shareholder in the venture, the \$620-million network will provide better transmission quality than satellites and will handle up to 30,000 simultaneous telephone conversations, as well as videophone and live television.

The network, which will stretch more than 10,000 miles, is due for completion in 1994 and will link Sydney with Hawaii, Auckland and Sydney to Guam. The new cable will connect with existing fiber optic facilities to Japan, Europe and Mainland United States.

Besides OTC, other carriers include AT&T, KDD of Japan and TNI of New Zealand.

By Australia/Business News

PACT Satellite System Comes Operational

The Pacific Area Cooperative Telecommunications (PACT) network, a regional satellite system designed specifically for Forum island countries, is carrying public traffic Dec. 1.

The system was officially opened by Ian Evans, Australia's minister for foreign affairs, in an inaugural four-way conference call on the new system from Sydney and Canberra to Kiribati and the Marshall Islands. Other participants included Kunio Lemari, Marshall Islands' minister for transport and communication; Meita Beiabure, Kiribati's minister for transport and communication; and Dr. Rhoda McIver, a member of the Overseas Telecommunications Commission board of directors in the Marshall Islands.

The system is a custom-designed Australian solution to the problems of linking widespread Pacific island nations with their own remote communities, their neighbors and the rest of the world. It is designed to provide reliable, inexpensive telephone, facsimile, telex and other services. Member nations in



Huge, spidery roots are characteristic of trees in a mangrove forest

PACT to date are Cook Islands, Kiribati, Marshall Islands, Niue, Nauru, Tuvalu and Australia.

The system will allow Forum countries to develop fully automatic telephone services and provide better quality international service by eliminating the need to switch calls via other countries.

Mangrove Forest's Value Often Underestimated

Before deciding to convert a mangrove forest to another use, planners and developers should take a more careful look at what they are destroying, according to a tropical forest specialist at the East-West Center in Honolulu.

"A common belief is that a mangrove area's value will be higher with almost any kind of alternative use, including roadways, landfill for construction, conversion to agriculture or aquaculture or even waste dumps," said Lawrence Hamilton, research associate in the EWC's Environment and Policy Institute. "But, in many cases, a more comprehensive economic analysis may well demonstrate that a mangrove forest preserved in its natural state can yield greater benefits."

Hamilton said even in cases where conversion to another use is clearly necessary or justified, loss of mangrove forest

benefits can be kept to a minimum if thorough physical, social and economic analysis is made, and appropriate measures taken based on these analyses.

Mangroves are the predominant vegetation of tropical and subtropical coastlines, growing as high as 120 feet in swampy, saltwater conditions.

"Mangroves have long been 'orphan forests,' undervalued by anyone but indigenous coastal dwellers who use them as a source of food and materials," Hamilton said.

More than 50 commercial products available from mangrove forests are listed by Hamilton and coauthors John Dixon and Glenys Owen Miller in an article in the recently published *Ocean Yearbook 8*. They include fuel (firewood, charcoal and alcohol), timber for construction and furniture, fodder and green manure for agriculture, fiber for paper production, fibers and dyes for textiles and leather and ingredients in a variety of goods, drugs and beverages.

Worldwide, mangrove forests are being eliminated at an alarming rate, Hamilton said. "Probably most people today consider them foul, ill-smelling, insect-ridden, difficult and even dangerous," he said. "Because of the low esteem or outright hostility for mangroves, forests are being degraded or destroyed globally on

(Continued on page 14)

(Continued from page 13)

a scale that must surely match or exceed that of the tropical rainforests, which have finally captured positive media and public attention.

"Decisions of whether to convert mangroves to other uses are frequently based only on the value of existing marketable forestry products. These values may be quite low, but fishery and marine products, both within the mangrove and nearby waters, are frequently much more valuable," Hamilton said.

Mangroves provide excellent protection against shoreline erosion and are the first line of defense against hurricanes, tidal waves and periods of high seas. Another argument for mangrove preservation, not readily apparent from economic analysis, is protection of genetic and species diversity. Some 60 species of trees, shrubs, palms and ferns are found only in mangrove forests.

"Mangroves are spawning waters for numerous fish and other aquatic species," Hamilton continued. "In addition, they are the preferred habitat for nesting of many birds and are the only protected areas left for many other species of wildlife."

Hamilton said there is an urgent need for programs "to raise the level of awareness of citizens and politicians at all levels of government about the important role mangroves fill as part of the coastal complex."

John Williams

It Would Cost Millions To Reopen Bougainville Mine

The Australian mining company, Conzinc Riotinto, reports that it would cost more the \$130-million to reopen the Bougainville copper mine.

The new estimate of the start-up capital costs was given by Ian Johnson, managing director of CRA Minerals Papua New Guinea, when commenting on reported statements made by the Bougainville secessionist leader, Francis Ona.

Quoted in a press interview, Ona said CRA has no future place on the island because the organization had supplied weapons to PNG during the recent civil war there. Johnson has denied the charges.

Ona also said the mine could be reopened without CRA. However,

Johnson said, that while the secessionists have shown they can close the mine and keep it shut, reopening and operating it is another matter.

The mine hasn't operated since May 1989 because of hostilities on the island. *Radio Australia.*

Solomon Is. Newspaper Finds New Quarters

John Lemani, owner and publisher of the *Solomon Star*, is planning to move into new quarters soon. Lemani purchased a building in New Chinatown, just inside the center of Honiara, to house his eight-year-old newspaper.



John Lemani

"The demand is there."

"I started with no money and that was after thinking about publishing a newspaper for four years," Lemani said while talking about the early challenges he faced. "It was Gene Johnson, a wealthy newspaperman from Minnesota who encouraged me." Johnson was a resource person for a Pacific Islands News Association conference in 1979 and Lemani attended the conference as an editor for the Solomon Islands Broadcasting Corp. Lemani explained how his entrepreneurial spirit won out.

"Johnson told me about his early struggles—that he had no money when he started publishing his own newspaper and his words were with me during the years I reflected on his advice," he said. "My first efforts were simple. I scribbled

the news on pads of paper and gave it to others to do the typesetting and layout for me.

"We started with six pages, then went up to 12, then 16 and 22," he continued. "Now, we generally have 32 pages. We have a weekly tabloid, publishing every Friday. We do everything from administration to advertising." The *Star* employs three women, a photographer and a person to do the layout.

"My wife helps with the accounts and she also does typesetting with a Compugraphic typesetter," he said. "We do everything camera-ready. We use the Government Printing Works in Honiara. As soon as we have the money, we hope to buy our own printing machines."

Lemani explained that his newspaper is independent and that there is a government weekly newspaper with government news. He prints 3,500 copies a week. Plans call for a twice-weekly paper and a press that will print up to 7,000 copies and eventually 10,000 copies a week.

Honiara now has a population of about 30,000 and Lemani feels "the demand is there" for the expansion of the *Star*.

Fran Dieudonne

Swedish Firm Plans Brewery on Pohnpei

According to the *Pohnpei State Statistics*, the island imports about US\$3.7-million in beverages and tobacco annually, a great part of which is beer. To reduce imports and provide 20 new jobs, Pripps Breweries of Sweden plans to brew beer locally.

In the U.S., Olympia beer advertises "It's the Water!" that contributes to its flavor, and Pohnpei has plenty of it (about 400 inches annually in the mountains) and the market for beer on the island is unquestioned.

To protect the local product from other beers, a 25-cent tax per can would be levied on imported brew.

The project would be a joint-venture between Pohnpei State and Pripps, each beginning with an outlay of US\$500,000. The brewery would be built in the new Sokehs Industrial Park near Kolonia.

And the name for the new beer? Probably Kaselehliia, since most new ventures seem to start with that name.

Gene Ashby

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George Balazs, Ed Medeiros, and Bill Puleloa

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| Tag no. | Date orig. tagged | Interval (year) | Straight length (cm) | | Curved length (cm) | |
|-----------------------|--------------------------|-----------------|----------------------|-------------------------------------|--------------------|-------------------------------------|
| | | | Original | $\frac{CM}{yr}$ 7/90 and (increase) | Original | $\frac{CM}{yr}$ 7/90 and (increase) |
| *7227, 28 (Z93) | 5/9/84 Kaumana Pt. | 6.2 | 44.5 | 3.0 | 47.5 | 3.3 |
| Y428, 29 (Z162) | 7/5/89 Site A | 1.0 | 55.4 | 1.5 | -- | 61.0 (--) |
| 10931, 32 (Z164) | 7/14/88 Site E | 2.0 | 54.4 | 1.1 | 58.5 | 1.25 |
| 8519, 20 (Z166) | 7/16/85 (7/88) Site D | 5.0 | 49.0 | 2.7 | 53.0 | 2.9 |
| Y452, 53 (Z167) | 7/5/89 Site A | 1.0 | 67.9 | 2.2 | 73.0 | 3.0 |
| *10940, 41, 42 (Z168) | 7/14/88 Site E | 2.0 | 69.4 | 1.2 | 75.0 | 1.0 |
| *7239, 9564 (Z153) | 5/16/84 (3/86) Site G | 6.2 | 40.0 | 2.7 | 42.0 | 3.1 |

*Small tumors present when examined 7/90.

grnt.ghb
 → photo on determine this one had tumors (graybook)

Score

1

1

Copy

Ten tagged green turtles resighted at
 Site F, Palau, Molokai, July 9-11, 1990

by
 George H. Balazs, Bill Pulelos, and Ed Medeiros
 National Marine Fisheries Service, Honolulu Laboratory
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| Tag no. | Date orig. tagged | Interval (year) | Straight length (cm) | | Curved length (cm) | |
|---------------------|---------------------------------|-----------------|----------------------|---------------------|--------------------|---------------------|
| | | | original | 7/90 and (increase) | original | 7/90 and (increase) |
| Y817-18 | 5/90 (site A) | 0.2 | 43.5 | 43.8 (0.3) | 46.5 | 47.0 (0.5) |
| *6533-34 (Z132) | 10/19/82 (site A) | 7.8 | - | 72.5 (-) | 62.5 | 78.0 (15.5) |
| 7792-93 (Z124) | 7/17/85 (site F) | 5.0 | 52.9 | 57.4 (4.5) | 55.5 | 61.5 (6.0) |
| 8521-22 (Z140) | 7/16/85 (site F) | 5.0 | 39.7 | 48.5 (8.8) | 42.5 | 51.5 (9.0) |
| 9444-45 (Z107) | 7/19/85 (site F) | 5.0 | 47.4 | 54.8 (7.4) | 51.0 | 59.0 (8.0) |
| 9440-41 (Z104) | 7/19/85 (site F) | 5.0 | 55.9 | 63.7 (7.8) | 59.5 | 68.0 (8.5) |
| 6473 (N-346) (Z173) | 10/20/82 (site A) | 7.8 | - | 72.1 (-) | 63.5 | 77.5 (14.0) |
| *7937-38 (Z175) | 4/11/85 (outside Pakanaka Pond) | 5.25 | 57.5 | 68.0 (10.5) | 61.5 | 72.5 (11.0) |
| *8842 (Z179) | 7/11/85 (Kaunakai Dock) | 5.0 | 56.5 | 66.6 (10.1) | 60.0 | 71.0 (11.0) |
| 9450-51 | 7/19/90 (site F) | 5.0 | 45.1 | 52.5 (7.4) | 48.0 | 55.5 (7.5) |

SCORE

2

13

w/o Tumors N=9 1.9 cm/yr 48.5 - 73.0 cm

w/ Tumors N=6 2.3 cm/yr 46.5 - 75.0 cm

*fibropapillomas present

N=15 \bar{x} = 4.9 yrs

Range = 1 to 7.8 yrs

Tumors orig. when tagged?

2.0

1.2

1.8

1.6

1.7

1.8

2.1

2.2

1.5

1.9 cm/yr

2.3 cm/yr

FRIENDLY ISLE FISH CO.
P.O. BOX 1216
KAUNAKAKAI, MOLOKAI, HI 96748
Phone & Fax: (808) 553-5702

August 6, 1991

George Balazs
NMFS
2570 Dole Street
Honolulu, HI 96822

Dear George,

Boy, am I embarrassed about sending that payment request in too soon!! Another good example of poor communication in the Medeiros household! I didn't realize there were still some days left to fill.....oh well, sorry about that!

I don't know what Eddie's fishing schedule will be looking like, so you'll need to contact him personally - as usual, he's got about 14 different irons in the fire & it's all I can do to keep up!!

I'm glad I got to go with you guys at least one day this time. Things sure have changed, haven't they? I was just looking through some of our old turtle reports (which I STILL never finished!) and was feeling a bit melancholic!

Well, sorry again for the mix-up - I'll try to be a little more organized next time! And thanks also for adding another dimension to our family reunion! The kids sure get a once-in-a-life-time experience out there & a great education as well.

See you next time! God Bless you & your family!-----
------(oops, the cat just discovered the computer keyboard!)

*Love,
Diane*

FRIENDLY ISLE FISH CO.
P.O. BOX 1216
KAUNAKAKAI, MOLOKAI, HI. 96748
PHONE & FAX # (808) 553-5702

July 30, 1991

NOAA, NMFS, Honolulu Laboratory
2570 Dole Street
Honolulu, HI 96822-2396
ATTN: MTRT

RE: Service Order #40-JJNF-1-0150
Order Date: 5/10/91

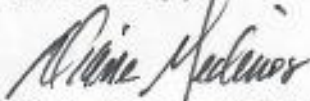
Dear Sirs:

Request is hereby made for payment on the above mentioned service order #40-JJNF-1-0150 for time and space provided on board our fishing vessel to tag and study sea turtles on the island of Molokai.

Payment to be in the amount of \$4,620.00.

Thank you!

Sincerely,



Ed & Diane Medeiros
Friendly Isle Fish Co.
Molokai

TAG RECOVERIES
PALAAU, MOLOKAI
SITE E

05/26-05/29/92

| | <u>SCL</u> | <u>TAG NO</u> | <u>TMR SCORE</u> | <u>DATE</u> |
|-----|------------|---------------|------------------|-------------|
| 1) | 56.6 | 9464 | 0 | 05/26/92 |
| 2) | 64.9 | Y378 | 1 | 05/26/92 |
| 3) | 59.0 | Y928 | 1 | 05/26/92 |
| 4) | 68.5 | 9227 | 2 | 05/26/92 |
| 5) | 69.6 | 6547 | 2 | 05/26/92 |
| 6) | 75.8 | 7932 | 1 | 05/26/92 |
| 7) | 79.3 | 6461 | 3 | 05/26/92 |
| 8) | 71.5 | Y385 | 2 | 05/26/92 |
| 9) | 68.9 | 10766 | 1 | 05/27/92 |
| 10) | 57.7 | Y944 | 2 | 05/27/92 |
| 11) | 56.4 | 10947 | 0 | 05/27/92 |
| 12) | 64.0 | 7894 | 1 | 05/27/92 |
| 13) | 69.4 | 7227 | 2 | 05/27/92 |
| 14) | 49.5 | Y923 | 2 | 05/27/92 |
| 15) | 64.6 | Y474 | 0 | 05/27/92 |
| 16) | 62.9 | 10883 | 2 | 05/28/92 |
| 17) | 68.3 | N349 | 2 | 05/28/92 |
| 18) | 72.8 | Y517 | 1 | 05/28/92 |
| 19) | 71.2 | 9403 | 1 | 05/28/92 |
| 20) | 68.7 | 10879 | 2 | 05/28/92 |
| 21) | 51.5 | 10899 | 1 | 05/28/92 |
| 22) | 59.4 | 10964 | 2 | 05/28/92 |
| 23) | 55.8 | 7825 | 0 | 05/28/92 |
| 24) | 53.9 | 10835 | 1 | 05/28/92 |

TAG RECOVERIES (CONT.)

| | <u>SCL</u> | <u>TAG NO.</u> | <u>TMR SCORE</u> | <u>DATE</u> |
|-----|------------|----------------|------------------|-------------|
| 25) | 73.1 | V314 | 1 | 05/29/92 |
| 26) | 61.6 | 10957 | 0 | 05/29/92 |
| 27) | 60.2 | Y428 | 1 | 05/29/92 |
| 28) | 78.6 | 9591 | 0 | 05/29/92 |
| 29) | 69.3 | 10980 | 0 | 05/29/92 |
| 30) | 63.6 | 10865 | 2 | 05/29/92 |
| 31) | 65.5 | 10875 | 1 | 05/29/92 |
| 32) | 72.8 | 10845 | 0 | 05/29/92 |
| 33) | 65.4 | 8640 | 0 | 05/29/92 |
| 34) | 65.3 | 10909 | 0 | 05/29/92 |
| 35) | 70.6 | Y545 | 2 | 05/29/92 |
| 36) | 66.4 | Y446 | 0 | 05/29/92 |
| 37) | 63.0 | 10881 | 3 | 05/29/92 |

SCL \bar{x} = 65.28 cm

SCL RANGE = 51.5 → 79.3 cm

26 OF 37 TAG RECOVERIES HAVE TUMORS - 70.3%

| SCORE | TURTLES | PERCENTAGE |
|-------|---------|------------|
| 1 | 12 | (46.29%) |
| 2 | 12 | (46.29%) |
| 3 | 2 | (7.7%) |
| 4 | 0 | " |

NEWLY TAGGED
PALAALI, MOLOKAI
SITE E
05/26-05/29/92

| <u>SCL</u> | <u>TAG NO.</u> | <u>TMR SCORE</u> | <u>DATE</u> |
|------------|----------------|------------------|-------------|
| 1) 75.7 | H531 | 1 | 05/26/92 |
| 2) 63.4 | H534 | 0 | 05/26/92 |
| 3) 64.9 | H536 | 0 | 05/26/92 |
| 4) 46.1 | H541 | 0 | 05/26/92 |
| 5) 57.6 | H548 | 3 | 05/26/92 |
| 6) 61.1 | H552 | 0 | 05/26/92 |
| 7) 61.0 | H554 | 0 | 05/26/92 |
| 8) 56.2 | H559 | 0 | 05/26/92 |
| 9) 85.9 | H561 | 1 | 05/26/92 |
| 10) 62.3 | H565 | 0 | 05/26/92 |
| 11) 70.4 | H567 | 1 | 05/27/92 |
| 12) 71.3 | H569 | 0 | 05/27/92 |
| 13) 60.5 | H571 | 1 | 05/27/92 |
| 14) 62.9 | H573 | 2 | 05/27/92 |
| 15) 73.5 | H575 | 0 | 05/27/92 |
| 16) 62.5 | H578 | 2 | 05/27/92 |
| 17) 67.1 | H581 | 2 | 05/27/92 |
| 18) 66.9 | H583 | 0 | 05/27/92 |
| 19) 42.8 | H585 | 0 | 05/27/92 |
| 20) 53.4 | H587 | 1 | 05/27/92 |
| 21) 73.6 | H589 | 0 | 05/27/92 |
| 22) 59.7 | H592 | 0 | 05/27/92 |
| 23) 58.9 | H594 | 0 | 05/27/92 |
| 24) 65.9 | H596 | 0 | 05/27/92 |
| 25) 58.5 | H598 | 1 | 05/27/92 |

NEWLY TAGGED (CONT.)

| | <u>SCL</u> | <u>TAG NO</u> | <u>TMR SCORE</u> | <u>DATE</u> |
|-----|------------|---------------|------------------|-------------|
| 26) | 50.7 | H602 | 0 | 05/27/92 |
| 27) | 61.5 | H606 | 0 | 05/27/92 |
| 28) | 51.1 | H608 | 0 | 05/27/92 |
| 29) | 50.4 | H610 | 0 | 05/27/92 |
| 30) | 53.3 | H612 | 2 | 05/27/92 |
| 31) | 59.6 | H616 | 1 | 05/27/92 |
| 32) | 37.6 | H619 | 0 | 05/27/92 |
| 33) | 69.0 | H621 | 0 | 05/28/92 |
| 34) | 69.9 | H624 | 0 | 05/28/92 |
| 35) | 73.3 | H626 | 0 | 05/28/92 |
| 36) | 65.2 | H628 | 0 | 05/28/92 |
| 37) | 68.4 | H630 | 0 | 05/28/92 |
| 38) | 75.7 | H632 | 0 | 05/28/92 |
| 39) | 60.4 | H635 | 2 | 05/28/92 |
| 40) | 70.9 | H637 | 0 | 05/28/92 |
| 41) | 64.7 | H640 | 2 | 05/28/92 |
| 42) | 60.5 | H643 | 1 | 05/28/92 |
| 43) | 64.5 | H646 | 2 | 05/28/92 |
| 44) | 70.7 | H648 | 1 | 05/28/92 |
| 45) | 59.7 | H651 | 1 | 05/28/92 |
| 46) | 44.8 | H653 | 0 | 05/28/92 |
| 47) | 59.6 | H658 | 1 | 05/28/92 |
| 48) | 39.1 | H660 | 0 | 05/28/92 |
| 49) | 36.2 | H663 | 0 | 05/28/92 |
| 50) | 58.7 | H666 | 0 | 05/28/92 |

NEWLY TAGGED (CONT.)

| | <u>SCL</u> | <u>TAG NO</u> | <u>TMR SCORE</u> | <u>DATE</u> |
|-----|------------|---------------|------------------|-------------|
| 51) | 53.8 | H669 | 1 | 05/28/92 |
| 52) | 55.2 | H672 | 0 | 05/28/92 |
| 53) | 49.8 | H675 | 2 | 05/28/92 |
| 54) | 56.7 | H678 | 0 | 05/28/92 |
| 55) | 51.1 | H681 | 2 | 05/28/92 |
| 56) | 57.9 | H685 | 2 | 05/28/92 |
| 57) | 55.5 | H689 | 0 | 05/28/92 |
| 58) | 51.9 | H692 | 0 | 05/28/92 |
| 59) | 66.2 | H695 | 3 | 05/28/92 |
| 60) | 45.0 | H698 | 0 | 05/28/92 |
| 61) | 55.9 | H701 | 3 | 05/28/92 |
| 62) | 57.9 | H704 | 1 | 05/28/92 |
| 63) | 58.1 | H707 | 1 | 05/28/92 |
| 64) | 44.8 | H710 | 0 | 05/29/92 |
| 65) | 54.9 | H713 | 0 | 05/29/92 |
| 66) | 65.6 | H716 | 0 | 05/29/92 |
| 67) | 44.5 | H721 | 0 | 05/29/92 |
| 68) | 75.9 | H724 | 1 | 05/29/92 |
| 69) | 61.5 | H728 | 1 | 05/29/92 |
| 70) | 57.5 | H734 | 1 | 05/29/92 |
| 71) | 65.3 | H737 | 0 | 05/29/92 |
| 72) | 77.5 | H741 | 2 | 05/29/92 |
| 73) | 66.1 | H747 | 0 | 05/29/92 |
| 74) | 63.3 | H751 | 0 | 05/29/92 |
| 75) | 73.3 | H756 | 1 | 05/29/92 |

NEWLY TAGGED (CONT.)

| | <u>SCL</u> | <u>TAG NO.</u> | <u>TMR SCORE</u> | <u>DATE</u> |
|-----|------------|----------------|------------------|-------------|
| 76) | 64.6 | H759 | 2 | 05/29/92 |
| 77) | 63.5 | H762 | 1 | 05/29/92 |
| 78) | 67.3 | H765 | 0 | 05/29/92 |
| 79) | 69.3 | H768 | 2 | 05/29/92 |
| 80) | 60.7 | H771 | 1 | 05/29/92 |
| 81) | 52.5 | H775 | 3 | 05/29/92 |
| 82) | 65.9 | H778 | 0 | 05/29/92 |
| 83) | 61.6 | H781 | 2 | 05/29/92 |
| 84) | 70.2 | H785 | 0 | 05/29/92 |

SCL \bar{X} = 60.69 cm

SCL RANGE = 36.2 → 85.9 cm

38 OF 84 NEWLY TAGGED HAVE TUMORS - 45.2%

| | | | |
|---------|----|---------|---------|
| SCORE 1 | 20 | (52.6%) | turtles |
| 2 | 14 | (36.8%) | " |
| 3 | 4 | (10.5%) | " |
| 4 | 0 | | " |

07-09-91

GEORGE H. BALAZS

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 Southwest Fisheries Science Center
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 2570 Dole Street
 Honolulu, Hawaii 96822-2398

PALAAU, MOLOKAI

SITE A

DAY 1

PAGE 2
 OF 17 PAGES

TAG NO.SCL (cm)TMR SCORE

| | | | | |
|----|----------|--------------------------|------|---|
| 1) | T50201 | LFL (LEFT FLAP) | 87.2 | 0 |
| | V64 | RFL (RIGHT FLAP) | | |
| | V65 | RHF (RIGHT HIND FLIPPER) | | |
| 2) | * T50203 | LFL | 67.1 | 1 |
| | V66 | RFL | | |
| | V67 | RHF | | |
| 3) | * T50205 | LFL | 68.7 | 0 |
| | V69 | RFL | | |
| | V70 | RHF | | |
| 4) | * T50207 | LFL | 74.9 | 1 |
| | V71 | RFL | | |
| | V72 | RHF | | |
| 5) | T50208 | LFL | 61.6 | 0 |
| | V73 | RFL | | |
| | V74 | RHF | | |
| 6) | T50209 | LFL | 58.5 | 0 |
| | V304 | RFL | | |
| | V305 | RHF | | |

* TAG NOS T50202, T50204, T50206 DISCARDED

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07-10-91
PALAAU, MOLOKAI
SITE A
DAY 2

P. 2

| | <u>TAG NO.</u> | | <u>SCL (cm)</u> | <u>TMR SCORE</u> |
|-----|----------------|---------------------------|-----------------|------------------|
| 7) | * T50211 | LFL (LEFT FLAP) | 67.5 | 0 |
| | V312 | RFL (RIGHT FLAP) | | |
| | V313 | RHF (RIGHT HIND FLIPPER) | | |
| 8) | T50212 | L34 (BETW. 3RD/4TH SCALE) | 78.0 | 2 |
| | V314 | RFL | | |
| | V315 | RHF | | |
| 9) | T50213 | LFL | 67.5 | 1 |
| | V316 | RFL | | |
| | V317 | RHF | | |
| 10) | T50214 | LFL | 60.5 | 0 |
| | V318 | RFL | | |
| | V319 | RHF | | |
| 11) | T50215 | LFL | 51.4 | 0 |
| | V320 | RFL | | |
| | V321 | RHF | | |
| 12) | T50216 | LFL | 73.6 | 0 |
| | V322 | RFL | | |
| | V323 | RHF | | |

* TAG NO. T50210 NOT ON STRIP

TAG NO T50211 MADE IN DUPLICATE - ONE TAG LOST

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07-10-91
DAY 2 - CONT.

P. 3

| <u>TAG NO.</u> | | <u>SCL (cm)</u> | <u>TMR SCORE</u> |
|----------------|----------------------------------------------------|-----------------|------------------|
| 13) T50217 | LFL (LEFT FLAP) | 63.1 | 2 |
| V324 | R34 (BETW. 3 RD /4 TH SCALE) | | |
| V325 | RHF (RIGHT HIND FLAPPER) | | |
| 14) T50218 | LFL | 63.1 | 0 |
| V326 | RFL (RIGHT FLAP) | | |
| V327 | RHF | | |
| 15) T50219 | LFL | 62.4 | 0 |
| V331 | RFL | | |
| V332 | LHF | | |
| 16) T50220 | LFL | 58.5 | 0 |
| V333 | RFL | | |
| V334 | RHF | | |
| 17) T50221 | LFL | 55.7 | 1 |
| V335 | RFL | | |
| V336 | RHF | | |
| 18) T50222 | LFL | 76.7 | 0 |
| V347 | RFL | | |
| V348 | RHF | | |

GEORGE H. BALAZS

HONOLULU LABORATORY
Southwest Fisheries Center
2570 Dole Street
Honolulu, HI 96822-2396

07-11-91
PALAAU, MOLOKAI
SITE A
DAY 3

P. 4

| <u>TAG NO.</u> | | <u>SCL (cm)</u> | <u>TMR SCORE</u> |
|----------------|--------------------------|-----------------|------------------|
| 19) T50223 | LFL (LEFT FLAP) | 63.7 | 0 |
| V349 | RFL (RIGHT FLAP) | | |
| V350 | RHF (RIGHT HIND FLAPPER) | | |
| 20) T50224 | LFL | 54.2 | 0 |
| V351 | RFL | | |
| V352 | RHF | | |

National Marine Fisheries Service
 Southwest Fisheries Science Center
 Honolulu Laboratory, F/SWC2
 2570 Dole Street
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12-04-91
 PALAAU, MOLOKAI
 SITE F
 DAY 1

P.5

| TAG NO. | | SCL (cm) | TMR SCORE |
|-------------|--------------------------|----------|-----------|
| 21) *T50226 | LFL (LEFT FLAP) | 71.0 | 0 |
| V569 | RFL (RIGHT FLAP) | | |
| V570 | RHF (RIGHT HIND FLAPPER) | | |
| 22) T50227 | LFL | 62.6 | 0 |
| V574 | RFL | | |
| V575 | RHF | | |
| 23) T50228 | LFL | 79.2 | 2 |
| V576 | RFL | | |
| V577 | LHF | | |
| 24) *T50230 | LFL | 64.2 | 1 |
| V578 | RFL | | |
| V579 | RHF | | |
| 25) T50231 | LFL | 55.8 | 0 |
| V581 | RFL | | |
| V582 | RHF | | |
| 26) T50232 | LFL | 55.9 | 2 |
| V587 | RFL | | |
| V588 | RHF | | |

* TAG NO. T50225 NOT ON STRIP

* TAG NO. T50229 MALFUNCTION, NOT USED

GEORGE H. BALAZS

12-04-91

P. 6

National Marine Fisheries Service
Southwest Fisheries Science Center
Honolulu Laboratory, F/SWC2
2570 Dole Street
Honolulu, Hawaii 96822-2398

DAY 1 ~ CONT.

| <u>TAG NO.</u> | | | <u>SCL (cm)</u> | <u>TMR SCORE</u> |
|----------------|-----|----------------------|-----------------|------------------|
| 27) T50233 | LFL | (LEFT FLAP) | 55.1 | 0 |
| V596 | RFL | (RIGHT FLAP) | | |
| 28) T50234 | LFL | | 54.2 | 0 |
| V597 | RFL | | | |
| 29) T50235 | LFL | | 55.6 | 0 |
| V107 | RFL | | | |
| 30) T50236 | LFL | | 56.5 | 0 |
| V109 | RFL | | | |
| V110 | RHF | (RIGHT HIND FLAPPER) | | |

LARRY H. BALAZS

12-05-91

National Marine Fisheries Service
Southwest Fisheries Science Center
Honolulu Laboratory, F/SWC2
2570 Dole Street
Honolulu, Hawaii 96822-2398PALAAU, MOLOKAI
SITE F
DAY 2

P. 7

| TAG NO. | | SCL (cm) | TMR SCORE |
|-------------|---------------------------|----------|-----------|
| 31) T50237 | LFL (LEFT FLAP) | 58.7 | 1 |
| VIII | RFL (RIGHT FLAP) | | |
| VII2 | RHF (RIGHT HIND FLAPPER) | | |
| 32) T50238 | LFL | 62.5 | 1 |
| VII3 | RFL | | |
| VII4 | RHF | | |
| 33) T50239 | LFL | 65.1 | 2 |
| VII5 | R34 (BETW. 3RD/4TH SCALE) | | |
| VII6 | RHF | | |
| 34) T50240 | RFL | 52.4 | 0 |
| VII7 | LFL | | |
| VII8 | RHF | | |
| 35) T50241 | LFL | 57.8 | 0 |
| VII9 | RFL | | |
| V120 | RHF | | |
| 36)* T50243 | LFL | 66.3 | 2 |
| V128 | RHF | | |
| V129 | R34 | | |

* TAG NO T50242 ?

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12-06-91
PALAAU, MOLOKAI
SITE F
DAY 3

P. 8

| | <u>TAG NO.</u> | | <u>SCL(cm)</u> | <u>TMR SCORE</u> |
|-----|----------------|--------------------------|----------------|------------------|
| 37) | T50244 | LFL (LEFT FLAP) | 67.3 | 0 |
| | R10797 | RFL (RIGHT FLAP) | | |
| | V131 | RHF (RIGHT HIND FLAPPER) | | |
| 38) | T50245 | LFL | 62.0 | 0 |
| | V132 | RFL | | |
| | V133 | RHF | | |
| 39) | T50246 | LFL | 74.9 | 0 |
| | V135 | RFL | | |
| | V136 | RHF | | |
| | V137 | LHF (LEFT HIND FLAPPER) | | |
| 40) | T50247 | RFL | 72.6 | 2 |
| | V138 | LFL | | |
| | V139 | RHF | | |

GEORGE H. BALAZS

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05-26-92
 PALAAU, MOLOKAI
 SITE E
 DAY 1

P. 9

| TAG NO. | | SCL (cm) | TMR SCORE |
|------------|----------------------------------------------------|----------|-----------|
| 41) T50248 | LFL (LEFT FLAP) | 75.7 | 1 |
| H531 | RFL (RIGHT FLAP) | | |
| H532 | RHF (RIGHT HIND FLIPPER) | | |
| H533 | R34 (BETW. 3 RD /4 TH SCALE) | | |
| 42) T50249 | RFL | 63.4 | 0 |
| H534 | LFL | | |
| H535 | LHF (LEFT HIND FLIPPER) | | |
| 43) T50250 | LFL | 64.9 | 0 |
| H536 | RFL | | |
| H537 | RHF | | |
| H538 | LHF | | |
| 44) T50251 | LFL | 61.1 | 0 |
| H552 | RFL | | |
| H553 | RHF | | |
| 45) T50252 | LFL | 61.0 | 0 |
| H554 | RFL | | |
| H555 | RHF | | |

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Southeast Fisheries Science Center
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05-26-92
DAY 1 ~ CONT.

P. 10

| | <u>TAG NO.</u> | | <u>SCL (cm)</u> | <u>TMR SCORE</u> |
|-----|----------------|----------------------------------------------------|-----------------|------------------|
| 46) | T50253 | R34 (BETW. 3 RD /4 TH SCALE) | 75.8 | 1 |
| | 7932 | RFL (RIGHT FLAP) | | |
| | Y581 | LFL (LEFT FLAP) | | |
| | BBA434 | L34 (BETW. 3 RD /4 TH SCALE) | | |
| | H558 | RHF (RIGHT HIND FLAPPER) | | |
| 47) | T50254 | LFL | 56.2 | 0 |
| | H559 | RFL | | |
| | H560 | RHF | | |
| 48) | T50255 | RFL | 85.9 | 1 |
| | H561 | LFL | | |
| | H562 | RHF | | |
| | H563 | LHF (LEFT HIND FLAPPER) | | |
| * | | | | |
| 49) | T50258 | L34 | 71.5 | 2 |
| | Y385 | RFL | | |
| | Y386 | LFL | | |
| | Y387 | LHF | | |
| 50) | T50259 | LFL | 62.3 | 0 |
| | H565 | RFL | | |
| | H566 | RHF | | |

* TAG NO. S T50256 & T50257 DID NOT WORK

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05-27-92
PALAAU, MOLOKAI
SITE E
DAY 2

P.11

| | <u>TAG NO</u> | | <u>SCL (cm)</u> | <u>TMR SCORE</u> |
|-----|---------------|--------------------------|-----------------|------------------|
| 51) | T50260 | RFL (RIGHT FLAP) | 70.4 | 1 |
| | H567 | LFL (LEFT FLAP) | | |
| | H568 | RHF (RIGHT HIND FLAPPER) | | |
| 52) | T50261 | LFL | 71.3 | 0 |
| | H569 | RFL | | |
| | H570 | RHF | | |
| 53) | * T50263 | LFL | 60.5 | 1 |
| | H571 | RFL | | |
| | H572 | RHF | | |
| 54) | T50264 | RFL | 62.9 | 2 |
| | H573 | LFL | | |
| | H574 | RHF | | |
| 55) | T50265 | LFL | 73.5 | 0 |
| | H575 | RFL | | |
| | H576 | LHF (LEFT HIND FLAPPER) | | |
| | H577 | RHF | | |
| 56) | T50266 | RFL | 62.5 | 2 |
| | H578 | LFL | | |
| | H579 | RHF | | |

* TAG NO T50262 RUINED, NOT USED

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05-27-92
DAY 2-CONT.

P.12

| | <u>TAG NO.</u> | | <u>SCL (cm)</u> | <u>TMR SCORE</u> |
|-----|----------------|---------------------------------------------------|-----------------|------------------|
| 57) | T50267 | L34 (BETW 3 RD /4 TH SCALE) | 68.9 | 1 |
| | 10766 | RFL (RIGHT FLAP) | | |
| | 10767 | LFL (LEFT FLAP) | | |
| | H580 | LHF (LEFT HIND FLIPPER) | | |
| 58) | *T50268 | RFL | 67.1 | 2 |
| | H581 | LFL | | |
| | H582 | RHF (RIGHT HIND FLIPPER) | | |
| 59) | T50269 | RFL | 66.9 | 0 |
| | H583 | LFL | | |
| | H584 | RHF | | |
| 60) | T50270 | LFL | 53.4 | 1 |
| | H587 | RFL | | |
| | H588 | LHF | | |
| 61) | T50271 | LFL | 59.7 | 0 |
| | H589 | RFL | | |
| | H590 | LHF | | |
| | H591 | RHF | | |

* TAG NO. T50268 NOT LOCKED.

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05-27-92
DAY 2 ~ CONT.

P. 13

| | <u>TAG NO</u> | | <u>SCL (cm)</u> | <u>TMR SCORE</u> |
|-----|---------------|--------------------------|-----------------|------------------|
| 62) | T50272 | LFL (LEFT FLAP) | 59.7 | 0 |
| | H592 | RFL (RIGHT FLAP) | | |
| | H593 | RHF (RIGHT HIND FLAPPER) | | |
| 63) | T50273 | LFL | 58.9 | 0 |
| | H594 | RFL | | |
| | H595 | RHF | | |
| 64) | T50274 | LFL | 65.9 | 0 |
| | H596 | RFL | | |
| | H597 | LHF (LEFT HIND FLAPPER) | | |
| 65) | T50275 | LFL | 58.5 | 1 |
| | H598 | RFL | | |
| | H599 | LHF | | |
| 66) | T50276 | RFL | 64.0 | 1 |
| | 7894 | LFL | | |
| | H605 | RHF | | |
| 67) | T50277 | LFL | 61.5 | 0 |
| | H606 | RFL | | |
| | H607 | RHF | | |

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05-27-92
 DAY 2 ~ CONT.

P. 14

| | <u>TAG NO</u> | | <u>SCL (cm)</u> | <u>TMR SCORE</u> |
|-----|---------------|----------------------------------------------------|-----------------|------------------|
| 68) | * T50279 | RFL (RIGHT FLAP) | 51.1 | 0 |
| | H608 | LFL (LEFT FLAP) | | |
| | H609 | LHF (LEFT HIND FLAPPER) | | |
| 69) | T50280 | LFL | 50.4 | 0 |
| | H610 | RFL | | |
| | H611 | RHF (RIGHT HIND FLAPPER) | | |
| 70) | * T50282 | LFL | 53.3 | 2 |
| | H612 | RFL | | |
| | H613 | LHF | | |
| 71) | T50283 | R34 (BETW. 3 RD /4 TH SCALE) | 69.4 | 2 |
| | 7227 | LFL | | |
| | 7228 | RFL | | |
| | Z93 | L34 (BETW. 3 RD /4 TH SCALE) | | |
| | H614 | RHF | | |
| 72) | T50284 | LFL | 59.6 | 1 |
| | H616 | RFL | | |
| | H617 | LHF | | |
| 73) | T50285 | LFL | 64.6 | 0 |
| | Y474 | RFL | | |
| | H619 | RHF | | |

* TAG NO. S T50278 & T50281 RUINED, NOT USED

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05-28-92

PALAAU, MOLOKAI

SITE E

DAY 3

P.15

| | <u>TAG NO</u> | | <u>SCL (cm)</u> | <u>TMR SCORE</u> |
|-----|---------------|--------------------------|-----------------|------------------|
| 74) | T50286 | RFL (RIGHT FLAP) | 69.0 | 0 |
| | H621 | LFL (LEFT FLAP) | | |
| | H622 | LHF (LEFT HIND FLIPPER) | | |
| 75) | T50287 | RFL | 69.9 | 0 |
| | H624 | LFL | | |
| | H625 | RHF (RIGHT HIND FLIPPER) | | |
| 76) | T50288 | LFL | 73.3 | 0 |
| | H626 | RFL | | |
| | H627 | LHF | | |
| 77) | T50289 | LFL | 65.2 | 0 |
| | H628 | RFL | | |
| | H629 | RHF | | |
| 78) | T50290 | RFL | 68.4 | 0 |
| | H630 | LFL | | |
| | H631 | RHF | | |
| 79) | T50291 | LFL | 75.7 | 0 |
| | H632 | RFL | | |
| | H633 | RHF | | |
| | H634 | LHF | | |

05-28-92
DAY 3 ~ CONT.

P. 16

| | <u>TAG NO</u> | | <u>SCL (cm)</u> | <u>TMR SCORE</u> |
|-----|---------------|----------------------------------------------------|-----------------|------------------|
| 80) | T50292 | LFL (LEFT FLAP) | 60.4 | 2 |
| | H635 | RFL (RIGHT FLAP) | | |
| | H636 | RHF (RIGHT HIND FLAPPER) | | |
| 81) | T50293 | LFL | 70.9 | 0 |
| | H637 | RFL | | |
| | H638 | LHF (LEFT HIND FLAPPER) | | |
| | H639 | RHF | | |
| 82) | T50294 | LFL | 64.7 | 2 |
| | H640 | RFL | | |
| | H641 | RHF | | |
| 83) | T50295 | RFL | 60.5 | 1 |
| | H643 | LFL | | |
| | H644 | LHF | | |
| 84) | T50296 | RFL | 64.5 | 2 |
| | H646 | L34 (NEXTW 3 RD /4 TH SCALE) | | |
| | H647 | LHF | | |
| 85) | T50297 | RFL | 70.7 | 1 |
| | H648 | LFL | | |
| | H649 | LHF | | |

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05-28-92
DAY 3 ~CONT.

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P. 17

| | <u>TAG NO</u> | | <u>SCL (cm)</u> | <u>TMR SCORE</u> |
|-----|---------------|--------------------------|-----------------|------------------|
| 86) | T50298 | RFL (RIGHT FLAP) | 59.7 | 1 |
| | H651 | LFL (LEFT FLAP) | | |
| | H652 | RHF (RIGHT HIND FLAPPER) | | |
| 87) | *T50300 | LFL | 59.6 | 1 |
| | H658 | RFL | | |
| | H659 | LHF (LEFT HIND FLAPPER) | | |

* TAG NO. T50299 DISCARDED, BENT

EXCLUDED TAGS

| | <u>TAG NO.</u> | <u>REASON</u> | <u>DATE</u> |
|-----|----------------|-----------------------|-------------|
| 1) | T50202 | DISCARDED | 07-09-91 |
| 2) | T50204 | DISCARDED | 07-09-91 |
| 3) | T50206 | DISCARDED | 07-09-91 |
| 4) | T50210 | NOT ON STRIP | 07-10-91 |
| 5) | T50225 | NOT ON STRIP | 12-04-91 |
| 6) | T50229 | MALFUNCTION, NOT USED | 12-04-91 |
| 7) | T50242 | ? | 12-05-91 |
| 8) | T50256✓ | DID NOT WORK | 05-26-92 |
| 9) | T50257✓ | DID NOT WORK | 05-26-92 |
| 10) | T50262✓ | RUINED, NOT USED | 05-27-92 |
| 11) | T50278✓ | RUINED, NOT USED | 05-27-92 |
| 12) | T50281✓ | RUINED, NOT USED | 05-27-92 |
| 13) | T50299✓ | DISCARDED, BENT | 05-28-92 |

87 TAGGED

13 EXCLUDED TAGS

100 TAGS

100 AUSTRALIAN T - TAGS

MOLOKAI



U. S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Science Center Honolulu Laboratory
2570 Dole St. • Honolulu, Hawaii 96822-2396
(808)943-1221 • Fax: (808)943-1290

June 18, 1992

FOR: Karena Yee
Administrative Officer

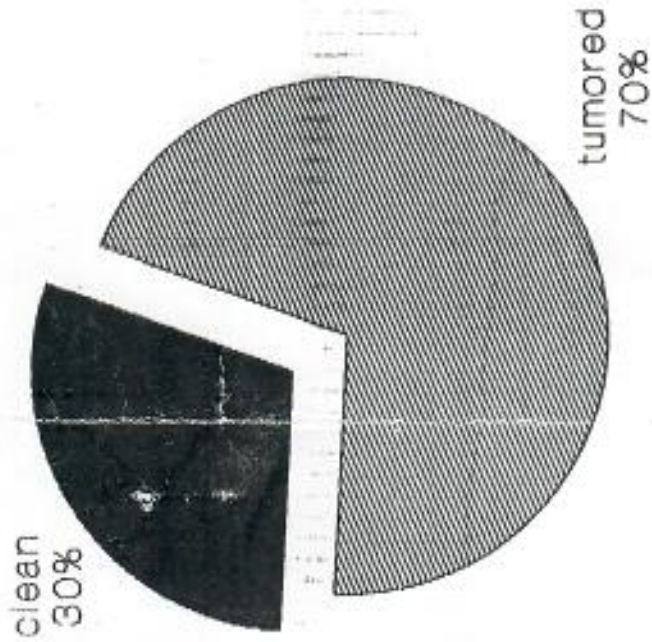
FROM: George Balazs
PSI, Marine Turtle Research Program

SUBJECT: Justification for additional FY92 contracted work with
Edwin Medeiros, Friendly Isle Fishing Company.

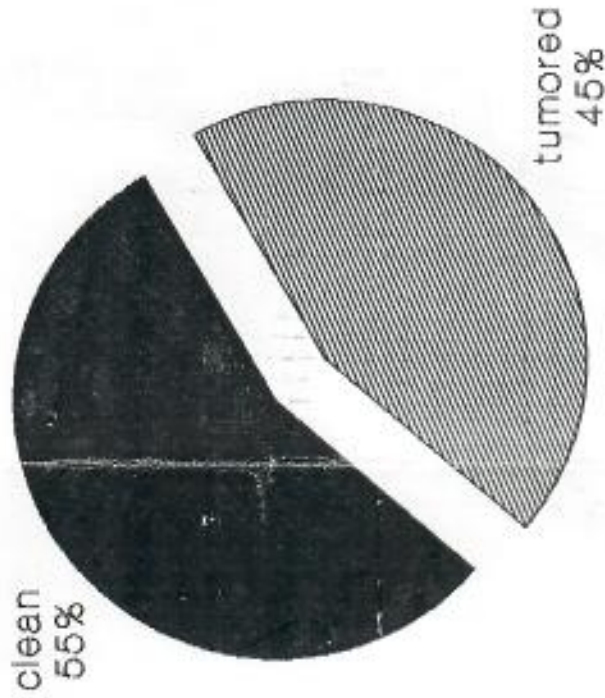
Recent research conducted on Molokai last month has revealed a continuing significant increase in the tumor disease impacting the resident green turtle population (threatened species under the Endangered Species Act). In addition, turtles in this coastal area of Molokai require greater effort to capture and tag than estimated. Additional work is required immediately using the services of Mr. Medeiros' fishing skills and equipment to capture, health-screen, and tag more turtles to statistically confirm the level of disease seen last month. Consequently, another contract with Mr. Medeiros is being requested.

Turtles Tagged at Palaau, Molokai

May 26-29, 1992



Recaptured
(37 = 30.8%)



Newly Captured
(83 = 69.2%)

Total = 120 animals

*George
has something of interest
to my report to Paul
(2)*

JOHN CLARK (1980) BEACHES OF MAUI COUNTY

In July 1973 by Hui Alalaha, a group formed specifically to seek public access to parts of Molokai that have been kept off-limits to the general public. Kawakui is located on land previously belonging to Molokai Ranch, Ltd. The ranch was started in 1897 by a group of men who purchased the *ahouwa'a* of Kaka'ako'i and Hui and the Kairakakai ranch lands formerly owned by Kamehameha V. These combined holdings encompassed almost one-third of the island of Molokai and the entire west end. Since the formation of the ranch, this entire area including all of its beaches had been accessible only to Molokai's Ranch employees, stockholders, and guests with passes. Hui Alalaha members and supporters marched from Mo'omomi Beach to Kawakui on the Fourth of July weekend in 1975 to demonstrate the public's need and desire for access. Kawakui has since been opened to the public. On October 18, 1975, Hui Alalaha led another march along the Pali'au Road to Hale o Lono, to protest restricted access along the portion of the Pali'au Road controlled by Molokai Ranch, Ltd. Kawakui Beach is a wide crescent of white sand at the head of Kawakui Bay. The beach has a moderately steep slope, and the offshore bottom drops off quickly to overhead depths. Kawakui is safe for swimming when the ocean is calm, primarily during the summer months. During times of heavy surf, however, especially during the winter and spring, the bay's waters are very dangerous, with powerful rip currents and a pounding shorebreak. To the rear of the beach is a *hiway* grove that provides a shady picnic area. The area is totally unimproved except for the dirt access road which begins at Maunaloa Highway. The turnoff is marked by a public right-of-way sign and is located 2.5 miles north from the turnoff to the Sheraton Molokai's.

Kawakui Bay, located just beyond the right point of Kawakui Beach, is a smaller version of Kawakui Bay, except that the beach is primarily rocky with small pockets of sand. It is not particularly appealing as a swimming area and is very dangerous during the winter months.

Mo'omomi Beach
(19-21)

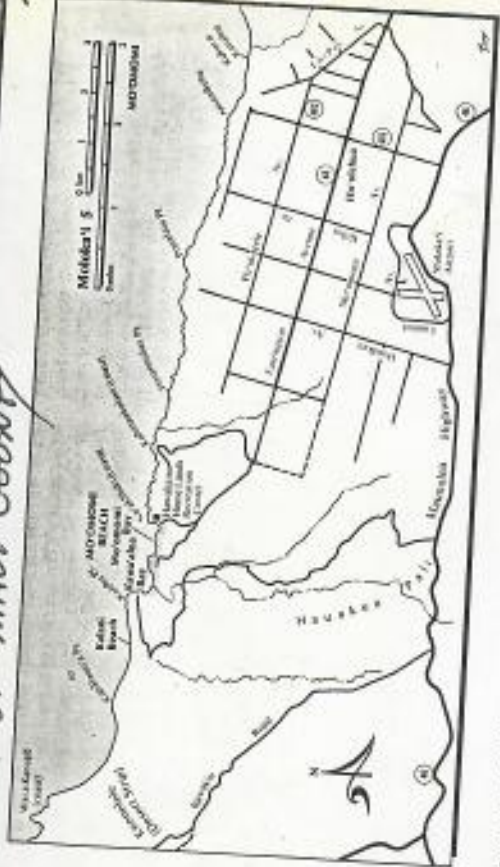
Mo'omomi is a very large coastal area that extends several miles inland from the ocean and encompasses a por-

tion of one of the most impressive sand dune developments in the Hawaiian Islands. These dunes are still being formed and expanded by sand from the beaches within the Mo'omomi shoreline. This side of the island is exposed to prevailing trade winds which sweep almost continuously across the area. Over centuries these winds have created the massive dunes in this northwestern corner of Molokai by carrying the shoreline sand inland, in some places for over four miles. This desolate, steady region, which includes some older, solidified sand dunes, is sometimes referred to as the Desert Strip. It is also known as Konohele, "the wind-blown sands."

Mo'omomi was once a popular fishing area. One traditional story says that before the turn of the century the inhabitants of Pelekunu, an isolated valley eighteen miles away, often journeyed by canoe during the summer to Mo'omomi. There they caught and dried fish to take back to Pelekunu. Pelekunu is accessible from the ocean only during certain months of the year. Heavy winter surf prevents boats from landing. Pelekunu also has very high valley walls which permit direct sunlight in the valley's interior only for five hours a day, and during the winter months the valley experiences heavy rains. All these factors, in addition to the better shallow-water fishing grounds and the hotter drying areas at Mo'omomi, made the expedition a travel odyssey as well as a food-procuring trip. Fishing and drying were also done at Kihirawo and Kalaupepa.

Besides being a fishing grounds for the people of Pelekunu as well as others, Mo'omomi was also a quarry site for stones to make *atōles*. The name of the *atōles* which encompasses the entire west end of the island including most of Mo'omomi is Kalaiko'i, "the adze pit." Although stone was quarried at Mo'omomi, the largest quarries in Kalaiko'i were located at Māunaloa and covered an area of thirty acres. Prior to their contact with foreign cultures, the Hawaiians had no source of metal. For weapons and tools they were entirely dependent on shell and bone, and wood and stone, so hard rocks that could be quarried were very valuable.

To longtime residents of Molokai, Mo'omomi Beach is the entire three-mile length of shoreline from the Hawaiian Home Lands recreation center to the high sea cliffs that run past Mōkīno to 'Ilio Point. This long stretch of shoreline, however, includes at least three dif-



ferent and easily discernible beaches. Scientific shoreline studies of the Mo'omomi area have used two old map names, Kalaiko'i and Kawa'āloa, to indicate the first two beaches, while the name Mo'omomi is applied to the third beach. Although Kalaiko'i and Kawa'āloa are considered by many people to be only names on a map, they are useful designations for pinpointing and discussing the individual beaches.

Kalaiko'i means "the sky" or "the royal chief," and it is the first of the three Mo'omomi beaches. Kalaiko'i Beach is a storm beach lined along its entire seaward edge by beach rock. Inland of the beach rock is a fairly wide white sand beach created by storm surf carrying sand over the rocks. Unprotected from the open ocean, the beach is assaulted by prevailing trade wind waves, as well as by heavy winter surf. The offshore bottom is deep and the area is subject to strong alongshore currents. The entire backshore is edged by low sand dunes, many of which have solidified, forming some very interesting sculptures. The cliffs at the left end of the beach, also composed primarily of solidified sand, are continu-

ally being eroded by the wind and waves. Large, jagged blocks of fallen rock line their base. The heavy winter surf, which often sweeps completely across the flat beach, deposits driftwood and other items on the sand.

Kawa'āloa means "the long canoe." Kawa'āloa Beach is a long, wide crescent of white sand at the head of a large bay. The sand is subject to seasonal erosion and accretion. The left end of the beach is wide and flat, and strewn with driftwood, seaweed, and other items deposited by heavy surf. As the beach progresses to the right, it gets narrower and is very steep at the water's edge. This end of the beach is somewhat protected by the right point of the bay and the broken reef offshore, offering a cleaner, calmer, and safer swimming area than does the left end. Occasionally the waves offshore are good enough for surfing. Inshore, on a bluff above the beach, is a large beach house that was built by the Del Monte Corporation for its white-collar employees. Both Kawa'āloa and Kalaiko'i are sometimes called Ranch Mo'omomi because Molokai Ranch, Ltd., owns all of the land *mo'ouka* of these beaches.

The section of the Mo'omomi shoreline that is called Mo'omomi Beach is the bay where the Hawaiian Home Lands Commission has a community recreation center. The large pavilion is located on the low escarpment above the beach. The small pocket beach of white sand in the inner right corner of the bay is shallow and rocky, but a good swimming area for children. The bay is well protected by its fairly long (right) point. To the left of the sheltered bay is a rocky headland with several small sand pockets fringed by rocks and tidal pools. This area is frequented primarily by fishermen. It is sometimes called Homestead. Mo'omomi to differentiate it from Ranch Mo'omomi.

There is no public access to any part of the three-mile length of the Mo'omomi shoreline. The gates leading to the beaches are all controlled by private concerns.

(2)

Kalaupapa Peninsula

Kalaupapa translates as "the flat plain" or as "mech level land." The peninsula was formed principally from lava that came from Kaubako Crater, flowing against the sea cliffs of the main island and seaward of the

crater. The crater is more than 450 feet deep and extends below sea level. The inner slopes of the crater funnel in to a large, high-walled pit that is partially filled with bluish-green brackish water. The pond is easily visible from the lookout at Pu'u 'Uao, the highest point of Kaubako Crater. Kalaupapa Peninsula is made up of three ahupua'a: Kalaupapa, Mokuauia, and Kalawao. The entire peninsula is called Kalaupapa because Kalaupapa has been the primary landing and center of population since the late 1800s. No one has lived permanently on the peninsula outside of Kalaupapa since the 1930s.

Prior to the mid-1800s Kalaupapa Peninsula was the home of a community of Hawaiian fishermen and their families. In 1866, however, the Board of Health selected Kalawao to be the site of an exile colony for lepers. Leprosy had been introduced to the Hawaiian Islands from the Orient and had grown to epidemic proportions among the Hawaiian people.

At that time no means were available to arrest the disease, so those who contracted it were simply removed from their families and society, and isolated. The Kalaupapa Peninsula provided a perfect natural prison. The Hawaiian government had acquired the ahupua'a's

of Mokuauia and Kalawao in 1848, which included the valleys of Waikolu, Wa'aloa, and Waikoa. The ahupua'a of Kalaupapa was purchased in 1873, giving the government complete ownership of the peninsula. The Hawaiians residing there were given the option of remaining or of relocating to Kalaupapa, on the other side of the island. Almost forty of the original residents chose to remain and were given access to all areas of the settlement. This remaining was allowed until 1894, when the Board of Health decided that the situation was unhealthy and evicted all the nonleper residents.

When the settlement at Kalaupapa was created, the Board of Health had felt that the lepers would be able to support themselves by working the land and fishing, as the residents before them had done. The officials thought that after a few years the epidemic would abate and then and once all the lepers had been isolated, the epidemic excited into the twentieth century, however, and the settlement never became self-sufficient. The first boatload of lepers landed on the peninsula on January 6, 1866. As more and more people were exiled, the conditions at Kalawao, the site of the original settlement, became unbearably bad. The Hawaiian monarchy had established an organized hospital settlement on paper, but in reality there was very little order, very little help, and every conceivable type of crime. Many lepers were simply left to die when they could no longer care for themselves. Boatloads of new patients were greeted with this phrase of despair: "A 'ole kama'ama'ama kama'ama'ama." "In this place there is no life."

In 1873, seven years after the start of the settlement, a young Catholic priest named Father Damien arrived at Kalaupapa on a small vessel carrying fifty lepers and a few head of cattle. Damien was the first resident priest on the peninsula, and his work among the lepers is legendary. Joseph De Veuster was born at Tremelo, Belgium, on January 3, 1840. He entered the Congregation of the Sacred Hearts in Louvain, taking the name of a physician-saint, Damien; volunteered for duty as a missionary in Hawaii; and arrived in Honolulu on March 19, 1864. Shortly after, he was ordained a priest in the Cathedral of Our Lady of Peace in Honolulu and was assigned to the island of Hawaii. Damien spent nine years on the Big Island, first in Puna and then in the Kohala and Hamakua districts.

In 1872 a Sacred Hearts brother spent six weeks at

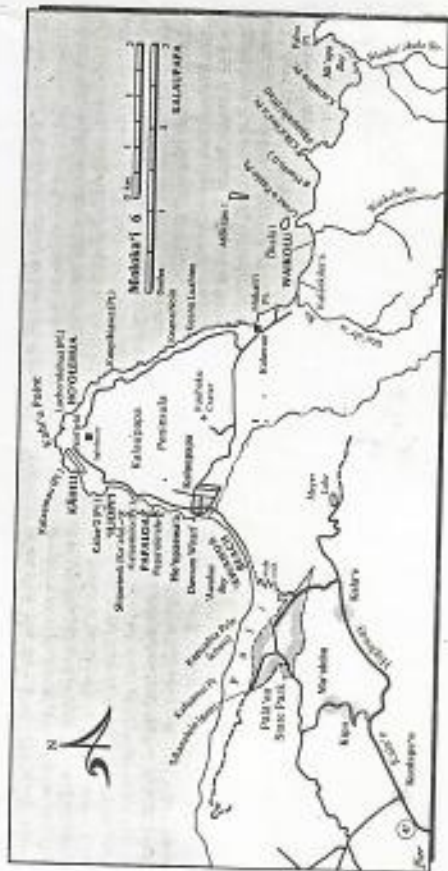
Kalaupapa erecting St. Philomena Church. Damien and three other priests decided to rotate the duties at the new church. Damien drew the first tour of duty, arrived on May 10, 1873, and stayed for the next sixteen years.

Damien contracted leprosy and died at the settlement on April 15, 1889. His remains were returned to Louvain, Belgium, in May of 1926 and buried in the crypt of the church where he first entered religious life. Pope Paul VI declared him the Venerable Father Damien on July 7, 1977. Veneration is the first step toward sainthood in the Catholic church; the second is beatification, and the third and final step, canonization.

On November 11, 1977, the Damien Museum and Archives were blessed and opened to the public. Located on O'aha, at St. Patrick's Church in Kaimuki, the museum contains personal possessions, papers, letters, and other memorabilia of Father Damien. Although many individuals assisted and followed Damien, it is his name that has become synonymous with the settlement on Kalaupapa Peninsula. The museum and archives are a good place to start for anyone seeking more information about Damien or the settlement.

Today the leprosy treatment center at Kalaupapa Peninsula is administered by the State Department of Health. The thirteen-square-mile district is a county of its own, Kalaupapa County, although it has no formal county government. There are 125 patient-residents, 37 non-patient employees, and three members of religious orders living on the peninsula (as of October 1979). No new patients are admitted to Kalaupapa. The median term of residence of the present patients is 33.5 years, the median patient age is 58.8 years, and only eight of the 95 patients over 50 years of age are able-bodied. Kalaupapa Peninsula and the entire county of Kalaupapa are closed to all outsiders. Official visitors and guests of the patient-residents are allowed limited stays by permit only. Trespassers are subject to arrest by the resident sheriff or his deputies. Signs are posted in conspicuous places to advise visitors of the laws and the consequences. Authorized guided tours of the peninsula are available to the public through several commercial firms.

There are five beaches on Kalaupapa Peninsula: 'Awahulu, Papaloa, 'Iliopi'i, Kahili, and Ho'olehua. All of them can be seen from the public lookout next to the start of the penitentiary trail 1,664 feet above the peninsula.



4/21/86

17° 00' 00"

08

09

10

11

57° 30' 12"

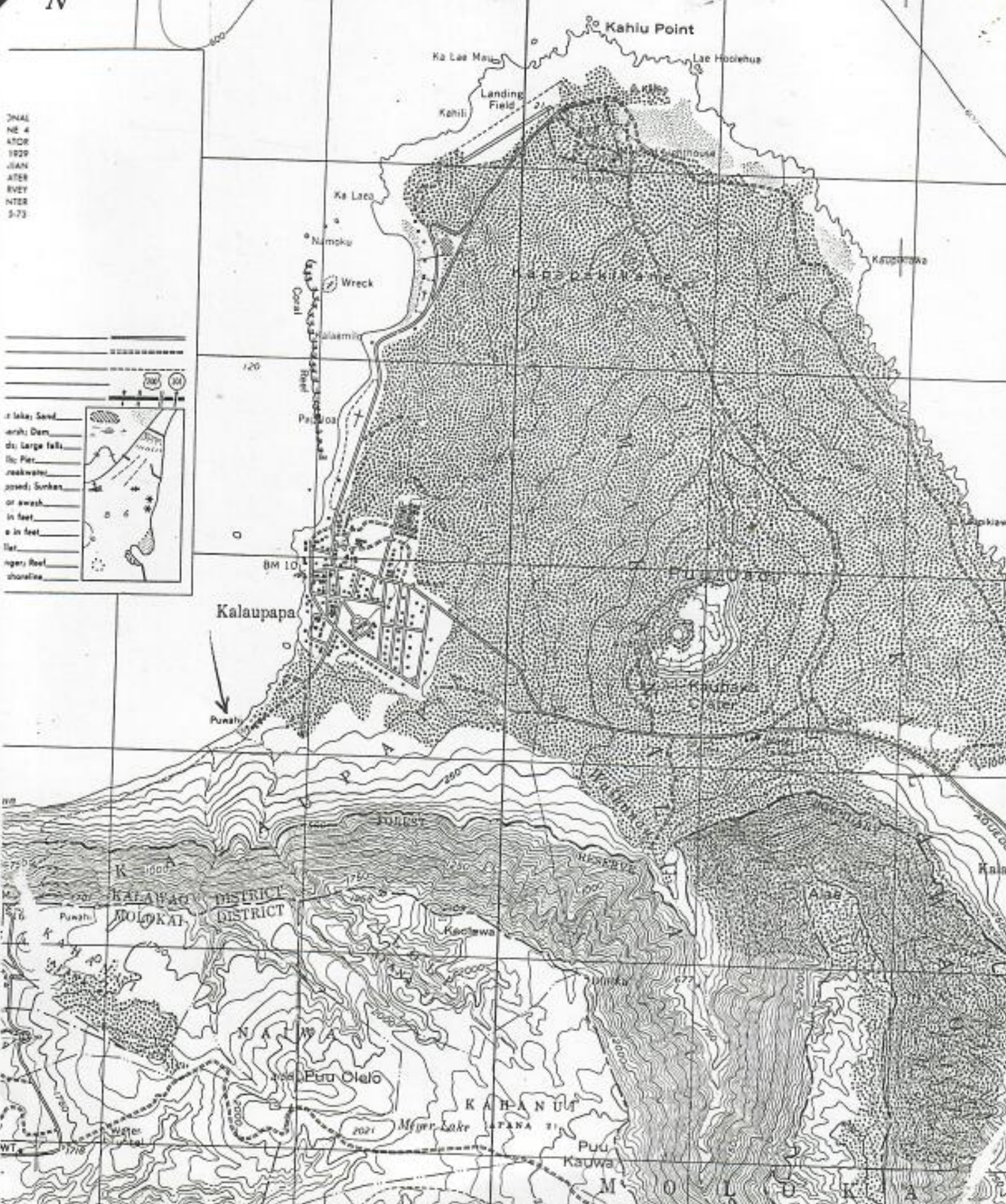
N

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NTER
S-73

Legend:

- lake; Sand
- dash; Dam
- di; Large falls
- li; Pier
- dash; rockwater
- dash; pond; Sunken
- dash; or swash
- dash; in feet
- dash; e in feet
- dash; bar
- dash; nger; Reef
- dash; shoreline

Scale: 0 100 200



Public Law 96-565
96th Congress

An Act

To establish the Kalaupapa National Historical Park in the State of Hawaii, and for other purposes.

Dec. 22, 1980
(H.R. 7217)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SEC. 101. In order to provide for the preservation of the unique nationally and internationally significant cultural, historic, educational, and scenic resources of the Kalaupapa settlement on the island of Molokai in the State of Hawaii, there is hereby established the Kalaupapa National Historical Park (hereinafter referred to as the "park").

Kalaupapa
National
Historical Park,
Hawaii.
Establishment.
16 USC 410j.

SEC. 102. The Congress declares the following to constitute the principal purposes of the park:

Purposes.
16 USC 410j-1.

(1) to preserve and interpret the Kalaupapa settlement for the education and inspiration of present and future generations;

(2) to provide a well-maintained community in which the Kalaupapa leprosy patients are guaranteed that they may remain at Kalaupapa as long as they wish; to protect the current lifestyle of these patients and their individual privacy; to research, preserve, and maintain the present character of the community; to research, preserve, and maintain important historic structures, traditional Hawaiian sites, cultural values, and natural features; and to provide for limited visitation by the general public; and

(3) to provide that the preservation and interpretation of the settlement be managed and performed by patients and Native Hawaiians to the extent practical, and that training opportunities be provided such persons in management and interpretation of the settlement's cultural, historical, educational, and scenic resources.

SEC. 103. The boundaries of the park shall include the lands, waters, and interests therein within the area generally depicted on the map entitled "Boundary Map, Kalaupapa National Historical Park", numbered P07-80024, and dated May 1980, which shall be on file and available for public inspection in the local and Washington, District of Columbia offices of the National Park Service, Department of the Interior. The Secretary of the Interior (hereinafter referred to as the "Secretary") may make minor revisions in the boundary of the park by publication of a revised boundary map or other description to that effect in the Federal Register.

Boundaries;
public
inspection.
16 USC 410j-2.

SEC. 104. (a) Within the boundary of the park, the Secretary is authorized to acquire those lands owned by the State of Hawaii or any political subdivision thereof only by donation or exchange, and only with the consent of the owner. Any such exchange shall be accomplished in accordance with the provisions of sections 5 (b) and (c) of the Act approved July 15, 1968 (82 Stat. 354). Any property conveyed to the State or a political subdivision thereof in exchange for property within the park which is held in trust for the benefit of Native

Land
acquisition.
16 USC 410j-3.

16 USC 4601-22.

*Compliments of
Congressman Phillip Burton
6th District, California*

48 USC 691.

48 USC 697.

48 USC 698.

Hawaiians, as defined in the Hawaiian Homes Commission Act of 1920 shall, as a matter of Federal law, be held by the grantee subject to an equitable estate of the same class and degree as encumbers the property within the preserve; and "available lands" defined in section 203 of the Hawaiian Homes Commission Act may be exchanged in accordance with section 204 of said Act. The vesting of title in the United States to property within the park shall operate to extinguish any such equitable estate with respect to property acquired by exchange within the park.

(b) The Secretary is authorized to acquire privately-owned lands within the boundary of the park by donation, purchase with donated or appropriated funds, or exchange.

(c) The Secretary is authorized to acquire by any of the foregoing methods except condemnation, lands, waters, and interests therein outside the boundary of the park and outside the boundaries of any other unit of the National Park System but within the State of Hawaii, and to convey the same to the Department of Hawaiian Home Lands in exchange for lands, waters, and interests therein within the park owned by that Department. Any such exchange shall be accomplished in accordance with the provisions defined in subsection (a) of this section.

Administration.
16 USC 410j-4.
43 USC 1457, 16
USC 1, 2, 3, 4, 22,
43.
16 USC 461-467.

SEC. 105. (a) The Secretary shall administer the park in accordance with the provisions of the Act of August 25, 1916 (39 Stat. 535), the Act of August 21, 1935 (49 Stat. 666), and the provisions of this Act.

(b)(1) With the approval of the owner thereof, the Secretary may undertake critical or emergency stabilization of utilities and historic structures, develop and occupy temporary office space, and conduct interim interpretive and visitor services on non-Federal property within the park.

Cooperative
agreements.

(2) The Secretary shall seek and may enter into cooperative agreements with the owner or owners of property within the park pursuant to which the Secretary may preserve, protect, maintain, construct, reconstruct, develop, improve, and interpret sites, facilities, and resources of historic, natural, architectural, and cultural significance. Such agreements shall be of not less than twenty years duration, may be extended and amended by mutual agreement, and shall include, without limitation, provisions that the Secretary shall have the right of access at reasonable times to public portions of the property for interpretive and other purposes, and that no changes or alterations shall be made in the property except by mutual agreement. Each such agreement shall also provide that the owner shall be liable to the United States in an amount equal to the fair market value of any capital improvements made to or placed upon the property in the event the agreement is terminated prior to its natural expiration, or any extension thereof, by the owner, such value to be determined as of the date of such termination, or, at the election of the Secretary, that the Secretary be permitted to remove such capital improvements within a reasonable time of such termination. Upon the expiration of such agreement, the improvements thereon shall become the property of the owner, unless the United States desires to remove such capital improvements and restore the property to its natural state within a reasonable time for such expiration.

(3) Except for emergency, temporary, and interim activities as authorized in paragraph (1) of this subsection, no funds appropriated pursuant to this Act shall be expended on non-Federal property unless such expenditure is pursuant to a cooperative agreement with the owner.

(4) The Secretary may stabilize and rehabilitate structures and other properties used for religious or sectarian purposes only if such properties constitute a substantial and integral part of the historical fabric of the Kalaupapa settlement, and only to the extent necessary and appropriate to interpret adequately the nationally significant historical features and events of the settlement for the benefit of the public.

Religious
structures

Sec. 106. The following provisions are made with respect to the special needs of the leprosy patients residing in the Kalaupapa settlement—

Leprosy
patients.
16 USC 410j-5.

(1) So long as the patients may direct, the Secretary shall not permit public visitation to the settlement in excess of one hundred persons in any one day.

(2) Health care for the patients shall continue to be provided by the State of Hawaii, with assistance from Federal programs other than those authorized herein.

(3) Notwithstanding any other provision of law, the Secretary shall provide patients a first right of refusal to provide revenue-producing visitor services, including such services as providing food, accommodations, transportation, tours, and guides.

(4) Patients shall continue to have the right to take and utilize fish and wildlife resources without regard to Federal fish and game laws and regulations.

(5) Patients shall continue to have the right to take and utilize plant and other natural resources for traditional purposes in accordance with applicable State and Federal laws.

Sec. 107. The following provisions are made with respect to additional needs of the leprosy patients and Native Hawaiians for employment and training. (The term "Native Hawaiian" as used in this title, means a descendant of not less than one-half part of the blood of the races inhabiting the Hawaiian Islands previous to the year 1778.)—

Employment
and training.
16 USC 410j-6.
"Native
Hawaiian."

(1) Notwithstanding any other provision of law, the Secretary shall give first preference to qualified patients and Native Hawaiians in making appointments to positions established for the administration of the park, and the appointment of patients and Native Hawaiians shall be without regard to any provision of the Federal civil service laws giving an employment preference to any other class of applicant and without regard to any numerical limitation on personnel otherwise applicable.

(2) The Secretary shall provide training opportunities for patients and Native Hawaiians to develop skills necessary to qualify for the provision of visitor services and for appointment to positions referred to in paragraph (1).

Sec. 108. (a) There is hereby established the Kalaupapa National Historical Park Advisory Commission (hereinafter referred to as the "Commission"), which shall consist of eleven members each appointed by the Secretary for a term of five years as follows:

Kalaupapa
National
Historical Park
Advisory
Commission.
Establishment.
Membership.
16 USC 410j-7.

(1) seven members who shall be present or former patients, elected by the patient community; and

(2) four members appointed from recommendations submitted by the Governor of Hawaii, at least one of whom shall be a Native Hawaiian.

(b) The Secretary shall designate one member to be Chairman. Any vacancy in the Commission shall be filled in the same manner in which the original appointment was made.

Chairman.
Vacancies.

(c) A member of the Commission shall serve without compensation as such. The Secretary is authorized to pay the expenses reasonably

Compensation.
Expenses.

incurred by the Commission in carrying out its responsibilities under this Act on vouchers signed by the Chairman.

(d) The Secretary shall consult with and seek the advice of the Commission with respect to the development and operation of the park including training programs. The Commission shall, in addition, advise the Secretary concerning public visitation to the park, and such advice with respect to numbers of visitors shall be binding upon the Secretary if the Commission certifies to him that such advice is based on a referendum, held under the auspices of the Commission, of all patients on the official Kalaupapa Registry.

Expiration.

(e) The Commission shall expire twenty-five years from the date of enactment of this Act.

Reevaluation.
16 USC 410j-8.

SEC. 109. At such time when there is no longer a resident patient community at Kalaupapa, the Secretary shall reevaluate the policies governing the management, administration, and public use of the park in order to identify any changes deemed to be appropriate.

Appropriation
authorization.
16 USC 410j-9.

SEC. 110. Effective October 1, 1981, there are hereby authorized to be appropriated such sums as may be necessary to carry out the purposes of this title but not to exceed \$2,500,000 for acquisition of lands and interests in lands and \$1,000,000 for development.

TITLE II

Historic sailing
ship, financial
assistance.
49 Stat. 666, 16
USC 462.

SEC. 201. In furtherance of the purposes of subsection 2(e) of the Act of August 21, 1935 (49 Stat. 6666), the Secretary of the Interior is authorized to provide financial assistance for the operation, maintenance and protection of the historic sailing ship Falls of Clyde, located in Honolulu Harbor, Hawaii. Such authorization shall terminate at such time as the Falls of Clyde is no longer located in the State of Hawaii.

SEC. 202. Authority to enter into contracts or cooperative agreements, to incur obligations or to make payments under this Act shall be effective only to the extent, and in such amounts, as are provided in advance in appropriation Acts.

TITLE III

Native
Hawaiians Study
Commission Act.
42 USC 2991a
note.

SEC. 301. This title may be cited as the "Native Hawaiians Study Commission Act".

NATIVE HAWAIIANS STUDY COMMISSION

Establishment.
42 USC 2991a
note.

SEC. 302. There is hereby established the Native Hawaiians Study Commission (hereinafter in this title referred to as the "Commission").

Membership.

(b) The Commission shall be composed of nine members appointed by the President. Not more than three of such members shall be residents of the State of Hawaii.

Chairman.

(c) The Chairman and Vice Chairman of the Commission shall be designated by the President at the time of appointment.

Vacancies.

(d) Vacancies in the membership of the Commission shall not affect the powers of the remaining members to execute the functions of the Commission and shall be filled in the same manner in which the original appointments were made.

(e) The President shall call the first meeting of the Commission not more than ninety days after the date of the enactment of this title.

(f) Five members of the Commission shall constitute a quorum, but a smaller number specified by the Commission may conduct hearings.

(g) Each member of the Commission shall receive \$100 for each day such member is engaged in performing the duties of the Commission, except that members of the Commission who are fulltime officers or employees of the United States shall receive no additional pay on account of their service on the Commission other than official travel expenses.

(h) While away from their homes or regular places of business in the performance of services for the Commission, members of the Commission (including members who are fulltime officers or employees of the United States) shall be allowed travel expenses, including per diem, in lieu of subsistence, in the same manner as persons employed intermittently in the Government service are allowed expenses under section 5703 of title 5, United States Code.

(i) Subject to such rules and regulations as may be adopted by the Commission, the Chairman may—

(1) appoint and fix the compensation of an executive director, a general counsel, and such additional staff as he deems necessary, without regard to the provisions of title 5, United States Code, governing appointments in the competitive service, and without regard to chapter 51 and subchapter III of chapter 53 of such title relating to classification and General Schedule pay rates, but at rates not in excess of the maximum rate of pay in effect from time to time for grade GS-18 of the General Schedule under section 5332 of such title; and

(2) procure temporary and intermittent services to the same extent as is authorized by section 3109 of title 5, United States Code, but at rates not to exceed \$100 a day for individuals.

(j) Subject to section 552a of title 5, United States Code, the Commission may secure directly from any department or agency of the United States information necessary to enable it to carry out this title. Upon request of the Chairman of the Commission, the head of such department or agency shall furnish such information to the Commission.

(k) The Commission may use the United States mails in the same manner and upon the same conditions as other departments and agencies of the United States.

DUTIES OF THE COMMISSION

SEC. 303. (a) The Commission shall conduct a study of the culture, needs and concerns of the Native Hawaiians.

(b) The Commission shall conduct such hearings as it considers appropriate and shall provide notice of such hearings to the public, including information concerning the date, location and topic of each hearing. The Commission shall take such other actions as it considers necessary to obtain full public participation in the study undertaken by the Commission.

(c) Within one year after the date of its first meeting, the Commission shall publish a draft report of the findings of the study and shall distribute copies of the draft report to appropriate Federal and State agencies, to Native Hawaiian organizations, and upon request, to members of the public. The Commission shall solicit written comments from the organizations and individuals to whom copies of the draft report are distributed.

(d) After taking into consideration any comments submitted to the Commission, the Commission shall issue a final report of the results of its study within nine months after the publication of its draft report. The Commission shall submit copies of the final report and

Pay.

Travel expenses.

Staff.

5 USC 5101,
5331.45 FR 09201.
5 USC 5332.Temporary and
intermittent
services.Study.
42 USC 2991a
note.
Hearings; public
notice.

Draft report.

Comments.

Final report.

Submittal to
President and
congressional
committees.

copies of all written comments on the draft submitted to the Commission under paragraph (c) to the President and to the Committee on Energy and Natural Resources of the Senate and the Committee on Interior and Insular Affairs of the House of Representatives.

(e) The Commission shall make recommendations to the Congress based on its findings and conclusions under subsection (a) of this section.

TERMINATION OF THE COMMISSION

42 USC 2991a
note.

Sec. 304. Except as provided in subsection (b) of section 307, upon the expiration of the sixty-day period following the submission of the report required by section 303, the Commission shall cease to exist.

DEFINITIONS

42 USC 2991a
note.

Sec. 305. For the purposes of this title, the term "Native Hawaiian" means any individual whose ancestors were natives of the area which consisted of the Hawaiian Islands prior to 1778.

SAVINGS CLAUSES

42 USC 2991a
note.

Sec. 306. No provision of this title shall be construed as—

(1) constituting a jurisdictional act, conferring jurisdiction to sue, or granting implied consent to Native Hawaiians to sue the United States or any of its offices; or

(2) constituting a precedent for reopening, renegotiating, or legislating any past settlement involving land claims or other matters with any Native organization or any tribe, band, or identifiable group of American Indians.

AUTHORIZATION

42 USC 2991a
note.

Sec. 307. (a) There are hereby authorized to be appropriated for fiscal years 1982 and 1983 such sums as are necessary to carry out the provisions of this title. Until October 1, 1981, salaries and expenses of the Commission shall be paid from the contingent fund of the Senate upon vouchers approved by the Chairman. To the extent that any payments are made from the contingent fund of the Senate prior to the time appropriation is made, such payments shall be chargeable against the authorization provided herein.

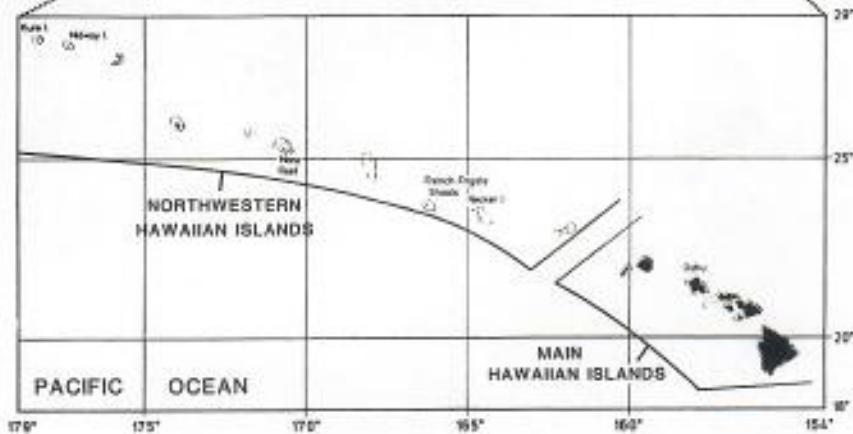
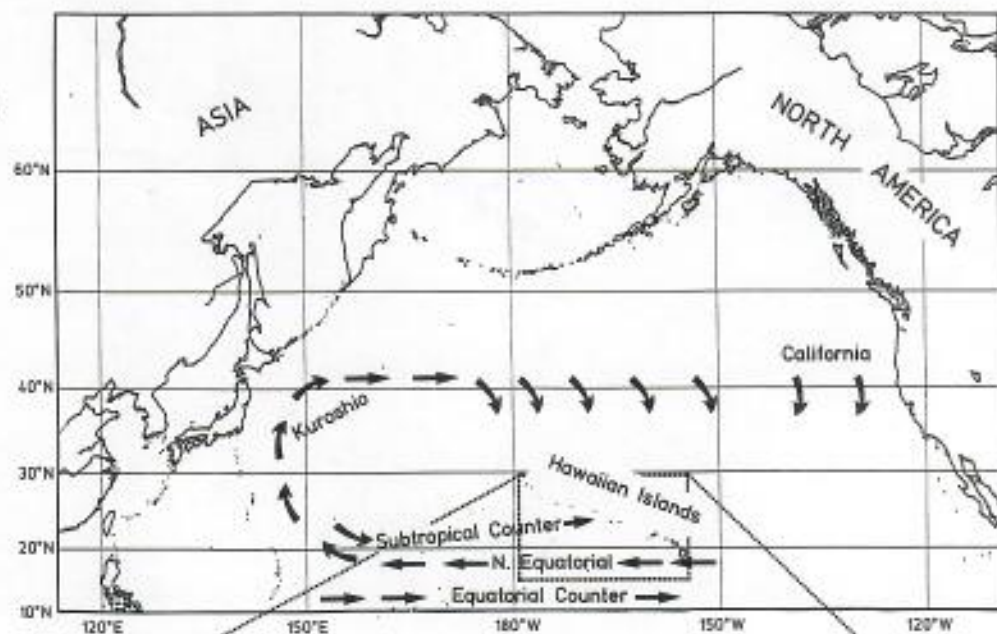
(b) The Secretary of the Treasury shall reserve a reasonable portion of the funds appropriated pursuant to subsection (a) of this section for the purpose of providing payment for the transportation, subsistence, and reasonable expenses of the members of the Commission in testifying before the Congress with respect to their duties and activities while serving on the Commission or to such matters as may involve the findings of the study of the Commission after the expiration of the Commission pursuant to section 304.

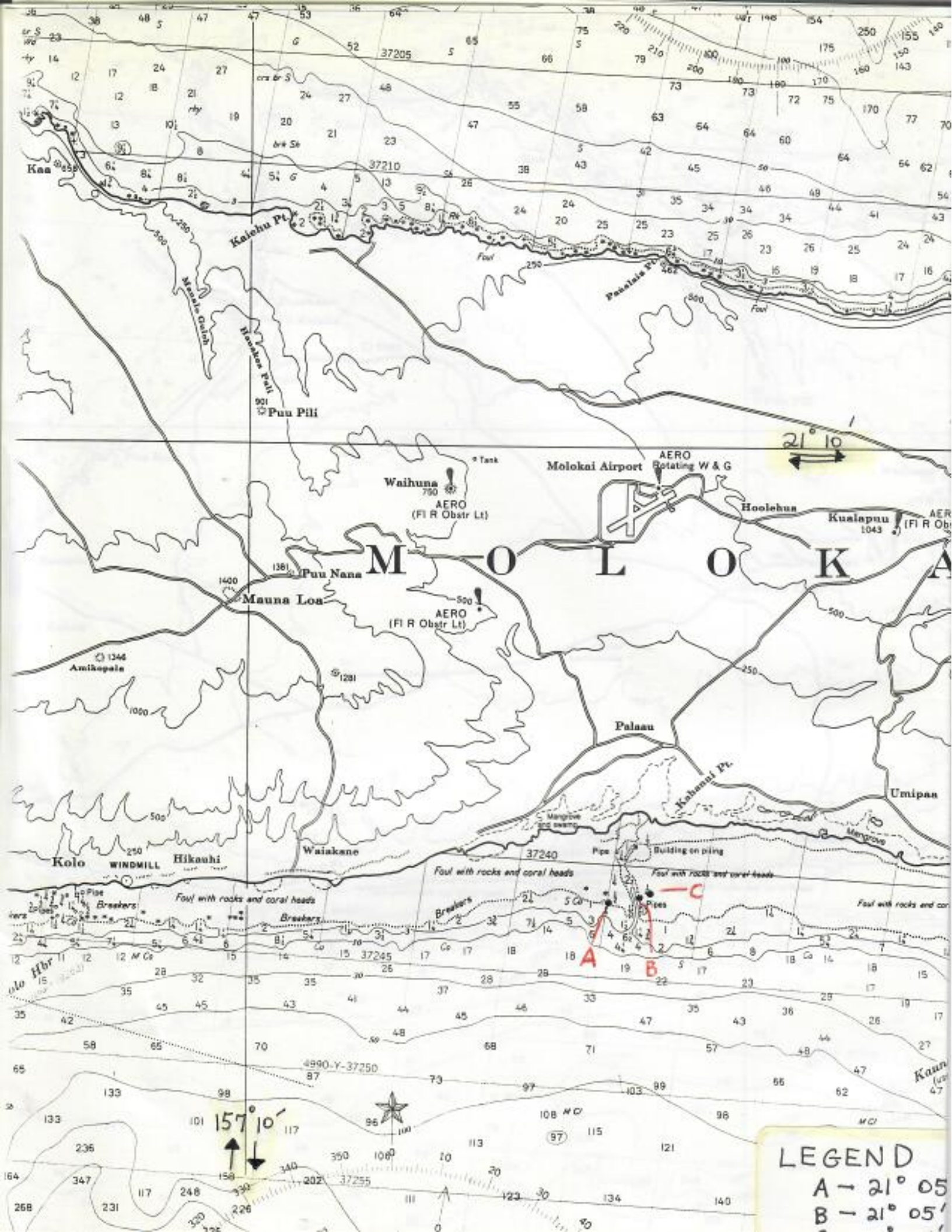
Approved December 22, 1980.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 96-1019 (Comm. on Interior and Insular Affairs).
SENATE REPORT No. 96-1027 (Comm. on Energy and Natural Resources).
CONGRESSIONAL RECORD, Vol. 126 (1980):
 May 19, considered and passed House.
 Dec. 4, considered and passed Senate, amended.
 Dec. 5, House concurred in Senate amendments.

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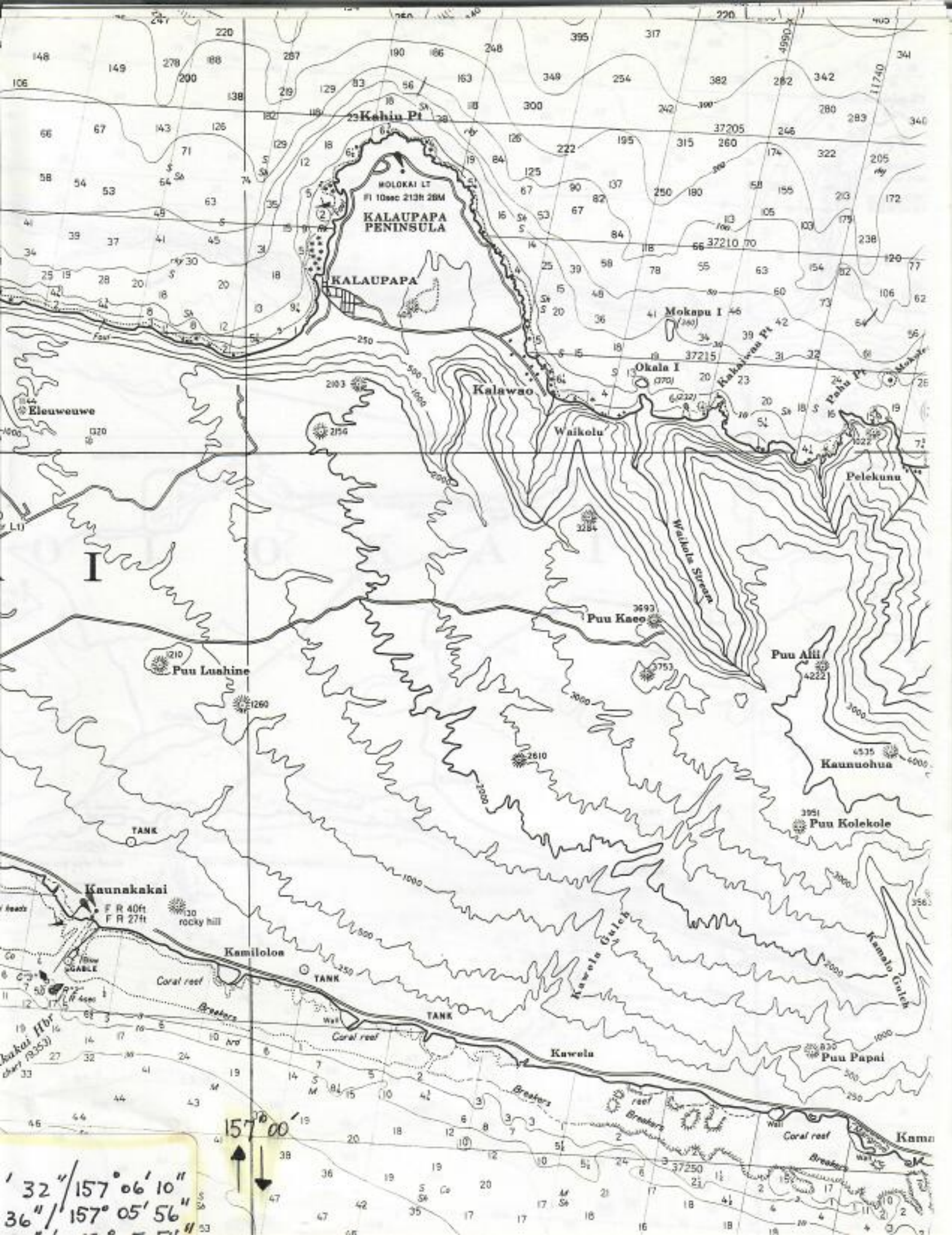




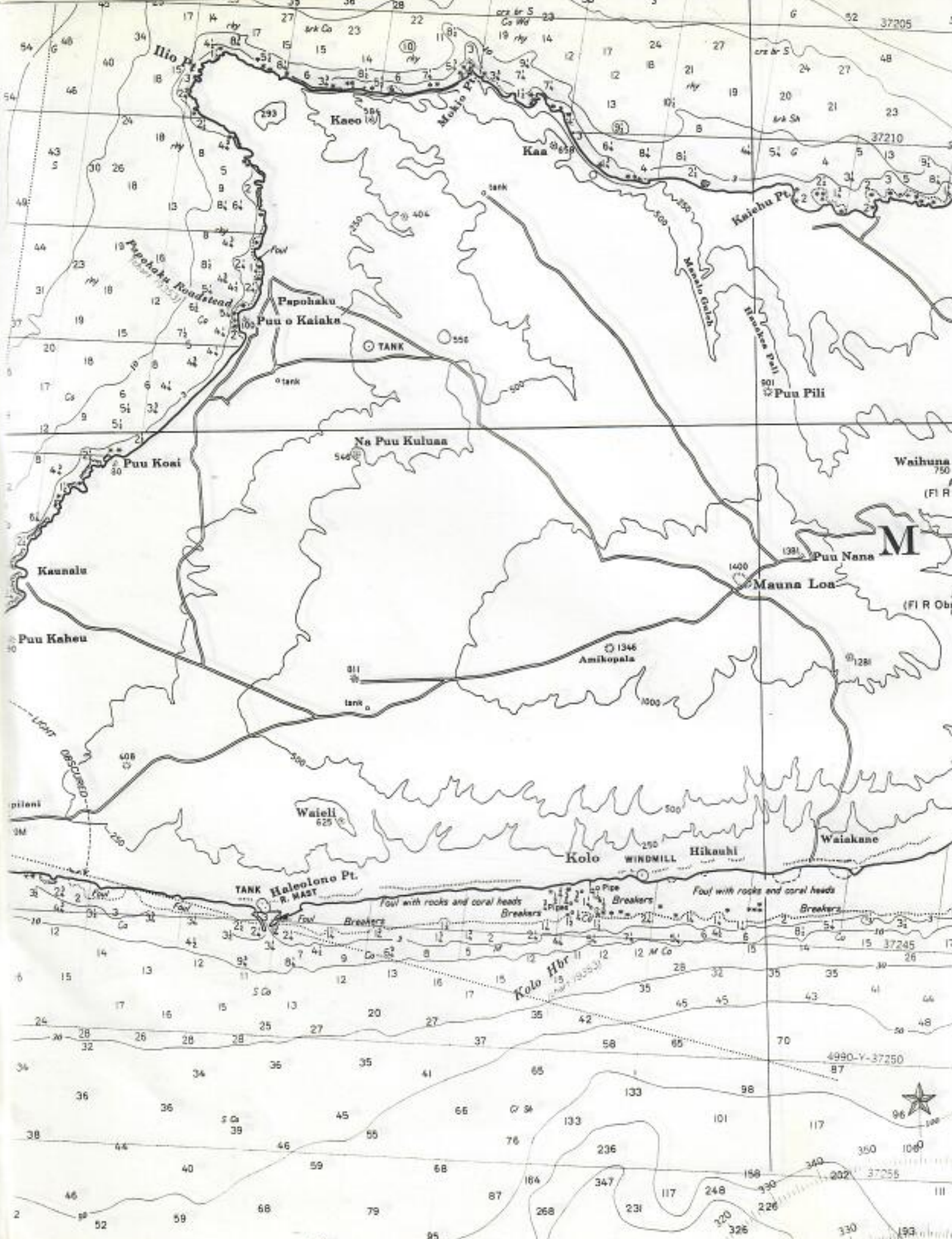
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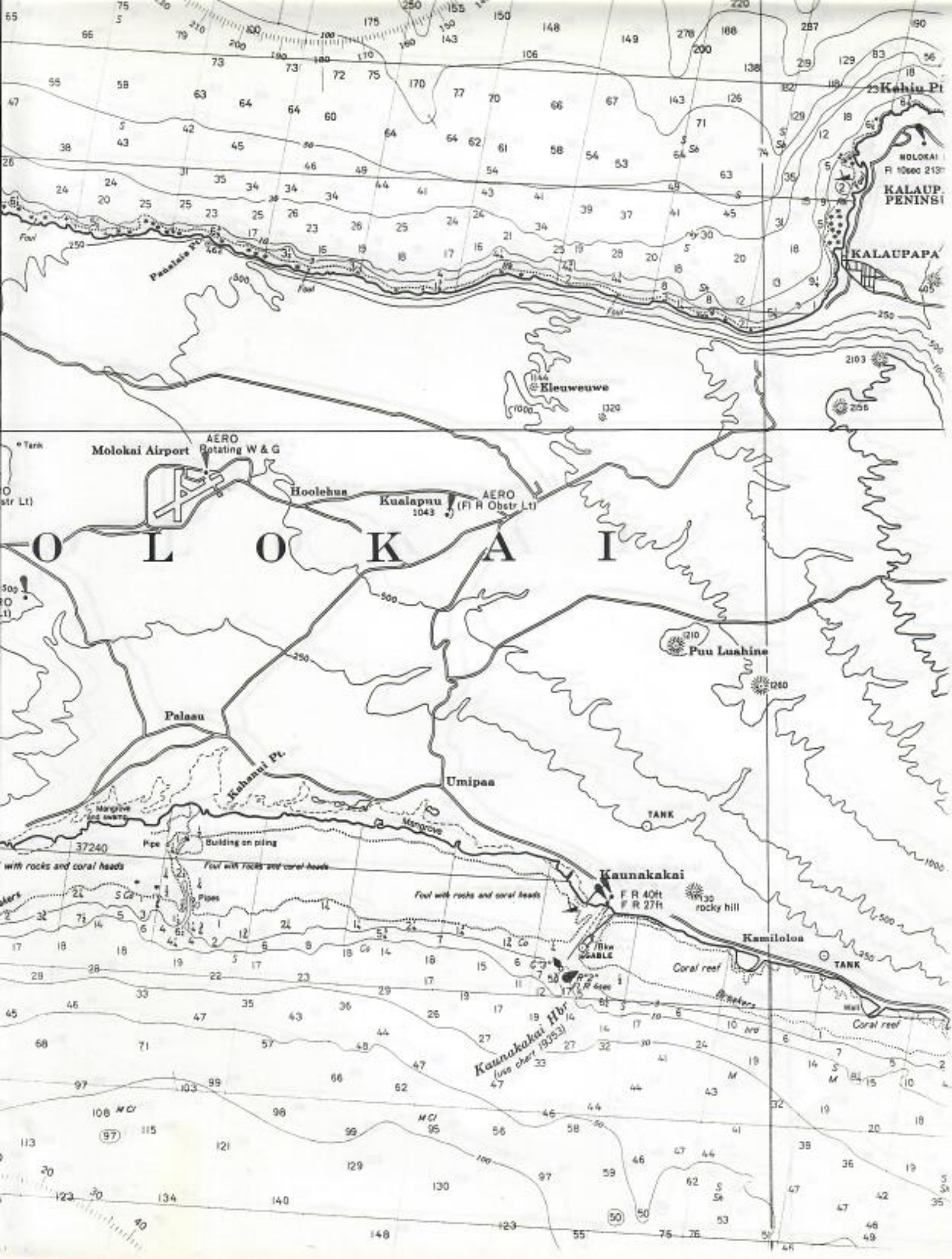
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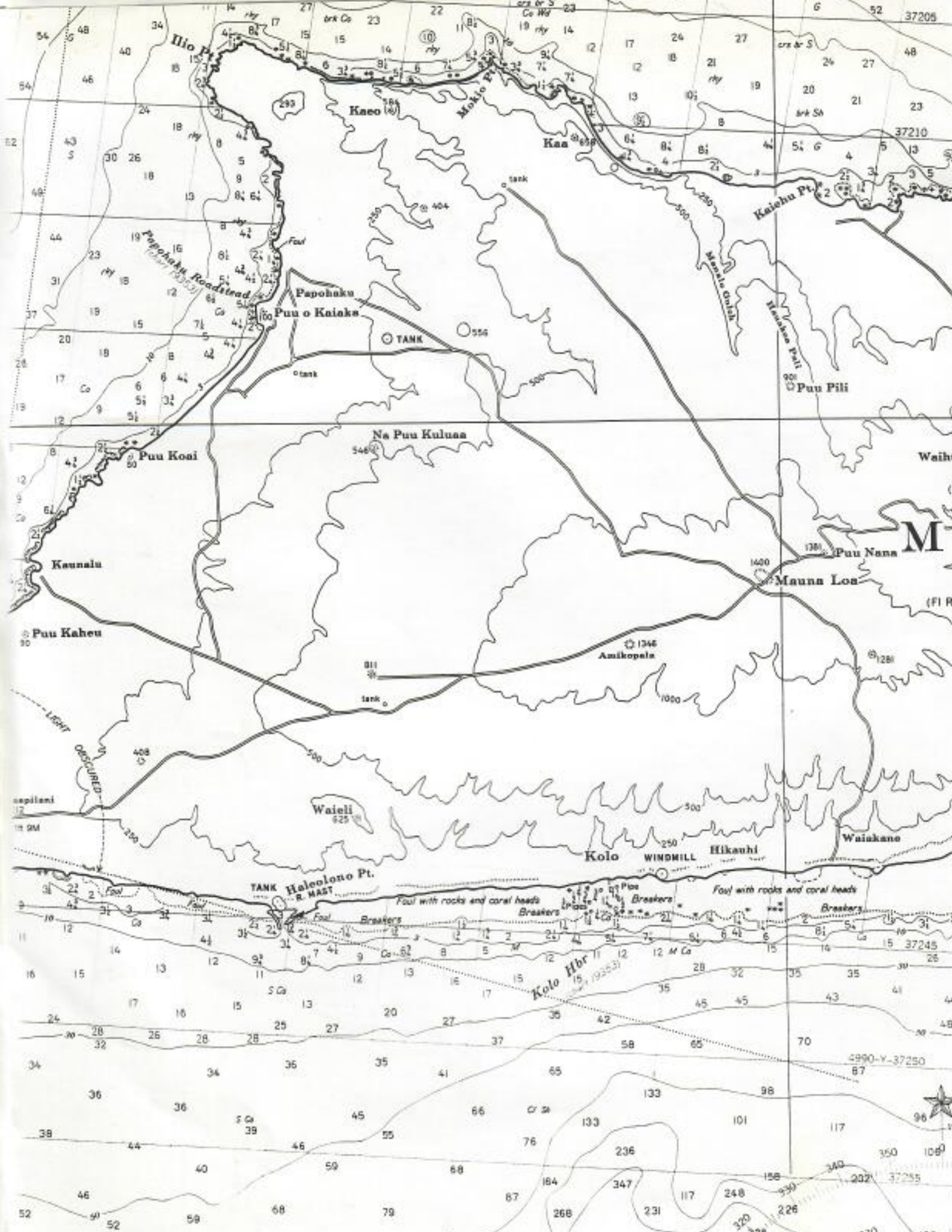


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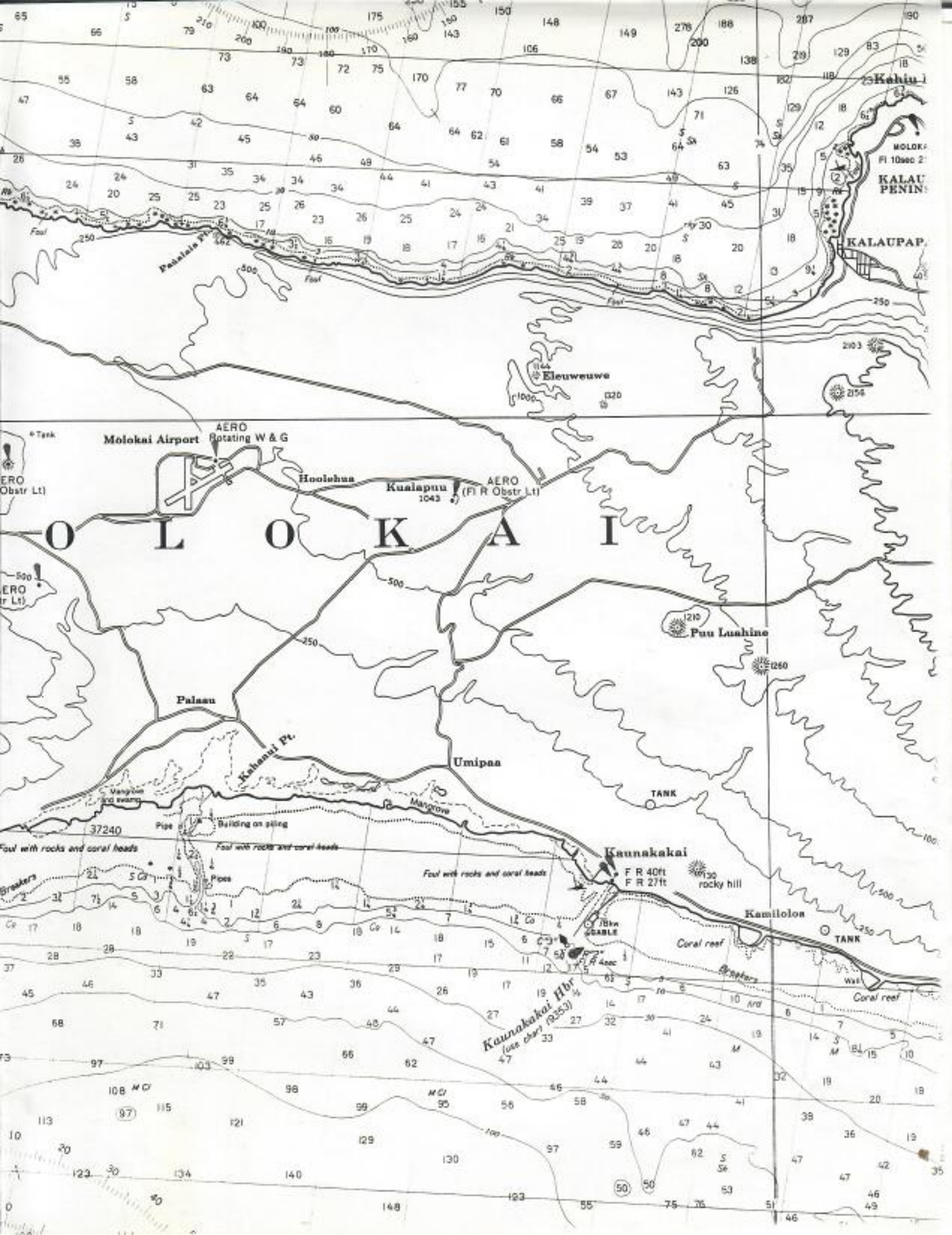
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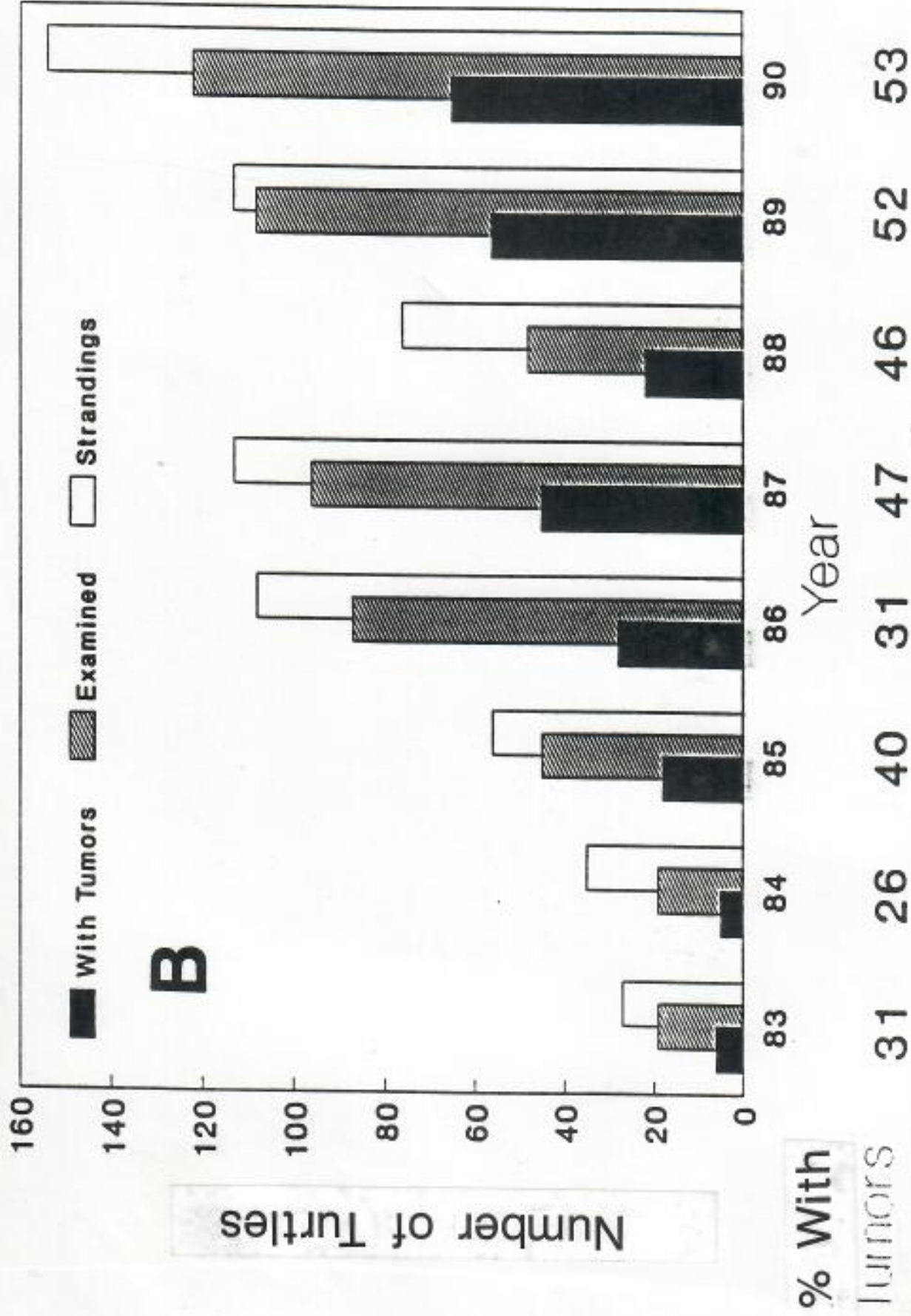
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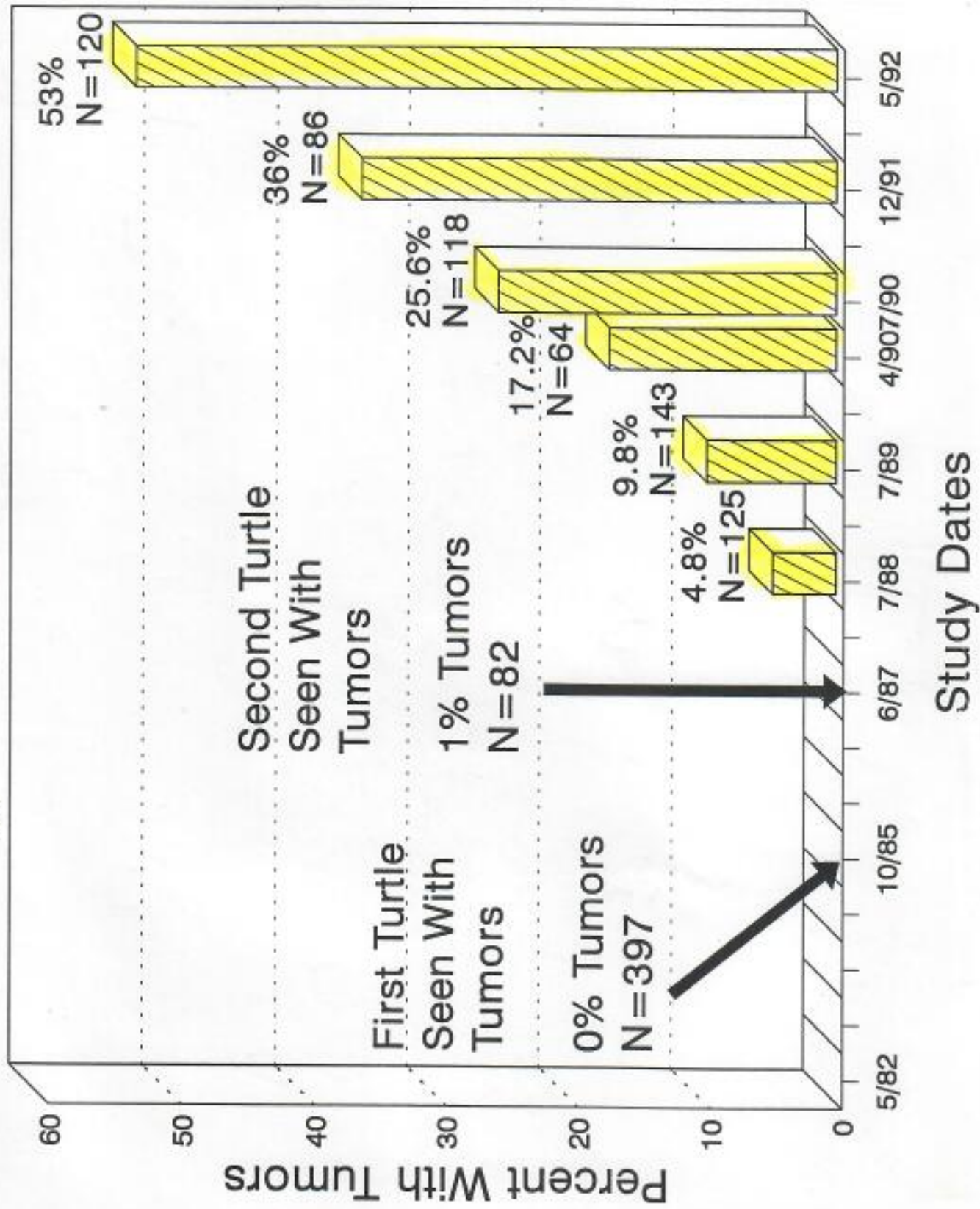


37255





Tumor Incidence in Green Turtles in Nearshore Habitats Along the Southern Coast of Molokai



[11] From: Shawn Koga 10/14/93 2:21PM (1802 bytes: 27 ln)

To: George Balazs

Subject: Turtle nesting on Molokai

----- Forwarded -----

From: George Balazs 10/14/93 2:14PM (1617 bytes: 27 ln)

To: Shawn Koga

Subject: Turtle nesting on Molokai

----- Forwarded with Changes -----

From: Bryan Winton 9/7/93 10:42AM (829 bytes: 16 ln)

To: George Balazs

Subject: Turtle nesting on Molokai

----- Message Contents -----

Rec'd a call just now from a man who witnessed some tracks and digging on the east end of Halawa valley on a no-name beach in Molokai. He noticed the tracks, a pit, and some disturbed vegetation. He never actually saw the turtle. I attempted to explain the nesting process and he was unsure if the turtle would have actually layed eggs or not. He witnessed this late last week and felt obligated to let someone know. His name and address:

Shawn- quite some time ago I mailed this fellow turtle literature and a note telling him of my interest in this report. I sent him turtle sighting cards also. Sometime when you're by yourself back there please call him for me and ask 1) exactly where he saw nesting at Halawa, and 2) has he been there again and seen any fresh signs. Let him know we are sincerely interested in the report and that he contacted us. Ask if he received what I sent him. mahalo.

Steve Eminger
P.O. Box 1237
359 Kikipua Street
Kaunakakai, Molokai, 96748
Molokai Phone #: 553-9039



DEPUTIES

JOHN P. KEPPELER, II
DONA L. HANAKE

AQUACULTURE DEVELOPMENT
PROGRAM
AQUATIC RESOURCES
BOATING AND OCEAN
RECREATION
CONSERVATION AND
ENVIRONMENTAL AFFAIRS
CONSERVATION AND
RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
PROGRAM
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET
HONOLULU, HAWAII 96813

April 16, 1994

Mr. George Balaz
Mr. Bill Gilmarten
National Marine Fisheries Service
2750 Dole Street
Honolulu, HI 96822

Dear Messrs. Balaz and Gilmarten,

SUBJECT: Consultation for the preparation of an Environmental Assessment for Mo'omomi Preserve / Natural Area Partnership

As the first step to preparing an Environmental Assessment, we are consulting with a number of interested agencies and organizations. Please review the attached information on Mo'omomi Preserve which is one of the latest projects recommended for funding under the auspices of the Natural Area Partnership Program (NAPP). I have enclosed background information on both the NAP Program as well as some specifics on the Mo'omomi Project.

Please let us know if you have comments or concerns so that they may be addressed. If we do not hear from you by **May 2, 1994** we will assume that you have no comments at this time.

If you require additional information as to the specifics of the proposed project, please contact Betsy Gagné, Executive Secretary, Natural Area Reserves System Commission, at 587-0063. Thank you for your assistance.

Sincerely,

MICHAEL G. BUCK
Administrator

Enclosures

NATURAL AREA PARTNERSHIP PROGRAM

Revised Preliminary Proposal for Moomomi Preserve

to be used in conjunction with the *Moomomi Preserve Environmental Assessment*

Date: April 16, 1994

Submitted by: The Nature Conservancy of Hawaii
On behalf of: Land owner

Land Owner: The Nature Conservancy of Hawaii
Address: Molokai Preserves Office
P.O. Box 220
Kualapuu, Hawaii 96757

Phone: 553-5236
Contact: Ed Misaki

1. What are the natural resources being managed?

Moomomi Preserve contains the most intact coastal sand dune ecosystem in the main Hawaiian Islands. Six native natural communities are represented in Moomomi Preserve, one of which is considered rare: *Tetramolopium rockii* Coastal Dry Shrubland. To date, seven rare plants have been reported in the preserve, two of which are endemic to western Molokai. Two of the preserve's rare plants are federally listed as endangered and two others are listed as threatened.

Threatened green sea turtles frequent Moomomi and the area adjacent to the preserve. This is also one of the few areas in the main Hawaiian Islands where turtles have nested in recent years. Laysan albatrosses and monk seals also visit the area, and may someday become established at Moomomi.

Moomomi also contains important archaeological sites, including shelter caves, an adze quarry, heiau, and burial sites. Discoveries of prehistoric remains of land birds (some of them now extinct) and terrestrial snails have also been made in the preserve.

2. Where is the project located? How many acres will be managed?

Moomomi Preserve encompasses 921 acres and is located on the northern coast of western Molokai.

3. How will the project be accomplished? Provide details.

The Conservancy established Moomomi Preserve in 1988, and management to date includes fencing to prevent sheep and cattle from straying onto the preserve, public access and interpretive programs, regular beach clean-up projects to reduce hazardous marine debris, seasonal monitoring of sea turtle nesting activity, annual monitoring of native and non-native vegetation, annual monitoring of the axis deer exclosures, assessment of archaeological resources, and road, trail, and gate improvements to minimize vehicle and foot traffic impact on fragile areas within the preserve. These basic programs are carried out by Conservancy staff and volunteers.

Our long-term goals for Moomomi Preserve are to:

- ◇ expand its role as an interpretive and educational resource in Hawaiian ecology and native culture through the involvement of community docents and improved interpretive materials;
- ◇ facilitate the gradual expansion of native-dominated coastal vegetation by controlling the spread of kiawe and other weeds, and monitoring native vegetation dynamics;
- ◇ enhance habitat for rare coastal species, including the rare plants and, if possible, seabirds, sea turtles, and endangered monk seals, which are known to have utilized the area in earlier times and which continue to use the area sporadically;
- ◇ expand preserve programs to include near-shore marine elements, in a context that recognizes the traditional use of the area for subsistence gathering and fishing by the Molokai community.

Our growth to achieve these goals will be gradual. In FY93 we began monitoring studies to understand the dynamics of the native vegetation, the non-native vegetation, and the effects of livestock and deer on the native vegetation. We collect data annually from all of the monitoring systems mentioned above and may adjust our data gathering increments as needed in the future. Our management of the various native (and non-native) systems will be adjusted as we analyze the data. The monitoring systems are designed to guide our management of the preserve. In years 1-4 improved plans for rare species enhancement will be developed, and these plans will be implemented in years 5-10. Also in years 3-10, with cooperation from neighboring land owners, we hope to plan and participate in regional monitoring and management of coastal resources. These programs will be integrated into the Conservancy's upland and windward valley conservation projects (Kamakou and Pelekunu Preserves) on Molokai, pooling resources with these projects for maximum efficiency and offering a unique range of protected habitat types for conservation studies and public enjoyment.

4. Are there any public benefits from this project?

Moomomi provides the general public with a unique opportunity to visit a large, intact native coastal dune ecosystem. For the people of Molokai, especially native Hawaiians, the preserve is an important gathering and cultural site. Within the preserve there is an adze quarry (numerous tool-making sites), burials, and transient house sites that will be safeguarded against disturbance. Fishing and the gathering of marine resources such as sea salt, limu, and shell fish still occur in the area as they did long ago. Native plants such as *binahina* and *kaunaoa* are important for traditional lei making. *The Molokai Community Plan recognizes these values and calls for Moomomi's preservation.*

As the best remaining habitat for several coastal plants and plant community types, Moomomi has great value as a natural repository for unique genetic material and ecological information. Its potential for enhancement of sea turtle, monk seal, and seabird habitat adds further value to the preserve. The Conservancy presently shares these values with the community through guided hikes, a public use program, slide-show talks to school and community groups, and summer internships, which involve Molokai youth in the management of the preserve. Our hope is to expand these programs by working with our newly formed Molokai Advisory Council and the Moomomi Homestead group (*Hui Malama O Moomomi*) to determine appropriate uses and levels of use for the area.

5. Are there any partnerships/other organizations involved? How will they be involved in the project?

A number of community and school groups from Molokai and elsewhere are involved in this project as volunteers, and we expect this involvement to increase as the program expands. These include Boy Scouts, 4-H, fishing clubs, the Sierra Club, school ecology clubs, and classes from Molokai, Oahu, the Big Island, and the mainland. A formal agreement exists with the neighboring land owner (Molokai Ranch) for construction and maintenance of livestock fencing along the preserve boundaries, and shared use of preserve access roads. Burial sites are managed in cooperation with the Historic Preservation Division of DLNR. We cooperate informally with the National Marine Fisheries Service (NMFS) and the State Division of Aquatic Resources (DAR) on sea turtle nesting monitoring. Several of the proposed programs are expected to involve these partners as well.

As mentioned in the previous section (4) we plan to work with the groups and organizations that have interest in this area, particularly *Hui Malama O Moomomi*. We also plan to work with Hawaiian Homes to maintain access through Department of Hawaiian Home Lands property to the preserve.

6. When could the project begin? Provide an approximate timetable for project development for a minimum of 10 years.

Our basic programs have been implemented at Moomomi since the preserve's establishment in 1988. With the support of the Natural Area Partnership program, we expect to carry out the following set of activities:

Year 1 (FY95)

- * Help maintain cattle fences between Molokai Ranch and Moomomi Preserve.
- * Begin removal trials for small, outlying kiawe populations.
- * Collect and do initial evaluation of deer exclosure data.
- * Collect resource monitoring data for all vegetation and rare species.
- * Continue turtle monitoring.
- * Implement basic protection steps for archaeology resources.
- * Continue to develop partnership-based public outreach program.
- * Adjust access pass-key system to compliment management goals of Moomomi region (with *Hui Malama O Moomomi*); continue monthly guided hikes and community presentations; continue internship, summer youth programs, and volunteer programs.
- * Update fire emergency plan.

Year 2 (FY96)

- * Help maintain cattle fences between Molokai Ranch and Moomomi Preserve.
- * Maintain kiawe removal trials, modifying removal technique if necessary.
- * Continue collecting vegetation and rare species data and deer exclosure data.
- * Maintain turtle nesting monitoring; explore possible role of Moomomi site for reestablishment of monk seals.
- * Develop translocation strategy for *Marsilea villosa* and *Sesbania tomentosa*.
- * Conduct basic protection of archaeological resources as needed.
- * Maintain improved public access pass-key system; continue monthly guided hikes and community presentations; continue internship, summer youth programs, and volunteer programs.
- * Continue development of partnership-based public outreach program.
- * Update fire emergency plan.

Years 3-4 (FY97-98)

- * Help maintain cattle fences between Molokai Ranch and Moomomi Preserve.
- * Complete kiawe removal trials.
- * Summarize vegetation and rare species data and deer exclosure data collected in previous years.
- * Develop axis deer management strategy based on results of deer exclosure data.
- * Continue collecting vegetation and rare species data and deer exclosure data.

- * Develop partnership with archaeological agency/museum to do protection work at Moomomi.
- * Develop turtle and monk seal management plans (if necessary) with NMFS, DAR, DOFAW, and USFWS.
- * Assess feasibility of monk seal work at Moomomi.
- * Implement translocation strategy for *Marsilea villosa* and *Sesbania tomentosa*.
- * Maintain basic protection for archaeological resources.
- * Maintain public access facilities, interpretive hikes, volunteer and internship programs; refine public outreach partnership program.
- * Update fire emergency plan.

Years 5-10 (FY99-2003)

- * Help maintain cattle fences between Molokai Ranch and Moomomi Preserve.
- * Continue kiawe control tasks and develop strategy for revegetating large kiawe stands with native plants.
- * Continue axis deer management.
- * Implement strategy for turtle and monk seal reestablishment as appropriate.
- * Assess feasibility of reintroducing Laysan albatrosses to Moomomi.
- * Maintain translocation strategy for *Marsilea villosa* and *Sesbania tomentosa*.
- * Continue partnership with agency/museum to protect archaeological resources.
- * Revise preserve brochure to include descriptions of archaeological, cultural, and paleontological resources.
- * Maintain public access facilities, interpretive hikes, volunteer and internship programs; refine public outreach partnership program.
- * Update long-range management and fire emergency plans.

7. Why does this project need funding?

Moomomi Preserve is one of the last remaining intact dune ecosystems within the state of Hawaii. Moomomi also contains several important archaeological sites. Funding provided by the Natural Area Partnership program would allow The Nature Conservancy to enhance existing efforts to protect the natural and archaeological resources found at Moomomi Preserve.

The Nature Conservancy currently manages more than 20,900 acres in the state. There are many more natural areas in Hawaii worthy of protection, and there are many land owners who may be willing to dedicate their lands to conservation. However, the Conservancy cannot take on the additional financial burden of managing these lands, while continuing to meet the management challenges of existing protected areas, without assistance from the NAP program.

Mail Buoy



Dear Chuck,

You probably know by now that a modified version of the Moloka'i "subsistence" fishing zone has successfully worked its way through the Legislature, now only awaits the governor's signature to make official.

At this point, I don't know if the recreational fishermen can get their act together soon enough to protect their interests. (Where were they while this issue was being debated in the Legislature?) It promises to be an interesting next couple of months!

Moloka'i Fisherman

H.B. 3446, H.D. 2, S.D. 2 A BILL FOR AN ACT

Relating to subsistence fishing.

Be it enacted by the Legislature of the state of Hawaii:

SECTION 1. Chapter 188, Hawaii Revised Statutes, is amended by adding a new section to be appropriately designated and to read as follows:

§188-Designation of community based subsistence fishing area.

(a) The Department of Land and Natural Resources may designate community based subsistence fishing areas and carry out fishery management strategies for such areas through administrative rules adopted pursuant to Chapter 91 for the purpose of reaffirming and protecting fishing practices customarily and traditionally exercised for purposes of native Hawaiian subsistence, culture and religion.

(b) Proposals may be submitted to the Department of Land and Natural Resources for the department's consideration. The proposal shall include:

- (1) The name of the organization or group submitting the proposal;
- (2) The charter of the organization or group.



... SO WHAT'S IT GOING TO BE?

SECTION 3. The pilot project shall cease to function on July 1, 1997.

SECTION 4. New statutory material is included in SECTION 1.

SECTION 5. This act shall take effect upon its approval; provided that the pilot project shall not take effect until the Department of Land and Natural Resources adopts rules for the pilot project.

Honorable Norman Mizuguchi
President of the Senate
Seventeenth State Legislature
Regular Session of 1994
State of Hawaii

(3) Clarify that subsistence fishing shall only include direct personal or family consumption or sharing;

(4) Remove the distance from shore to sea so that the department may determine the appropriate distance through rules adopted pursuant to Chapter 91, Hawaii Revised Statutes;

(5) Delete reference to the organization assigned to act as the steward of the pilot project;

(6) Provide for continuation of fishing by commercial fishermen. Your committee realizes that the livelihood of commercial fishermen may be adversely affected if they are restricted in their fishing areas, and every effort should be made to incorporate their concerns;

Sir:

Regarding H.R. 3446 H.D. 2 S.D. 1

(3) A list of the officers of the organization or group;

(4) A description of the location and boundaries of the marine waters and submerged lands proposed for designation;

(5) Justification for the proposed designation including the extent to which the proposed activities in the fishing area may interfere with the use of the marine waters for navigation, fishing and public recreation; and

(6) A management plan containing a description of the specific activities to be conducted in the fishing area, evaluation and monitoring processes, methods of funding and enforcement, and other information necessary to advance the proposal.

Proposals shall meet community based subsistence needs and judicious fishery conservation and management practices.

(0) For the purpose of this section:

(1) "Native Hawaiian" means any descendant of the races inhabiting the Hawaiian Islands prior to 1778; and "subsistence" means the customary and traditional native Hawaiian uses of renewable ocean resources for direct personal or family consumption or sharing.

SECTION 2. The department shall establish a subsistence fishing pilot demonstration project for the fisheries adjacent to the coastline between Nihoa Islands on the east to 'Ilio Point on the west on the island of Moloka'i. The Department of Land and Natural Resources shall adopt rules pursuant to Chapter 91 to delineate the offshore boundaries of the project area. In implementing this project, the department:

(1) Shall protect and allow the continuation of all existing commercial fishing activities in the project area;

(2) May allow non-native Hawaiians to continue existing recreational fishing activities;

(3) Shall adopt rules pursuant to Chapter 91 to implement the purpose and intent of this project by June 30, 1995, and

(4) Shall file a status report on this pilot project no later than 20 days prior to the convening of the regular session of 1997.

committee on Ways and Means to which was referred H.B. 3446, H.D. 2, S.D. 1 entitled "A Bill for an Act Relating to Subsistence Fishing," begs leave to report as follows:

The purpose of this bill is to authorize the Department of Land and Natural Resources to establish a subsistence fishing pilot demonstration project on Moloka'i, adopt rules designating community-based subsistence fishing areas, and implement fishery management strategies in these areas.

Many people in Hawai'i enjoy and benefit from the state's fisheries. However, population increases, modern fishing materials and tools, pollution, and perhaps even global warming contribute to diminished ocean life. Therefore, your committee is seeking ways to preserve the remaining resources before there is a substantial diminution of resources. Your committee would like to provide native Hawaiians with an opportunity to educate and perhaps guide Hawai'i and the world in fishery conservation.

Your committee recognizes that Hawaiians were great fishermen and established the kapu system to preserve the ocean's resources. Also, land and ocean divisions through *ahupua'a* system and *konoiki* rights were established to allow caretakers to protect the lands and waters of the *ali'i*.

Your committee also recognizes that native Hawaiian practices did not provide free and clear access to resources, nor allow resources to be taken freely. Certain species such as *moi* were reserved exclusively for the *ali'i* class. If a commoner consumed these restricted fish species, the kapu system provided for severe punishment-involving death. Also, the *ahupua'a* system did not provide free and clear access. An individual had to seek permission from the caretaker of the *ahupua'a* to gather resources. It is with these considerations that your committee would like to provide an opportunity for subsistence fishing.

Your committee has amended this bill to:

(1) Clarify that native Hawaiians engaged in traditional and customary fishing practices, not rights;

(2) Require that the organization or group submitting a proposal to the Department of Land and Natural Resources submit their name, charter, and a list of its members;

wallians into the pilot program because there may be individuals who have fished the area for many years who are not of Hawaiian ancestry;

(8) Add a termination date to the pilot project; and

(9) Require the Department of Land and Natural Resources to adopt rules pursuant to Chapter 91, Hawaii Revised Statutes, prior to commencement of the pilot project.

Your committee has received information that there is a federal proposal to provide funding for support of a native Hawaiian fisheries program. It is not your committee's intent to provide any native Hawaiian group or organization with an unfair advantage if these funds become available. Also, your committee hopes that federal monies may be utilized to defray enforcement costs of the pilot project.

It is your committee's intent that when the Department of Land and Natural Resources adopts its rules, there be included a provision that allows the residents of Kalaupapa to continue fishing in areas which may fall within the pilot project. It is not your committee's intent to interfere with laws in effect that deal with Kalawao County.

Your committee would also like to emphasize that the pilot project should not be expanded or made permanent until a careful evaluation is reported to the Legislature.

Your committee on Ways and Means is in accord with the intent and purpose of H.B. 3446, H.D. 2, S.D. 1, as amended herein, and recommends that it pass Third Reading in the form attached hereto as H.B. 3446, H.D. 2, S.D. 2.

Respectfully submitted,

Donna R. Ikeda, Chair

Gerald T. Magino, Vice Chair

Lehua Fernandes Salling

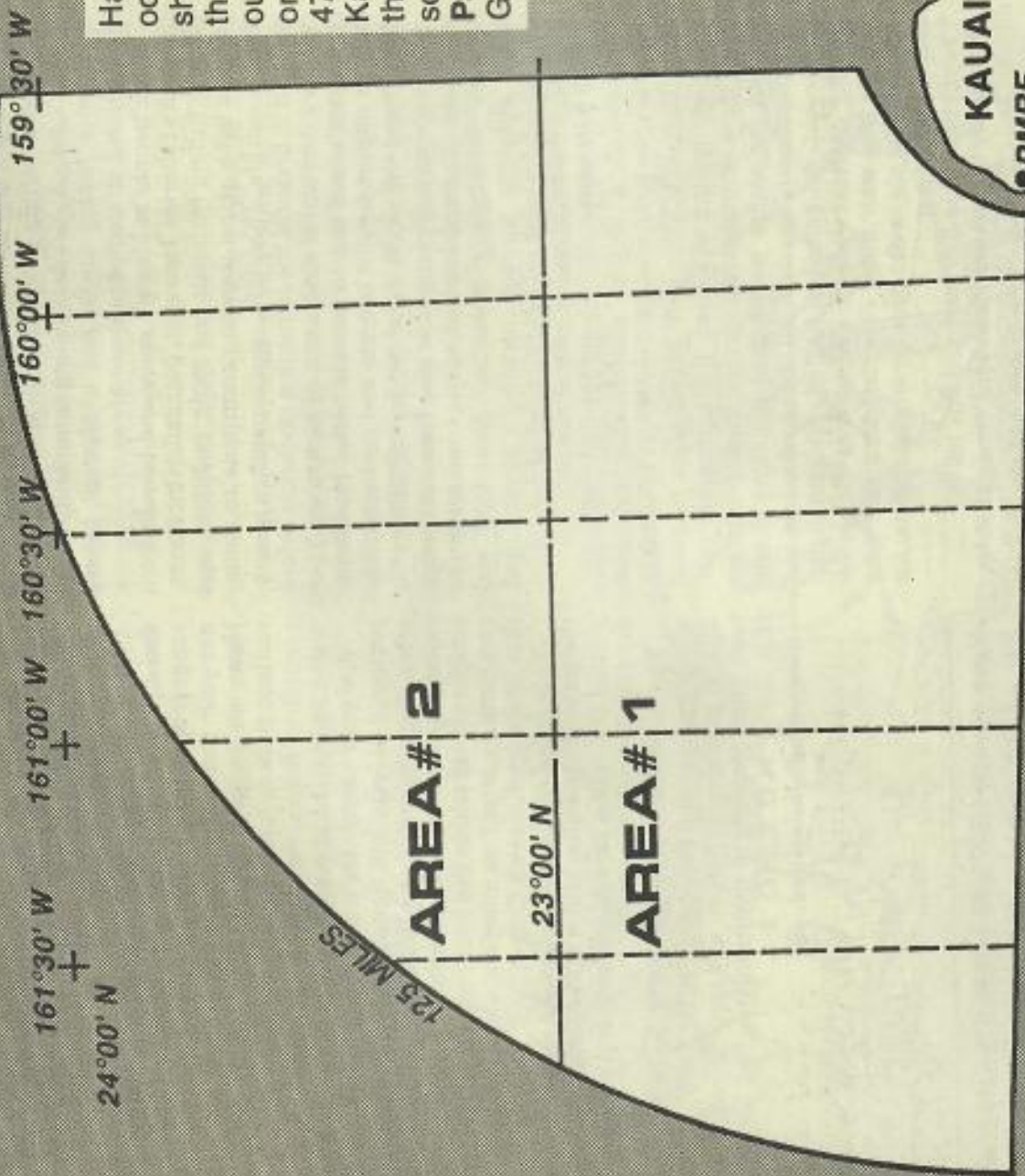
Carol Fukunaga

Milton Holt

Next month HFN will publish a selected list of the marine, boating and fishing related bills that were passed during the 1994 legislature and how each senator and representative voted on each act.

PACIFIC MISSILE RANGE FACILITY OPERATIONAL TRAINING AREA

(BARKING SANDS KAUA'I)



Hazardous Military Operations are occasionally conducted in the areas shown on this chart. Notice concerning these operations is mailed to boaters on our mailing list. For further information, or to be placed on our mailing list call 471-6301 from O'ahu or 335-4301 from Kaua'i. If you are planning on entering these areas please call for the status of scheduled operations, or contact the Pacific Missile Range Facility on Coast Guard Channel 16, Channel 6 or CB22.



Molokai's subsistence reef

Study urges better use of resources

By Edwin Tanji

Advertiser Maui County Bureau

HOOLEHUA, Molokai — The fish, shellfish and limu gathered from the ocean are an essential part of a Molokai Hawaiian's daily diet, Hoolehua homesteader Kelson "Mac" Poepoe said.

"It is a necessity. It is the food for our table," he said.

A realization that the ocean resources were overtaxed led Poepoe, Wade Lee and other Molokai fishermen to take stock of their own behavior.

"Me, I'm to blame as much as anybody else," said Lee, a social worker with Alu Like.

"I've got 50 feet of gill net in the garage. It's going to stay there now," Lee said.

Gill nets that are set overnight are considered particularly wasteful since the nets do not discriminate on what they catch and kill. Fish that are too small or not edible can be killed along with fish that are wanted.

The concern over dwindling numbers of fish, opihi, crabs and limu led to creation in February 1993 of the Molokai Subsistence Task Force, a state-sponsored study of how Molokai families use the natural resources of the island.

Completed in June, the task force study found that 38 percent of the Hawaiian families surveyed depended on hunting, fishing and gathering to feed themselves.

Of the 250 Molokai families interviewed in a survey, about half had annual incomes of less than \$20,000. The low income levels "has implications for purchasing power, diet, recreation, and family and community dynamics," a task force report said.

For the families, fishing,

hunting and gathering are a form of recreation and family socialization, the report said. The use of fresh fish and limu are a factor in maintaining healthy diets, it said.

But there is waste, the study found.

"Before, the ocean was the 'icebox' and one only gathered enough for the 'ohana and close neighbors and kupuna to eat," the study said. "Now, subsistence practitioners gather more than what their family can immediately eat and the surplus is stored in freezers."

Some people are not trained in appropriate methods — pulling limu out by the roots rather than plucking it and leaving stems to regenerate, the study said.

Responding to the task force findings, the Legislature set up a law for "community-based subsistence fishing" in which an area may be designated for subsistence fishing with a management plan for appropriate practices in the area.

Poepoe, Lee and others on Molokai are setting up a pilot program for Moomomi on the Molokai north shore.

They expect to control fishing methods in the management zone, Poepoe said.

"We don't like using gill nets. You just catch enough to eat. You don't break the coral. No overfishing," he said.

"We're starting to let people know now that this is going to be happening. Starting now, they are going to be making sacrifices," he said.

Lee and Poepoe both referred to Hawaiian traditions such as seasonal *kapu* (bans) on certain kinds of fish. A key conflict will involve maintaining subsistence fishing in the face of pressure from commercial fishermen.

In Kaunakakai, the new Molokai Ice House is geared to assisting commercial fishermen increase their catch with ice to help keep it fresh.

Not a problem, Lee said. Most of the commercial fishing involves deep-sea fish such as

aku, ahi and mahimahi, not the smaller fishes found in the reefs along the rocky coastline around Moomomi.

If it's a reef fish — kumu, manini, kole, kala — it's for subsistence only, he said.

"No commercial fishing. No selling fish," Lee said. "The only fish that they can sell will be pelagic fish — aku, ulua, the fish that don't live on the reef. They cannot catch and sell the ones that live there."

"All the brothers who fish down there are going to be teaching their kids how to fish the right way," he said.

fishermen take stock



Wade Lee (left) and Kaipō Poe-poe, nephew of Hoolehua homesteader Kelson Poe-poe, do some shore fishing at Mo'omomi, Molokai.

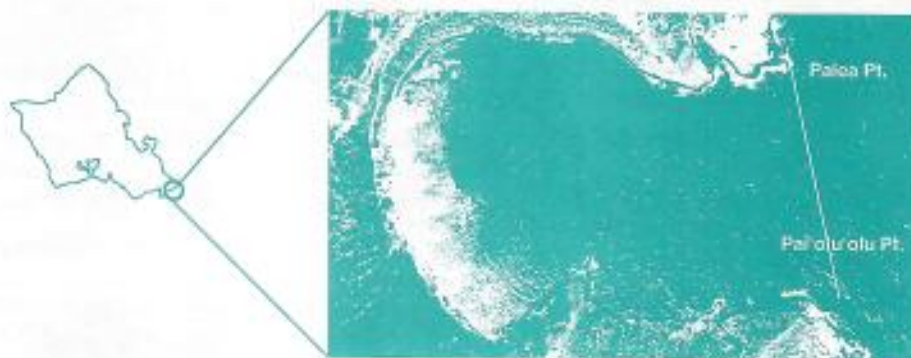


Whose ocean is it? Management strategies in Hawai'i (Part 3 of 3: Marine Life Conservation Districts)

by Scott MacMillan

Given the strength of the emotional, economic, and cultural attachments that connect many people in Hawai'i to the ocean, it is not surprising that discussions about ocean management in our state have often been invested with an intensity and passion rarely seen in debates about other environmental issues. The State of Hawai'i Marine Life Conservation District (MLCD) Program has been praised by some as an important tool for furthering marine education and restoring fish populations, and reviled by others as a program of inadequate and antiquated "half-measures" that emphasize public accessibility at the expense of conservation. Underlying much of the controversy surrounding MLCDs is an uncertainty about what the exact goals of the program should be, and the problems of trying to conserve a resource while allowing its continued use.

The Division of Aquatic Resources (DAR) of the Department of Land and Natural Resources (DLNR) is responsible for managing Hawai'i's 10 MLCDs. The DAR generally sets specific rules and regulations for each area, with the purpose of limiting consumptive use by the public. For example, at Hanauma Bay, Hawai'i's first MLCD established in 1967, fishing and boating are prohibited. At the Mānele-Hulopo'e MLCD on Lāna'i, however, hook-and-line fishing for finfish is permitted from the shoreline of one area, while fishing by any legal method except spear, trap, or net (other than thrownet) is allowed in another part of the MLCD. All MLCDs forbid the



One of the most popular MLCDs, Hanauma Bay, on the island of O'ahu.

alteration of geological features, such as the taking of sand and coral.

Most experts agree that these fishing restrictions have been successful at increasing certain fish populations. "MLCDs limit fishing pressure on species that are sedentary as adults. This gives them a greater opportunity to reproduce," said Dr. Richard Brock, Sea Grant researcher and fisheries specialist. "Most MLCDs are fairly small, however, and many valuable species that are threatened by overfishing have movement patterns that are too large to be feasibly included into a MLCD.

"Everyone can benefit from this kind of program. Those concerned about conservation might appreciate the effectiveness of MLCDs at increasing fish populations. Commercial and recreational fishermen might also view this program positively, since it provides many species of fish with an area where they can reproduce away from fishing pressures. This increases the likelihood that fishermen will make a catch elsewhere, as fish that recruit to MLCDs

as juveniles will grow and frequently move to other areas," said Brock.

Don Heacock, Kaua'i District aquatic biologist for the DAR, also believes that the restrictions on fishing in MLCDs have helped fish populations in these areas grow dramatically. "MLCDs are important in that they create breeding reserves for many species of fish. When fishing effort is restricted in certain places, it often creates incredible educational and research opportunities," said Heacock.

Heacock believes the MLCD program could be improved by changing some of the regulations that govern their

(Continued on page 2)

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Whose ocean is it? (Continued from page 1)

activities. "We need to have laws and rules that are meaningful," said Heacock. "The majority of the size limits in our state are not based on biological realities, and they often allow the catching of sexually immature fish before these animals have been given the chance to reproduce."

"Some of the rules at MLCDs are also unenforceable," said Heacock. "For example, spearfishing with scuba is prohibited at the Pūpūkea MLCD. However, scuba divers who fish outside the district are still allowed to swim through the area with their catch. This essentially makes the rule against fishing with scuba at Pūpūkea unenforceable, because it would require an agent to follow each and every diver out into the water in order to determine where their fish was caught."

Other individuals have criticized the state for its lack of foresight in preventing some of the problems caused by overuse, especially at popular MLCDs like Hanauma Bay and Molokini. For nearly a decade after the Molokini Shoal MLCD was established, hundreds of anchorings occurred directly on living reef at the site each year, reducing coral heads to rubble. At the behest of commercial dive companies and other members of The Ocean Recreation Council of Hawaii (TORCH), several experimental

permanent moorings were installed at Molokini five years ago. TORCH and the DAR are currently seeking to expand the use of these devices at Molokini and other sites.

"This program has been somewhat successful in reducing anchor damage, however, boats still outnumber moorings at the site, and anchor damage continues to be a problem of overuse," said Skippy Hau, Maui District aquatic biologist for the DAR.

"Many of the same management questions we are now facing should have been addressed 10 or 15 years ago, when the problems at Molokini were first identified. However, it takes foresight in management to predict the future impacts of human activities on an area," said Hau.

The DAR and the Division of Boating and Ocean Recreation are currently in the process of amending the rules for Molokini MLCD, and have proposed limiting the number of boats that can moor at the island, as well as banning fish feeding, and prohibiting all anchoring after a new day-use mooring system is installed.

Some individuals believe that the current management priorities of the MLCD program are misguided.

"These areas have essentially been managed like marine parks," said Paul

Kawamoto, manager of the aquatic biology program at the DAR. "MLCDs are there for people to enjoy, and non-consumptive activities have generally been encouraged. Yet, it is also important that we try to save and preserve what is unique to each area."

Not everyone agrees with this "marine park" style of management, however, as it impacts the way in which potential MLCD sites are evaluated. "In addition to other criteria such as the ability of an area to support an increased fish population, and the existence of well-defined boundaries to aid in enforcement, it is important that MLCDs have shoreline access and are safe for the public. Remote areas are often self-regulating, and therefore MLCDs are not needed to protect these resources," said Kawamoto.

Casey Jarman, an associate professor of law at the University of Hawai'i, disagrees. "The DLNR erroneously manages MLCDs like parks, and not conservation areas. I feel that this policy is inconsistent with the wording of the statute allowing the DLNR to establish MLCDs," said Jarman, who unsuccessfully tried to have the waters off Kīlauea Point on Kaua'i designated as a MLCD. "Unlike Hanauma Bay, Kīlauea Point didn't offer sufficiently safe recreational opportunities for the public. There's no easy beach access, no abundant parking, and no public restrooms. Of course all of this makes little difference to the endangered monk seals, sea turtles, and other animals that live there and need protection."

The future of the MLCD program is somewhat murky. "Any time you threaten to restrict fishing, people become alarmed. Nobody wants to be told they can't fish in an area if they have fished there in the past, and future moves by the state to establish new MLCDs will undoubtedly be looked upon with suspicion," said Brock.

Future discussions about establishing new MLCDs will also have to involve the issue of Native Hawaiian fishing rights.

On November 17, the DLNR scheduled a public meeting to discuss the

(Continued on page 4)

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Community involvement in the management and protection of coral reef ecosystems in Hawai'i

by Kim Des Rochers

“There’s three kinds of fishermen, commercial, recreational, and subsistence,” said Wayne Lee, a member of Hui Malāma O Mo‘omomi, an organization working with the state Department of Land and Natural Resources to designate the area around Mo‘omomi, Moloka‘i for subsistence use only. “The commercial fishermen catches as many fish as he can; the recreational fisherman catches the biggest fish he can; but the subsistence fisherman takes only what he needs.”

This conservation and resource management ethic was the theme of a one-day workshop titled, *Community Involvement in the Management and Protection of Coral Reef Ecosystems in Hawai‘i*, sponsored by the Sierra Club Legal Defense Fund, Greenpeace Pacific Campaign, and Life of the Land. The purpose of the November 10 workshop was to examine the current status of Hawai‘i’s coral reef ecosystems and to develop community-based management strategies for their protection. Much of the focus of the workshop was on Moloka‘i, where community management of natural resources is experiencing a resurgence.

Dr. Robert Johannes, fisheries biologist and keynote speaker at the workshop, reported that Hawaiians recognized early on that marine resources were limited and easily depleted and so devised a variety of strategies to ensure a plentiful supply of fish and other organisms for future generations. In general, fishing rights to any given ahupua‘a (a land division that extends from the mountain top to the sea) were controlled by a chief or family who regulated the harvesting of their marine resources. It was, therefore, in the interest

of the controller (konohiki) to harvest a given area in moderation. The controls and restrictions imposed by the konohiki included closed seasons during periods of spawning, bans, or restrictions on the removal of certain species of fish and shellfish, the closing of a particular fishing area, and the avoidance of certain

the face of increasing competition from neighbor-island fishermen and new residents, there is a growing feeling that if you don’t take everything when you see it, then someone else will. Now, instead of taking what’s needed, more is being harvested and sometimes wasted.

Some fishermen, such as those of Mo‘omomi, however, still adhere to the traditional code of reef tenure. “We use modern fishing gear but we still have traditional values regarding reefs and fishing,” said Lee.

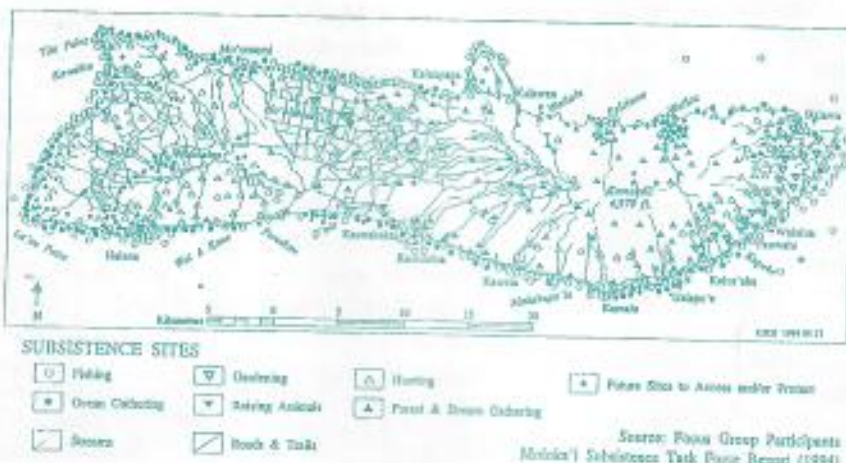
In February 1993, in response to requests from Moloka‘i residents, Governor Waihee appointed the Moloka‘i Subsistence Task Force to document how important subsistence is

to Moloka‘i families and to determine how much of a household’s food supply comes from subsistence fishing and gathering activities. The task force was also asked to determine the problems that make it difficult to practice subsistence activities.

Mo‘omomi, located on the northwest shore of Moloka‘i, is Hawaiian Homestead land and home to approximately 1,000 Hawaiians who live a subsistence lifestyle planting taro, raising pigs and chickens, and fishing. Mo‘omomi has historically been regarded as an important area for traditional fishing and gathering. Access to the rocky shoreline around Mo‘omomi is either through homestead land or by boat during periods of calm seas.

With the advent of outboard motors, Mo‘omomi has become more accessible and the state’s policy of open fishing has led to an influx of neighbor-island fishermen who often are insensitive to the needs of local people and are disrespectful of the resources.

(Continued on page 4)



marine organisms according to an individual’s class or sex. These bans and restrictions, which were often in the form of magical and religious taboos, were enforced by strict fines and punishment.

In 1851, three years after the Great Mahele, however, all waters adjacent to government lands were designated as open and accessible to the general public. According to Paul Nahoia Lucas, an attorney with the Native Hawaiian Legal Corporation and a panelist at the workshop, “With the dismantling of the traditional political and social system came a loss of controls and regulations over resources.” Johannes added, “Colonial governments didn’t recognize the benefits and purposes of customary marine tenure practices. In fact, in 1935, the governor general of Hawai‘i called the Hawaiian system of marine tenure ‘un-American.’”

These attitudes on the part of the colonial government resulted in the breakdown of subsistence and conservation practices that had previously been passed down from generation to generation. Lee said that in

Community involvement in the management and protection of coral reef ecosystems in Hawai'i (Continued from page 3)

Traditional practices, which dictate that only mature resources be gathered and that reproductive cycles be respected, are not always honored by newcomers. Now, juvenile marine life are being harvested; fish, squid, and lobsters are being harvested during their spawning seasons when they congregate near shore and, thus, easier to catch; gill nets are indiscriminately trapping any marine life, and some areas are now fished out. In 1993, all 'opihi from Kalaupapa to Hālawā were wiped out in a period of seven days; 'opihi on the west end of Moloka'i have likewise been overharvested.

"I get kind of sick because of what I see. All these guys damaging the ocean," said Mac Poepoe of Hui Mālama O Mo'omomi and co-chair of the governor's Moloka'i Subsistence Task Force. "It's right in front of our eyes. Things are disappearing. It's our responsibility to take care of our areas. Mo'omomi will set an example."

An inherent aspect of subsistence fishing and gathering is the practice of conservation. Subsistence gathering practices naturally teach the value of sharing and not taking too much, and provide a more holistic perspective of organisms and their ecosystems, emphasizing both balance and coexistence.

The younger generation on Moloka'i faced with new challenges and problems associated with tourism,

commercialism, and residents and visitors who sometimes are ignorant of Hawaiian subsistence values. Because traditional laws have been weakened by colonial powers and religions, colonial laws are now needed to assist in the protection of reef resources. Unfortunately, as Denise Antolini, managing attorney for the Sierra Club Legal Defense Fund stated, "There is no law specifically aimed at protecting coral reefs in Hawai'i. There is a real need for state legislation because the existing laws are insufficient to protect reefs."

The best approach may be one that combines government regulation with community management. This was stressed by Johannes. "You cannot rely on governments to manage and protect coral reef ecosystems. It must be done at the community level," he said. "The best situation for the management and conservation of coral reef resources in Hawai'i would be a harmonious blend of local participation with assistance from scientists."

Walter Ritte, an activist and Moloka'i coordinator for the Department of Business, Economic Development & Tourism agreed on the need for cooperation and for legislation but emphasized that, "We're [Moloka'i residents] not going to depend on the CWA [Clean Water Act] or the EPA [Environmental Protection Agency] to protect our marine resources. We're going to depend on our customary tenure practices." ←

Whose ocean is it? (Continued from page 2)

possibility of designating the waters between Barbers Point Deep-Draft Harbor and the Kahe Point Beach Park a MLCD. This measure was strongly opposed by Native Hawaiians and other members of the Wai'anac community, who have fished in the area for generations. "Native Hawaiians will resist against attempts to regulate their traditional fishing grounds," said Paul Lucas, an attorney for the Native Hawaiian Legal Corporation. There needs

to be a balance between preserving a resource and the continuation of traditional subsistence practices.

"True subsistence ethics are consistent with preserving these resources, and we need to discard paternalistic notions that Native Hawaiians cannot manage these resources themselves," said Lucas.

"The MLCD program has generally been a good one, and we probably need more of them, with larger areas. Perhaps

Moloka'i Subsistence Task Force

According to a survey conducted by the Moloka'i Subsistence Task Force, 38% of Moloka'i's Hawaiian population acquires its food through subsistence activities. According to the report, "Without subsistence as a major means for providing food, Moloka'i families would be in a dire situation."

Subsistence activities such as fishing, gathering, and hunting provide Moloka'i families with a way to compensate for low incomes and a means for obtaining food items that may be extremely costly under a cash economy. The marine organisms harvested by subsistence methods are used for a variety of occasions that bond families and community members together. For example, limu, 'opihi, and fish are typically reserved for birthdays, graduation, and holiday celebrations.

The Moloka'i Subsistence Task Force identified three major problems associated with subsistence activities: 1) neighbor-islanders and new residents who over-harvest marine and other natural resources; 2) taking undersized species; and 3) lack of access to fishing, hunting, and gathering areas.

Some of the proposed recommendations addressing these concerns included: educating people on the purpose of conserving resources; setting up stewardship councils that would manage local resources and educate people on proper harvesting techniques; and working with private landowners to open access for traditional Hawaiian fishing and gathering practices. ←

some of these areas should be easily accessible to the public, like Hanauma Bay, and others should be established in more remote areas where they could act as breeding preserves," said Brock.

Heacock agrees with this sentiment. "Despite the program's many problems, I believe that it is good, and we should keep trying to make it better." ←

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"What will the future be like?"

A new SOEST lecture series attempts to answer this question

by Brian Schatz

The University of Hawai'i School of Ocean and Earth Science and Technology (SOEST) has some of the most distinguished global environmental change faculty in the world. Despite this tremendous resource, the public rarely has an opportunity to hear from these scholars. This year, a SOEST series of public presentations will help make the knowledge and findings of SOEST and other UH faculty more accessible to the public.

The lecture series, sponsored by Sea Grant, SOEST, and Earth Day Hawaii '95, will address the role of science in developing a sustainable future for Hawai'i. The speakers are not only experts in their field, but exceptional teachers, able to communicate complicated subjects to laypeople.

The series was kicked off with with a lecture entitled "Predicting Natural Disasters: Earthquakes and El Nino," presented by Dr. C. Barry Raleigh, Dean of SOEST. Raleigh examined the potential affects of natural disasters on the scientific, political, ecological, and economic landscape of the world's people. He noted the degree of uncertainty in predicting cataclysmic events like earthquakes. However, he also pointed out that scientists are now able to predict "El Nino," the phenomenon that is characterized by an increase in ocean surface temperature in the eastern Pacific, which in turn affects weather patterns in North and South America. Raleigh explained that during an El Nino year, rainfall in Peru is much heavier. In the

early 1980s, scientists predicted an El Nino occurrence, and Peruvian farmers planted rice instead of wheat, which fared better in those conditions.

Rick Steiner, Alaska Sea Grant Extension agent, gave a presentation entitled "The Lessons of the Exxon Valdez," on December 15. Steiner examined the ecological and legal ramifications of the Exxon Valdez oil spill, and discussed the ocean ecosystem's recovery as well as the legislative response.

Forthcoming lectures will delve into the economic, political, and ecological impacts of global change, and how scientists can address these issues to help create a sustainable future. Presentations in 1995 include:

- Dr. Thomas Schroeder, Associate Dean of SOEST, and Chair of the UH Department of Meteorology, will speak about hurricanes on January 24 at the Campus Center, room 308, at 7 pm.
- Dr. Richard Brock, UH Sea Grant Extension Fisheries specialist and SOEST researcher, will speak on March 21 at the Campus Center, room 308, at 7 pm.
- On April 21, SOEST, Earth Day Hawaii '95, and Hawai'i Sea Grant will hold a panel discussion in the Campus Center Courtyard at 12 noon addressing the question "What is a sustainable future?" The participants will include Dr. Deborah Woodcock, UH Meteorologist, and Dr. James Dator, UH Political Science professor, among others.

For more information contact Brian Schatz, Sea Grant Extension, at (808) 957-0423. ←

Watch out for this marine organism:

Mycobacterium marinum



Description: *Mycobacterium marinum*, formerly *Mycobacterium balnei*, is a microorganism that can be found on fishes, in aquarium water containing contaminated fishes, and on other marine life. This microorganism causes a common (and potentially severe) infection called "swimming pool granuloma." Those infected are usually fishermen, people who handle and clean fish tanks regularly, and people who work in aquaria.

Symptoms/injuries: The *Mycobacterium marinum* bacteria grow in cuts and skin abrasions producing swollen lumps or inflamed lesions. These may be difficult to distinguish from other severe skin conditions and a biopsy may be needed. If left untreated, scarring can result. Infection by this bacteria may also result in a false positive TB test.

Treatment: When symptoms appear, promptly consult a physician.

Preventive measures: Avoid direct contact with contaminated fishes and aquarium water, particularly when hands have cuts or skin abrasions. ←

Excerpted from *Dangerous Marine Organisms of Hawaii*, UNIH-SEAGRANT-AR-78-01.

February 13, 1996

George,

Here's the entire bundle of netting material that cause (most likely) the demise of #7293. I'm sending it to you to look and to render your expert opinion.

I originally called the green stuff "cargo net" which kinda raise some the ire of several people here. Their initial contention was that the green netting was part of a "drift net" used by large fishing boats. I pointed out to them that "drift net" were usually made of monofilament and of much larger eye. They now claim that the green stuff is what purse seiners used to harvest pelagic species. I've never personally seen purse seining operations so I can't offer any help in this regard. Can it be that they are correct? Please take a look at it and get back to me...so as to end this debate once and for all. They're trying like heck to pin this catastrophe on fishing. Me, I could give a rat's ass whether it was a fishing net or not that caused the death of this beautiful creature. All I know is that #7293 is now longer alive because of man's carelessness and his predilection for tossing his crap into the ocean.

Curled up within the pile you'll find some real fishing netting (red/orange) which is less than 2" mesh. This I've seen used locally to purse or bag certain species like *akule*. This stuff was not entangled on the turtle, only the green stuff which was caught on it's right front flipper.

Aloha,

Bill

P.S.
Feel free to keep
this stuff for
slow & safe!
~

THE SAGA OF HONU #7294

by
Juyn Illgen

This is not a pleasant story, but one that needs to be told. This is also a tribute to a gentle sea creature whom I never saw until she was gone. She didn't have a name, only a number.

Let's first start with a little background on the Honu or better known as: The Pacific Green Sea Turtle. They are found in most waters of the Pacific, and lay their eggs in various places, mostly on the French Frigate Shoals. Wherever they are born, that is where they will return to lay their eggs. Many of these gentle creatures are banded or tagged by Marine Biologists, and Wildlife Management people to follow their travels and when they begin and end their lives. This turtle is still on the endangered species list, although their number appears to be increasing. These turtles are vegetarians, eating only seaweed. They also do ^{NOT} usually bite people, unlike others of their species. Their optimum age is probably around fifty, at which time they will weigh between four and five hundred pounds. The females do not start to produce eggs until about age twenty-five to thirty. At that time the female will return to wherever she was born to lay her eggs, which may number as many as one hundred, in the sand and then return to the sea. Scientists are still not sure how far these creatures roam, but one who was tagged on the French Frigate Shoals turned up in the Philippines.

Now as to what happened to this particular turtle. On February 6, 1996, Mr. Ray Krosek staying at Wavecrest Resort at Ualapue, noticed what he thought was a large turtle bobbing in the fish pond. He enlisted the help of Mr. Philip Kalipi, who was coming in from fishing, and together they went out and brought this creature to shore. She had a net of some kind on her right front flipper. You could tell by looking at the way her flipper was cut, that she had been caught in the net. It appeared that someone may have found her in the net, and cut her loose, or she may have become entangled in a piece of floating net. Whether she died right away, we'll never know. We wonder if just maybe she was able to get around for a while with the net (which unto itself would not have killed her), and finally got it snagged on some coral, when she was feeding, and couldn't get up for air.

Some people thought the net was a cargo net, while others thought it was part of a drift net. It really doesn't make a lot of difference, especially to the turtle. She was trapped either way.

This turtle had a history, which I will share with you. On February 7, 1996, I called Bill Puleloa who is a Marine Biologist on Molokai. The Honu had tags on her, and Mr. Puleloa had the information on her. She was first tagged on December 20, 1983 on the reefs at Palaau. At that time her shell measured 46.0 cm. long by 36.5 cm. wide. Her weight was estimated to be about 50 lbs., and her age was guessed at approximately five years. Mr. Puleloa saw her again on March 3, 1986, at which time her shell measured 52.5 cm. long by 48.0 wide, and her approximate weight was estimated at between 85 to 90 pounds, and of course she would have been about eight years old. She wasn't seen again by him until February 7, at which time her shell measured 90.0cm. long by 90.0 wide, and her approximate weight was estimated at between 250 to 300 pounds. At that time she would have been approximately eighteen years of age. She did not appear to have been ill or emaciated, but she did have what appeared to be a growth at the base of her

tail. Thirty per cent of the turtles in Hawaii have this type of growth somewhere on their bodies. It is called a Fibropapamillia, and thought to be caused by a virus. If these become a problem to the turtle, they often will become emaciated. This was not the case with this turtle.

When I saw the men and realized what they had, it made me sick. When they brought her onto the shore and I saw the net, I got mad. Here was a beautiful creature who somehow got entangled and probably drowned. We now know that she would not even reach her sexual maturity for another five to six years. I stood and wept for her, and all the creatures who are caught not only in drift nets, but all the flotsam that is found in the sea. People who use drift nets must be stopped, and all of us who go out to sea must stop tossing our trash overboard. The net will be sent on to the authorities to see what it was. The useless slaughter must be stopped.

After she was examined by Mr. Puleloa, it was decided to take her back to the sea for her final resting. Mr. Kalipi took her back out to sea that evening.

**WAVECREST
RESORT
MOLOKAI
HAWAII**

Jay W. Illgen - A308

HC 01 - BOX 541
KAUNAKAKAI MOLOKAI HAWAII 96748

February 15, 1996

To: George Balazs

From: John Henderson

Subj: Debris from Moloka'i turtle

There are two types of nets present:

The large mesh (6.5 inch stretched mesh) green net, is from a midwater trawl. Judging by the large mesh, it could be from the wings of the trawl. It certainly is not from the cod end.

The small mesh (ca 1.75 inch stretched mesh) pink net is more difficult to define. In my estimation, it's from an inshore fishery for small, schooling fish, such as herring, sardine, or anchovy. Could be part of a purse seine or a lampara net.

*Likely
New-Hawaii*

The lines (at least 4 different ones) are not associated with the net fisheries, and were probably aggregated with the net fragments by ocean currents forming a "drift row".

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Molokai Adv



Volume 12 Number 26

Molokai's Favorite Community



Dr. Phillip Reyes, newly signed on with Dr. Emmet Aluli as co-medical directors of Moloka'i General Hospital was at the Health Fair to become re-acquainted with the community. Dr. Reyes his wife Cheryl, son Andrew, daughter and mother Kauila Reyes were enjoying the Health Fair. Dr. Reyes, a Moloka'i native is a graduate of the University of Hawaii's John Burns School of Medicine and practiced at the Molokai General Hospital before working at the Veterans Administration.

His wife Cheryl is employed at the University of Hawaii and his mother, Kauila Reyes teaches Hawaiiana at the Molokai High School., his father is retired from Friendly Market Center. (photo by S. Peabody)

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Molokai



Volume 13 Number 7

Mardi Gras -5

by Alice

Join the Mok first annual pub Saturday, February celebrated pre beginning of Le Gras carnivals are in Orleans, but the attempting to riv Merrymaking wil ages, delicious food f hand-made crafts, plants, baked goods, contain prizes, and a grand prize drawing for \$1,000. C tickets. You need not be present to win. Pleas Pauole Center from 9 am to 2 pm!!



Property Tax Bills I

Property owners' failure to pay have second installment taxes on or before tax Tuesday, February 20, 1996 will advis result in a 10 percent penalty plus 12 Tax percent per year interest. Mailed the V payments must be postmarked Wailuku in person or by calling 243- no later than February 20, 7697.

I don't know exactly which planet this is from... But it's certainly not earth! →

Anonymous part-time transplant with the "cute whorly" I'm here to save you! I know what's best for you for nature's true beauty.

XXX
Z

Ala
Thought you might like a ... The is still from the

Molokai Honu # 7294

by Juyn Ilgen



st beach—Ray Kressek examines the 250 dead turtle and the net she led in when spotted and brought to shore last week. (pics: Kressek)

ent people to begin and end e endangered weight was estimated to be about 50 lbs., and her age was guessed at approximately five years. Mr. Pulelou saw her again on March 3, 1986 at which time her shell measured 52.5 cm. long by 48.0 cm. wide, and her approximate weight was estimated at between 85 to 90 pounds. and of course she would

species list, although their numbers appear to be increasing. These turtles are vegetarians, eating

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Internet—<http://planetohawaii.com/molokai>

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Volume 13 Number 7

Molokai's Favorite Community Newspaper—Every Wednesday

February 14, 1996

Mardi Gras -Saturday!

by Alice Cabael Kaahanui



Join the Molokai Catholic Community in the first annual public Mardi Gras celebration this Saturday, February 17. This festival is customarily celebrated preceding Ash Wednesday and the beginning of Lent. The two most famous Mardi Gras carnivals are held in Rio de Janeiro and New Orleans, but the Molokai Catholic Community is attempting to rival them! Admission is free.

Merrymaking will include a costume contest for all ages, delicious food for sale, fun game booths, beautiful prizes, and a grand prize drawing for \$1,000. Call 567-6632 to get your drawing tickets. You need not be present to win. Please join us for the fun, at Mitchell Pauole Center from 9 am to 2 pm.!!

Property Tax Bills Due by Feb. 20

Property owners' failure to pay second installment taxes on or before Tuesday, February 20, 1996 will result in a 10 percent penalty plus 12 percent per year interest. Mailed payments must be postmarked no later than February 20, 1996.

have not received their real property tax bills by February 1, 1996 are advised to contact the Real Property Tax Division's Collection Section at the War Memorial Gym Complex in Wailuku in person or by calling 243-7697.

This is not a pleasant story, but one that needs to be told. This is also a tribute to a gentle sea creature whom I never saw until she was gone. She didn't have a name, only a number.

Let's first start with a little background on the Honu or better known as: The Pacific Green Sea Turtle. They are found in most waters of the Pacific, and lay their eggs in various places, mostly on the French Frigate Shoals. Wherever they are born, that is where they will return to lay their eggs. Many of these gentle creatures are banded or tagged by Marine Biologists, and Wildlife Management people to follow their travels and when they begin and end their lives. This turtle is still on the endangered species list, although their numbers appear to be increasing. These turtles are vegetarians, eating only seaweed.

Saga of Molokai Honu # 7294

by Juym Ilgen



Wavecrest beach—Ray Kresek examines the 250^{lb} dead turtle and the net she was tangled in when spotted and brought to shore last week. (pics: Kresek)

weight was estimated to be about 50 lbs., and her age was guessed at approximately five years. Mr. Puleloa saw her again on March 3, 1986 at which time her shell measured 52.5 cm. long by 48.0 cm. wide, and her approximate weight was estimated at between 85 to 90 pounds, and of course she would have born about 2000 eggs.

...rayments can be made at the Mitchell Panole Center on Molokai, or by mail to the County of Maui, P.O. Box 1405, Wailuku, HI 96793, in person at the Real Property Tax Office, War Memorial Gym Complex, or at any branch of the Bank of Hawaii.



Liko Rawlins led a group of 8th grade MHIS students on their regular Aopt A Highway Litter pick up --practicing "Aloha 'Aina"

County-Wide Community Work Day -- "Aloha 'Aina" Saturday, February 17, 1996

A county-wide clean-up "Aloha 'Aina" will be held on Saturday, February 17. This is the first Community Work Day (CWD) clean up by volunteers scheduled for 1996. Volunteers come out to rid Maui County of litter and conduct community improvement projects. Supplies and information on locations that need to be cleaned are available from Parks & Recreation' Volunteer Action Program by calling 553-3206 on MOLOKAI.

IF an individual or an organization would like to conduct a special clean-up project at other times, Volunteer Action will provide the rubbish bags and rubber gloves for this activity. This is in support of Community Work Day Program and the end of litter as a social problem by 1997.

unlike others of their species. Their optimum age is probably around fifty, at which time they will weigh between four and five hundred pounds. The females do not start to produce eggs until about age twenty-five to thirty. At that time the female will return to wherever she was born to lay her eggs, which may number as many as one hundred, in the sand and then return to the sea. Scientists are still not sure how far these creatures roam, but one who was tagged on the French Frigate Shoals turned up in the Philippines.

Now as to what happened to this particular turtle. On February 6, Mr. Ray Kresek staying at Wavecrest Resort at Ualapue, noticed what he thought was a large turtle bobbing in the fish pond. He enlisted the help of Mr. Philip Kalipi, who was coming in from fishing, and together they went out and brought this creature to shore. She had a net of some kind on her right front flipper. You could tell by looking at the way her flipper was cut, that she had been caught in the net. It appeared that someone may have found her in the net, and cut her loose, or she may have become entangled in a piece of floating net. Whether she died right away, we'll never know. We wonder if just maybe she was able to get around for a while with the net (which unto itself would not have killed her), and finally got in snagged on some coral, when she was feeding, and couldn't get up for air.

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After she was examined by Mr. Puleloa, it was decided to take her back to the sea for her final resting. Mr. Kalipi took her back out to sea that evening.

Examining the dead turtle, Puleloa noted the enlarged cloaca between the rear legs. Cause: unknown.



12 FEB 96

Bill - Good to hear from you!
Many thanks for the details on
poor 7293/7294 (your letter of Feb 7).

The lady on the scene was certainly upset
and concerned. Would be interested to know
what kind of article she wrote (for Molokai
newspaper?) — enclosed FYI

I think you made a typo on the
12/20/83 original tagging measurements, the forms
you sent me when you tagged that one in 1983
listed SL=43.0 and CL=46.0, SW=36.5 and
CW=42.0. A bit smaller than listed in
you 2-7-96 text table.

THESE ARE RIGHT! I miscopied
data from my original field
NOTES (entirely different animal!)

Were the tags still nicely attached?
Apparently so. And that's "good news" — looking at

PERFECT!!
No tear, No tumors,
No infection. (over)

WRONG!
Boy, it's good to
know someone's
pay attention. It's good
you're not looking at my
time sheet!!

The positive side of this case,

If your photos ^{ok!} come out, we would appreciate a copy of one or two.

Hope everything else is going well!

Aloha,
Jz

We're fine (I guess)
Hope the same's
of you & family.

Bice
Z

Reduce & paste

Date: 30 Sep 1996 14:56:55 -0400
From: Denise Ellis <Denise.Ellis@noaa.gov>
To: "gbalazs@honlab.nmfs.hawaii.edu" <gbalazs@honlab.nmfs.hawaii.edu>
Subject: Re: Hatchlings

George Balazs (MTRP Leader), Denise Ellis and Shawn Murakawa (JIMAR Associates) went to Halawa valley, Molokai on Wednesday, September 25, 1996. The primary objective was to search for evidence of possible hawksbill hatching in the area of the public beach, as a previous report of hawksbill hatching had come from the 'private' beach. The beach was scanned for possible hatchling tracks, stranded hatchlings, or nests with hatchlings at the surface. One lone hatchling track was sighted at the beginning of the beach. Some pits were examined without luck.

Near the far end of the beach (approx 1600 hrs), a number of hatchling tracks (possibly 6-10 individuals) were seen by GHB and DME emanating from near the brush area going down toward the ocean. (GHB and DME were talking about seeing only bird tracks, then looked at area they were standing. DME asked are those bird tracks? GHB 'no those are hatchling tracks!!' [yee-haaa]) The area where the tracks seemed to start was examined carefully, by brushing the top 1-2" of sand away. After about a minute of searching DME noticed the sand moving in the area she was searching and two hatchling heads popped up. Hatchlings were counted as they emerged, and a total of 30 hatchlings came out on their own and scurried their way down to the ocean, the last one with a little assistance from DME as it seemed stuck on a root. This was conveyed to GHB, after further examination of the nest another 39 hatchlings were found underneath a layer of unhatched eggs. A total of 69 hatchlings made their way to the ocean, 2 hatchling were found in the nest dead and 94 eggs were counted that didn't hatch.

Denise- Before I leave on Tuesday COB will you please compose a draft paragraph or two describing in your words our encountering the hatchling tracks and hatchlings at the surface. For my own internal use, so don't send much time on it. Thanks, geo.

| | |
|-----------------------------------|---------------------------------------|
| George H. Balazs | Phone: (808) 943-1240 |
| National Marine Fisheries Service | Fax: (808) 943-1290 |
| Marine Turtle Research Program | Email: gbalazs@honlab.nmfs.hawaii.edu |
| Honolulu Laboratory | |
| 2570 Dole Street | |
| Honolulu, HI 96822-2396 | |

SEA TURTLE NECROPSY/TUMOR FORM

NECROPSY DATE: 04/ 09 / 97 STRANDING ID, DATE AND LOCATION:

| | |
|-----------------------------------------------------------------------|------------------------------------------|
| Bill Kapuni (Snorkel & Dive Adventure) Bill Puleloa (DLNR-Molokai) | ID Date: 02-16-97 Kaunakakai, Molokai |
| PERSON RECORDING DATA: SKKM | |

DESCRIPTIVE REMARKS:
 Moderate decomposition.
 Hemorrhage to intestine, pelvic/pectoral muscle, neck, and lungs (internal trauma).
 ~500ml bloody fluid in body cavity.
 Trauma to neck, broken cervical vertebrae.
 Gastrointestinal tract 50% full.
 Thick green fat.

AA code: 3

| | | | |
|-------|------|-----------------------------------|-------|
| TAGS: | None | SEX: MALE, FEMALE OR UNDETERMINED | M |
| | | DB: 0 | VB: 0 |

STRAIGHT CARAPACE-LENGTH: 49.1cm WIDTH: 36.4cm

NOTCH LENGTH: 48.8cm PPS (Y/N): Y

CURVED CARAPACE LENGTH: 52.0cm WIDTH: 45.0cm

HEAD WIDTH: 7.8cm

TAIL LENGTH: T 9.0cm C 6.0cm

RIGHT FRONT FLIPPER WIDTH: 9.0cm Humeri

PLASTRON LENGTH: 38.7cm Forestomach contents

WEIGHT: 34.0#

LOCATION, SIZE, AND NUMBER OF TUMORS

| | #1 | #2 | #3 | #4 | TOTAL | REMARKS |
|--------------|----|----|----|----|-------|---------|
| RT. EYE | | | | | | |
| LT. EYE | | | | | | |
| MOUTH | | | | | | |
| NECK | | | | | | |
| RFF | | | | | | |
| LFF | | | | | | |
| RHF | | | | | | |
| LHF | | | | | | |
| CLOACA/TAIL | | | | | | |
| SEAMS/SCUTES | | | | | | |
| INTERNAL | | | | | | |
| TOTAL | | | | | | |

OTHER INFORMATION:

Blank area for other information.

TUMOR SCORE: 0

APPROXIMATE TUMOR SIZE CATEGORIES:

- #1 = DETECTABLE PATCH TO 1CM DIAMETER
- #2 = >1CM TO 4CM
- #3 = >4CM TO 10CM
- #4 = >10CM

Date: Fri, 2 May 1997 12:39:29 -1000 (HST)
From: Bill Puleloa <puleloa@aloha.net>
To: "George H. Balazs" <gbalazs@honlab.nmfs.hawaii.edu>
Subject: Nesting at Kawa'aloa Bay

*Refer
for Daily
log +
aloha
Book*

George,

Good news: Last night Joan Aidem, Dick Langer, and I had an opportunity for the first time to tag one of the nesting females frequenting Kawa'aloa Bay. She was encountered her during the excavation of her third pit at a location just west of the fishing shack.

The data as follows:

105.0 cm (curve length)
94.0 cm (curve width)
92.0 cm (straight length)
69.0 cm (straight width)
V879 (RFF)
V880 (3-4 LFF)
V881 (LH)
V882 (RH)
Tumors: #3 LFF at normal tag site;
 #1 neck
 #1 RFF

Bad news: The animal was very lethargic. She made absolutely no attempt to escape even when tags were being applied. My guess is that she's on her last legs...and she knows it. Most unusual to be nesting during daylight hours. She had not move an inch from her last pit at sunset...but was gone when we check again this morning. (Yes, there were tracks leading back to the sea!) Nevertheless, after years of trying, we finally got to id a nesting female on the north side of Molokai. If we're lucky, we'll see her again in the near future...back on the beach doing her thing.

Under separate covers I've sent you some tissue sample for DNA if you so desire. It's immersed in some denatured alcohol.

I saw the obituary in the papers. Yes, Dan was a good man. He'll be missed.

Aloha,
Bill

PS...Has Chris decided where he's going next year yet? After an agonizing two weeks of procrastinating, Nahoe finally settled on the University of Portland. It's a small coed school taught by the Congregation of Holy Cross, the same Catholic order that serves Notre Dame. At the going tuition rate, I'll be a permanent fixture with the State for the unforeseeable future.

SEA TURTLE NECROPSY/TUMOR FORM

NECROPSY DATE: 05 / 15 / 97 STRANDING ID, DATE AND LOCATION:

| | | |
|-----------------------------|----------|--------------------|
| GHB | 07-16-96 | Palaau, Molokai |
| PERSON RECORDING DATA: SKKM | | |

DESCRIPTIVE REMARKS: Found inside bullpen.
 RFL tag at RFL border and R1S.

| | | | |
|-------|----------|----------------------|-------|
| TAGS: | L1S V851 | SEX: MALE, FEMALE OR | |
| | RFL V852 | UNDETERMINED | |
| | RHF V853 | DB: 0 | VB: 0 |

No PIT found

| | | | |
|---------------------------|------|--------|------|
| STRAIGHT CARAPACE-LENGTH: | 49.1 | WIDTH: | 37.7 |
|---------------------------|------|--------|------|

| | | | |
|---------------|------|------------|---|
| NOTCH LENGTH: | 48.3 | PPS (Y/N): | N |
|---------------|------|------------|---|

| | | | |
|-------------------------|------|--------|------|
| CURVED CARAPACE LENGTH: | 52.0 | WIDTH: | 45.0 |
|-------------------------|------|--------|------|

| | |
|-------------|-----|
| HEAD WIDTH: | 7.9 |
|-------------|-----|

| | | | |
|----------------|-----|---|-----|
| TAIL LENGTH: T | 8.5 | C | 4.5 |
|----------------|-----|---|-----|

SAMPLES COLLECTED:

| | | |
|----------------------------|-----|---------------|
| RIGHT FRONT FLIPPER WIDTH: | 8.5 | Humeri + tags |
|----------------------------|-----|---------------|

| | | |
|------------------|------|----------------------|
| PLASTRON LENGTH: | 39.8 | Forestomach contents |
|------------------|------|----------------------|

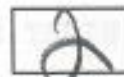
| | | |
|---------|-------|--|
| WEIGHT: | 34.0# | |
|---------|-------|--|

LOCATION, SIZE, AND NUMBER OF TUMORS

| | #1 | #2 | #3 | #4 | TOTAL | REMARKS |
|--------------|----|----|----|----|-------|----------------------------------------------------|
| RT. EYE | | | | | | |
| LT. EYE | | | | | | |
| MOUTH | 2 | | | | 2 | 2#1 RJH |
| NECK | 2 | 7 | 1 | | 10 | |
| RFF | 5 | 5 | | | 10 | 3#1/1#2 RFL tag site & 1#2 distal trailing edge |
| LFF | 1 | 5 | | | 6 | 1#2 LFL tag site |
| RHF | | 1 | | | 1 | |
| LHF | | | | | | |
| CLOACA/TAIL | | | | | | |
| SEAMS/SCUTES | | | | | | |
| INTERNAL | | | | | | |
| TOTAL | 10 | 18 | 1 | | 29 | |

OTHER INFORMATION:

TUMOR SCORE:



APPROXIMATE TUMOR SIZE CATEGORIES:

- #1 = DETECTABLE PATCH TO 1CM DIAMETER
- #2 = >1CM TO 4CM
- #3 = >4CM TO 10CM
- #4 = >10CM

Historical information for turtle V851

National Marine Fisheries Service
 2570 Dole Street
 Honolulu Hawaii 96822-22396

Tag information--

| Tag Number | Date Tagged | Tag Type | Tag Position |
|------------|-------------|----------|--------------|
| V851 | 07/22/93 | 1681 | LFL |
| V852 | 07/22/93 | 1681 | RFL |
| V853 | 07/22/93 | 1681 | RHF |

Historical information--

| Date | Encounter | Type of Encounter | Location | Tumor Score | Nesting Activity | Curved Length | Since Last Encounter | | | Overall | | |
|----------|------------|-------------------|----------|-------------|------------------|---------------|----------------------|------|---------------------|----------------|------|---------------------|
| | | | | | | | Interval Month | Year | Growth-rates cm/mon | Interval Month | Year | Growth-rates cm/mon |
| 07/22/93 | Near Shore | Molokai, Palauu 0 | | 0 | - | 46.5 | --- | --- | --- | --- | --- | --- |
| 07/16/96 | Near Shore | Molokai, Palauu 0 | | 0 | - | --- | 35 | 2.9 | --- | 35 | 2.9 | --- |

SEA TURTLE NECROPSY/TUMOR FORM

NECROPSY DATE: 05 / 15 / 97 STRANDING ID, DATE AND LOCATION:

| | | |
|-----------------------------|----------|--------------------|
| GHB | 07-20-96 | Palaau, Molokai |
| PERSON RECORDING DATA: SKKM | | |

DESCRIPTIVE REMARKS: Caught in bullpen wing.
 Abrasion on 1st central on carapace resulting from GHB towing
 turtle on the reef.
 LHF missing maybe not amputation, no scar, possibly hatched
 without flipper.
 Adult leeches and leech eggs.

| | | | |
|-------|--------------|----------------------|-------|
| TAGS: | None | SEX: MALE, FEMALE OR | |
| | | UNDETERMINED | |
| | No PIT found | DB: 0 | VB: 0 |

| | | | |
|---------------------------|------|--------|------|
| STRAIGHT CARAPACE-LENGTH: | 61.1 | WIDTH: | 45.3 |
|---------------------------|------|--------|------|

| | | | |
|---------------|------|------------|---|
| NOTCH LENGTH: | 60.8 | PPS (Y/N): | Y |
|---------------|------|------------|---|

| | | | |
|-------------------------|------|--------|------|
| CURVED CARAPACE LENGTH: | 65.0 | WIDTH: | 55.5 |
|-------------------------|------|--------|------|

| | |
|-------------|-----|
| HEAD WIDTH: | 9.2 |
|-------------|-----|

| | | | |
|----------------|------|---|-----|
| TAIL LENGTH: T | 12.0 | C | 7.5 |
|----------------|------|---|-----|

SAMPLES COLLECTED:

| | | |
|----------------------------|------|--------|
| RIGHT FRONT FLIPPER WIDTH: | 10.4 | Humeri |
|----------------------------|------|--------|

| | | |
|------------------|------|----------------------|
| PLASTRON LENGTH: | 47.9 | Forestomach contents |
|------------------|------|----------------------|

| | | |
|---------|-------|--|
| WEIGHT: | 51.0# | |
|---------|-------|--|

LOCATION, SIZE, AND NUMBER OF TUMORS

| | #1 | #2 | #3 | #4 | TOTAL | REMARKS |
|--------------|----|----|----|----|-------|--------------------------------|
| RT. EYE | | 1 | | | 1 | |
| LT. EYE | | | | | | |
| MOUTH | | | | | | |
| NECK | 1 | 1 | | | 2 | |
| RFF | | | | | | |
| LFF | | 3 | 1 | 1 | 5 | |
| RHF | | 1 | 1 | | 2 | 1#3 associated with ventral PC |
| LHF | | | | | | |
| CLOACA/TAIL | | | | | | |
| SEAMS/SCUTES | | | | | | |
| INTERNAL | | | | | | |
| TOTAL | 1 | 6 | 2 | 1 | 10 | |

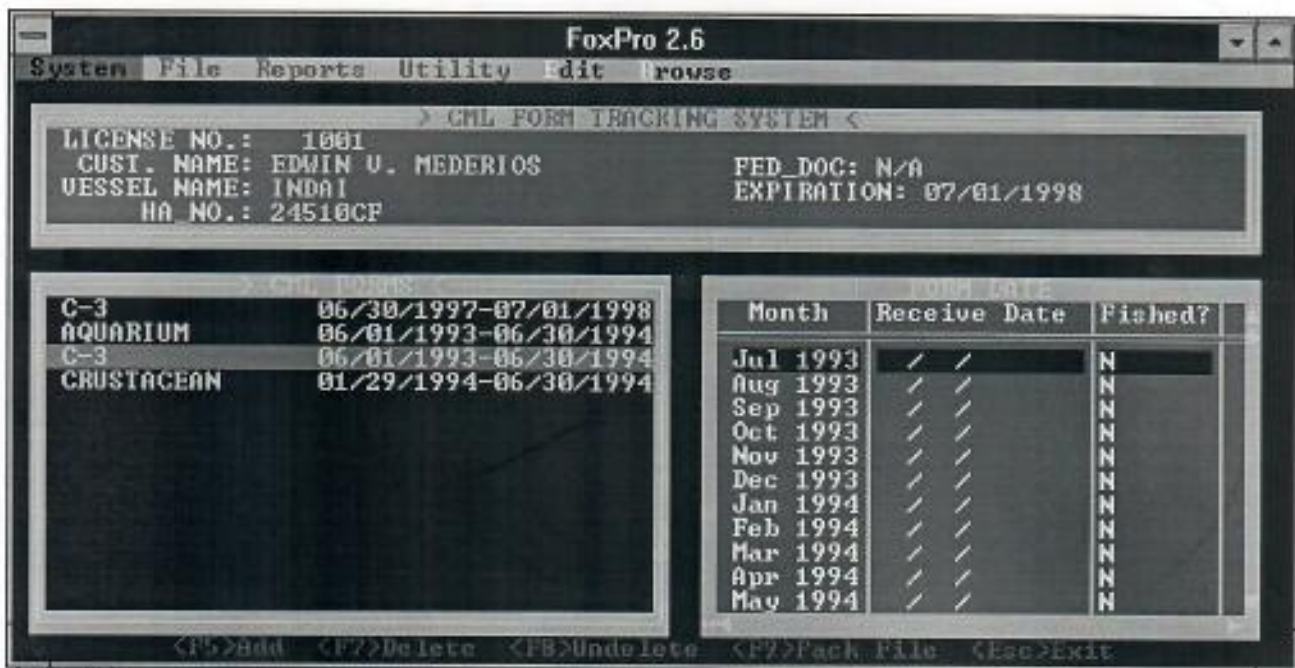
OTHER INFORMATION:

TUMOR SCORE:

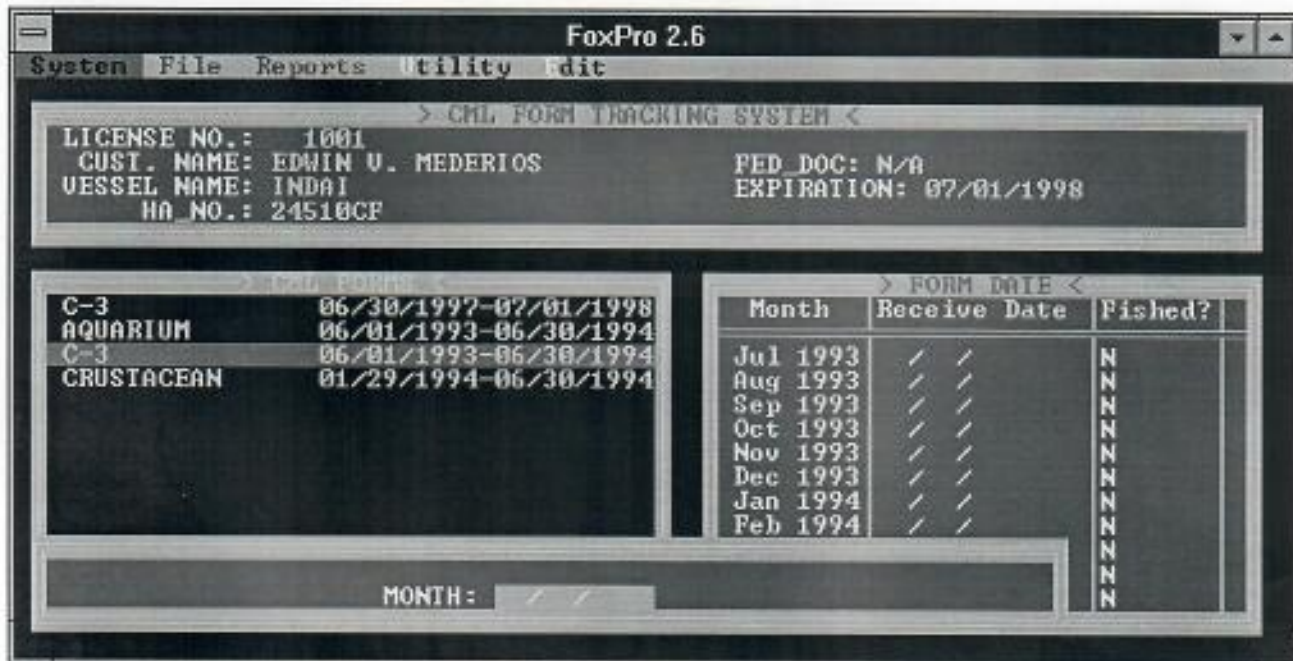
2

APPROXIMATE TUMOR SIZE CATEGORIES:

- #1 = DETECTABLE PATCH TO 1CM DIAMETER
- #2 = >1CM TO 4CM
- #3 = >4CM TO 10CM
- #4 = >10CM



Screen 9.



Screen 10.

The Hawksbill Sea Turtle Project:

An account of all Hawksbill nesting activities

In Kaawili Bay, Halawa Valley

Between July 22nd to August 31, 2000

HC-01 Box 901

Kaunakakai, HI

96748

D. Eric Co &

Stephanie Dunbar

Supervised by:

Bill Puleloa

*The Hawksbill sea turtle, an endangered species, has recently been sought after on the island of Molokai for the purpose of tagging with a radio transmitter. In the past, one has been known to nest on Molokai, at Kaawili Bay in Halawa Valley. The reason for the transmitter would be to observe if this turtle joined other Hawksbills off of the Hamakua Coast, Big Island after nesting. Between July 22nd and August 31st, we walked the Kaawili Bay beach searching for signs of Hawksbill nesting activity. In all, four incidents of nesting activity were observed. The first nesting activity was believed to be on the night of July 22nd. The second nesting activity occurred on the night of August 5th, 14 days from the first nesting activity. The third came six days later, on August 11th. A failed attempt at capturing and tagging the turtle on August 18th led us to believe that the nesting that occurred seven days prior was created by a second Hawksbill turtle, and that the first turtle was on an inter-nesting cycle of more than fourteen days. On August 24th a fourth nesting was found. This final nesting was believed to have been made by the second turtle. A second attempt at capturing and tagging the turtle (which we believed to be the first animal) began on August 27th and extended to August 31st *. This second attempt was unsuccessful; the turtle did not nest.*

* The second attempt at capturing and tagging a turtle extended past August 31st, this was the last day that Eric and Stephanie could participate in the attempt.

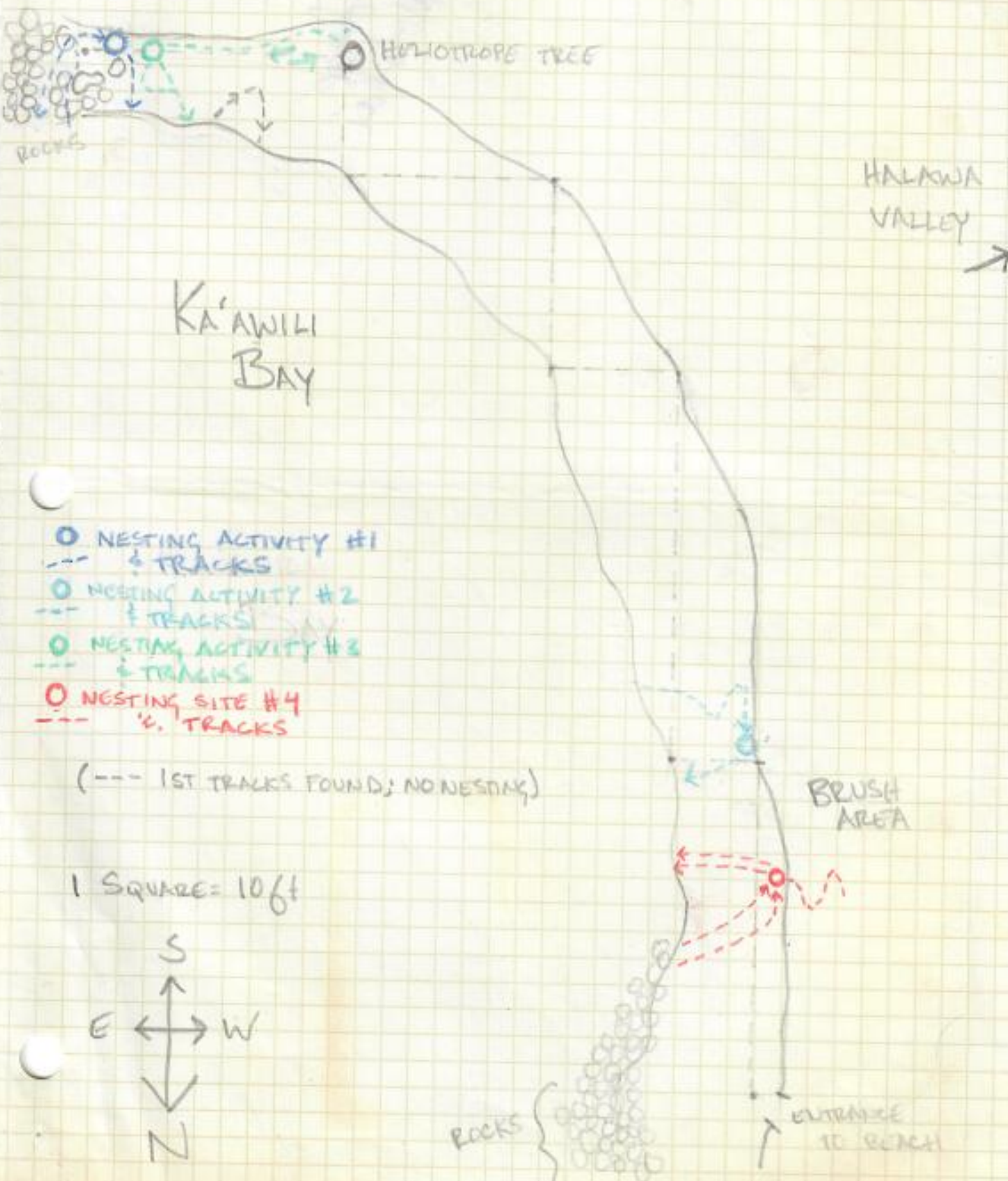
| Sun | Mon | Tue | Wed | Thr | Fri | Sat |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>July 23: First nest found at far right end of Ka'awili Bay</p> <p>Two tracks clearly mark the turtle's route to and from the nest. A third track was found near the nesting site (going into the ocean); however, it's connection to the nest is unknown.</p> | <p>July 24: Did not check</p> | <p>July 25: Walked the length of the beach- no tracks were found</p> | <p>July 26: Walked the length of the beach- no tracks were found</p> | <p>July 27: Walked the length of the beach- no tracks were found</p> | <p>July 28: Walked the length of the beach- no tracks were found</p> | <p>July 22 (day 1 of tracking): One set of tracks seen at far (right) end of Ka'awili Bay; up from water and back without nesting</p> <p>Night of July 22: <i>NESTING</i> <i>ACTIVITY # 1</i></p> <p>July 29: Did not check</p> |
| <p>July 30: Walked the length of the beach- no tracks were found</p> | <p>July 31: Did not check</p> | <p>Aug 1: Walked the length of the beach- no tracks were found</p> | <p>Aug 2: Did not check</p> | <p>Aug 3: Walked the length of the beach- no tracks were found</p> | <p>Aug 4: Did not check</p> | <p>Aug 5: Walked the length of the beach- no tracks were found</p> <p>Night of Aug 5: <i>NESTING</i> <i>ACTIVITY #2</i> (14 days from #1)</p> |

| | | | | | | |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Aug 6: Did not check</p> | <p>Aug 7: Nest found at left end of Ka'a'awili Bay, approximately 50 feet from entrance to the beach. Two distinct tracks were also found leading to and from the nesting site. This nest, unlike the first one that was found, was extremely exposed. (False Nesting?)</p> | <p>Aug 8: Walked the length of the beach- no tracks were found</p> | <p>Aug 9: Walked the length of the beach- no tracks were found</p> | <p>Aug 10: Walked the length of the beach- no tracks were found</p> | <p>Aug 11: Walked the length of the beach- no tracks were found Night of Aug 11: NESTING ACTIVITY #3 (6 days from #2 and 20 days from #1)</p> | <p>Aug 12: A third nesting was found just to the left of the first nesting site. Two, or perhaps three tracks were found, all presumed to be from the same animal. These tracks were the most confusing of any found due to their long lengths and varying directions.</p> |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | | | | | | |
|------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-------------------------------------|----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| <p>Aug 20: Tropical Storm Hector, huge runoff from Halawa Stream, much vegetative debris deposited on beach</p> | <p>Aug 21: Walked the length of the beach- no tracks were found</p> | <p>Aug 22: Did not check</p> | <p>Aug 23: Walked the length of the beach- no tracks were found</p> | <p>Aug 24: Did not check Night of Aug 24: NESTING ACTIVITY #4 (19 days from #2 and 13 days from #3)</p> | <p>Aug 25: Nest found to the far right of Kalawili Bay. Four turtle tracks were found coming and returning to the ocean over the rocky basaltic shoreline separating Kaimalava Bay and Kalawili Bay. Both sets appeared to have been made on the same night. Although she dug a hole in the sand, her tracks made their way beyond the beach and into the brush.</p> | <p>Aug 26: Did not check</p> |
| <p>Aug 27-Aug 31: Second attempt at capturing and tagging the turtle.</p> | | | | | | |

| | | | | | | |
|-------------------------------------|----------------------------------------------------------------------------|-------------------------------------|----------------------------------------------------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| <p>Aug 13: Did not check</p> | <p>Aug 14: Walked the length of the beach- no tracks were found</p> | <p>Aug 15: Did not check</p> | <p>Aug 16: Walked the length of the beach- no tracks were found</p> | <p>Aug 17: Did not check</p> | <p>Aug 18: First attempt at capturing and tagging the turtle at Ka'awili Bay. Three observers camped overnight, surveying the beach in shifts until dawn. No turtle was found. After this attempt, it was concluded that the nesting on Aug 11th represented a second animal; and that animal #1 was on an interesting cycle of more than 14 days.</p> | <p>Aug 19: Walked the length of the beach- no tracks were found before breaking camp.</p> |
|-------------------------------------|----------------------------------------------------------------------------|-------------------------------------|----------------------------------------------------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|

MAP OF HAWKSBILL TURTLE TRACKS
AND NESTING SITES IN KA'AWILI BAY*
JULY 22ND - AUGUST 24, 2000



* MAP WAS MADE USING COMPASS AND 100ft TRANSECT TAPE