# TABLE OF CONTENTS

BUDGET EXPLANATIONS i-vi

ABSTRACT 1

NARRATIVE

I. general 3

II. methodologies 5

III. data reduction 10

IV. presentation of results 11

V. description of student group 13

BIBLIOGRAPHY 15

APPENDICES

appendix I: list of considerations used in selecting marine park sites 16

appendix II: underwater logistics 17

appendix III:

A - weekly 19
B - overall 20

appendix IV: maps 21

appendix V: formats

A - questionnaire 22
B - interview 24

appendix VI: curriculum vitae for participants 27
BUDGET EXPLANATIONS

DATA COLLECTION IN FIELD

I. BIOLOGICAL TEAM REQUIREMENTS

a. permanent equipment

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>depth gauge</td>
<td>3</td>
<td>@ 28.50</td>
<td>86</td>
</tr>
<tr>
<td>underwater compass</td>
<td>3</td>
<td>@ 20.00</td>
<td>60</td>
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<tr>
<td>decompression meter</td>
<td>2</td>
<td>@ 75.00</td>
<td>150</td>
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<tr>
<td>diver collection bag</td>
<td>5</td>
<td>@ 7.00</td>
<td>35</td>
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<tr>
<td>underwater writing slates</td>
<td>7</td>
<td>@ 5.00</td>
<td>35</td>
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<tr>
<td>fuel containers</td>
<td>2</td>
<td>@ 7.50</td>
<td>15</td>
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<tr>
<td>water containers</td>
<td>2</td>
<td>@ 5.00</td>
<td>10</td>
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<tr>
<td>hand bearing compass</td>
<td>1</td>
<td>@ 45.00</td>
<td>45</td>
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<tr>
<td>secchi disk material</td>
<td>2</td>
<td>@ 5.00</td>
<td>10</td>
</tr>
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<td>anaemometer</td>
<td>1</td>
<td>@ 90.00</td>
<td>90</td>
</tr>
<tr>
<td>tarp</td>
<td>3</td>
<td>@ 15.00</td>
<td>45</td>
</tr>
<tr>
<td>dividers</td>
<td>1</td>
<td>@ 5.00</td>
<td>5</td>
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<tr>
<td>engineering pen set</td>
<td>1</td>
<td>@ 40.00</td>
<td>40</td>
</tr>
<tr>
<td>tent</td>
<td>1</td>
<td>@ 95.00</td>
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<td>Item Description</td>
<td>Quantity</td>
<td>Price</td>
<td></td>
</tr>
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<td>-------------------------------------------</td>
<td>----------</td>
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<td></td>
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<tr>
<td>specimen containers</td>
<td>1 case</td>
<td>@ 35.00 each</td>
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<tr>
<td>formaldehyde</td>
<td>5 pints</td>
<td>@ 3.75 each</td>
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<tr>
<td>photographic supplies</td>
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<td>@ 6.50 each</td>
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<tr>
<td>first aid kit</td>
<td>1 standard kit</td>
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<tr>
<td>log book</td>
<td>5 log books</td>
<td>@ 2.75 each</td>
<td></td>
</tr>
<tr>
<td>record book</td>
<td>5 record books</td>
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<td></td>
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<td>data transcription paper</td>
<td>3 reams</td>
<td>@ 3.85 each</td>
<td></td>
</tr>
<tr>
<td>tracing paper</td>
<td>1 roll</td>
<td>@ 5.00 each</td>
<td></td>
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<tr>
<td>finish map paper</td>
<td>1 roll herculon</td>
<td>@ 40.00 each</td>
<td></td>
</tr>
<tr>
<td>waterproof adhesive tape</td>
<td>5 rolls</td>
<td>@ 3.50 each</td>
<td></td>
</tr>
<tr>
<td>3/16&quot; polyethylene line</td>
<td>7.0 lbs.</td>
<td>@ 2.75 each lb.</td>
<td></td>
</tr>
<tr>
<td>regulator maintenance</td>
<td>5 regulator overhauls</td>
<td>@ 15.00 each</td>
<td></td>
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<tr>
<td>boat fuel</td>
<td>275 gallons</td>
<td>@ 35.00 each</td>
<td></td>
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<tr>
<td>boat oil</td>
<td>3 cases</td>
<td>@ 16.00 each</td>
<td></td>
</tr>
<tr>
<td>mileage</td>
<td>1500 miles</td>
<td>@ .12 each</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>1037</strong></td>
<td></td>
</tr>
</tbody>
</table>

-ii-
BUDGET EXPLANATIONS (CONT.)

c. equipment rental

boat rental
   including two engines/trailer
   11 weeks @ 175.00 each 1925*

tank rental and air fill
   500 tanks and fills @ 3.00 each 1500*

vehicle rental
   including hitch and connections
   11 weeks @ 155.00 each 1705*

light aircraft rental
   3 hrs @ 50.00 each 150

   - 5280

d. equipment transfers - Hilo to Lihue roundtrip

   trailer
   boat
   truck
   personnel gear
   tanks
   compressor 900

e. miscellaneous

   boat insurance 100

   personnel air fare - Hilo to Lihue roundtrip
   6 fares @ 73.00 438

f. wages

   divers
   5 divers
   13 weeks @ 125.00 each 8125

   - 9563

II. SOCIOLOGICAL REQUIREMENTS

a. laboratory and field supplies

   envelopes 139

   questionnaire and interview paper and printing 45

* to be paid on biweekly basis
BUDGET EXPLANATIONS (CONT.)

postage permit 90
box rental 6
log book 3
record book 2
data transcription paper
  2 reams @ 3.85 each 8
mileage
  2000 miles @ .12 each 240

b. miscellaneous

   personnel air fare - Hilo to Lihue roundtrip
     1 fare @ 73.00 each 73

c. wages

   1 sociologist
     13 weeks @ 125.00 each 1625
      __________  __________
      2231

III. COMPUTER/ADMINISTRATIVE ASSISTANT REQUIREMENTS

   computer time and materials 600
   wages
     13 weeks @ 150.00 each 1950
      __________  __________
      2550

IV. PROJECT DIRECTOR REQUIREMENTS

a. air fares

   Lihue to Honolulu roundtrip
     6 trips @ 43.00 each 258

   Hilo to Lihue roundtrip
     1 trip @ 73.00 each 73
BUDGET EXPLANATIONS (CONT.)

b. interisland phone calls
   3 minute calls Lihue to Honolulu
   65 calls @ .90 each 59

c. wages
   13 weeks @ 175.00 each 2275

d. miscellaneous
   mileage
   1000 miles @ .12 each 120
   \[ \text{Total: } 2785 \]

FINAL DATA ANALYSIS AND REPORT PREPARATION

I. COMBINED

a. miscellaneous
   computer time
   4 weeks 185
   computer materials 40
   photographic enlargements
   30 enlargements @ 2.50 each 75
   \[ \text{photographic prints} \]
   20 prints @ 1.50 each 30
   \[ \text{publishing costs} \]
   including expenses for 50 copies 350
   airfares Honolulu-Hilo roundtrip
   2 trips @ 57.00 each 114

b. wages
   biological team
   3 members
   8 weeks @ 32.00 each 768
   sociologist
   1 sociologist
   2 weeks @ 32.00 each 64
BUDGET EXPLANATIONS (CONT.)

computer/administrative assistant
1 c/a assistant
  4 weeks @ 35.00 each
  140

project director
1 pd
  10 weeks @ 45.00 each
  450

SUBTOTALS

DATA COLLECTION IN THE FIELD

I. biological team requirements 16,601
II. sociological requirements 2,231
III. computer/administrative assistant requirements 2,550
IV. project director requirements 2,785

FINAL DATA ANALYSIS AND REPORT PREPARATIONS

I. combined 2,381

4% sales tax (on all taxable expenditures: 7970.00) 319

10% RCUH overhead fee (on total expenditures: 26,6693.12) 2,669

TOTAL 29,369.00

Note: Upon the formal termination of the project, all permanent equipment or otherwise recoverable materials utilized by the project will become property of the University of Hawaii Hilo Marine Option Program.
ABSTRACT

The present degree of unregulated consumptive use of Hawaii's nearshore environment warrants the identification of sites to be considered as marine parks. Marine parks can be utilized for recreational as well as preservational purposes, thus insuring the enjoyment of present and future generations.

The proposed study focuses on the description of coastal sites situated on the northernmost island, Kauai, in the State of Hawaii, which may warrant inclusion into the State's Marine Conservation District System.

The format of the proposed study mirrors that of the NSF/SOS-sponsored Marine Park Study (Summer 1974) conducted by University of Hawaii students from the Manoa and Hilo Campuses. The previous study successfully identified potential marine park sites on the island of Oahu and Hawaii. (in press, The Potential of Marine Parks for Oahu and Hawaii, 1975).

Selection of specific study sites on Kauai will depend on suggestions provided by public and scientific communities, on site inspections and interviews, and assessment of existing information relating land analysis, marine biota, and sociological aspects characteristic of each site.

Research objectives will include measuring selected physical parameters and conducting underwater transects to determine the quantity and diversity of fish, algae, and invertebrate populations representative of each selected study site. Questionnaires and onsite interviews will be employed to gauge public response to the overall concept of marine parks and their possible establishment
at specific sites on Kauai.

Future studies investigating any of the numerous environmental influences originating in the coastal zone and thus affecting the offshore regime can utilize the proposed projects' initially obtained baseline inventories as sound comparison material.
NARRATIVE

I. GENERAL

With the large scale evolution of SCUBA and subsequent popularity growth in underwater activities, an increased, unregulated harvesting of marine organisms in the near-shore environment is now transpiring. Coupled with the misconception that the resources of this limited portion of the sea are so immense as to be virtually inexhaustible, this harvesting has undermined the inherent beauty of many reef systems, and endangered numerous others.

Through the efforts of concerned public and scientific groups, a feeling of conservation is replacing this exploitation, particularly in the formation of marine parks, where consumptive use can be managed and regulated.

Although studies of Hawaii's near-shore environment have been underway for several years, the information available to date is incomplete in that only a few locations have been studied in detail. Such invaluable data for potential marine park sites on the islands of Oahu and Hawaii has been tabulated by the NSF/SOS-sponsored Marine Park Study conducted last summer. However, similar information for Kauai is either fragmentary or non-existent. The State's Division of Fish and Game has no marine biological transect information available for the entire island.

The information describing potential sites on Kauai is insufficient to permit the objective analysis which must precede the final decision to establish marine parks. Such a decision is
extremely important in its affecting of all present and future generations; therefore, additional information is required on the factors which will enter on such a decision.

The project proposes to examine four areas on Kauai. The study will be conducted with regard to the considerations listed in appendix I. A preliminary list of prospective sites has been compiled based on suggestions provided by knowledgeable University of Hawaii faculty, Department of Land and Natural Resources personnel, and residents of Kauai. The list compiled from this information is by no means complete, and additions will be made as promising locations are identified. The prospective sites already identified are: (see maps - Appendix III)

- Anini Beach
- East end of Kalihiwai Beach
- Kilauea Bay
- Haena
- Poipu Beach
- Polihale
- Hanalei Bay
- Nualolo Landing
- Kilauea Lighthouse
- Moloaa Bay

This list of sites along with any other potential sites identified prior to the formal initiation of the project will be reduced to four, keeping the scope of the project commensurate with the time available. This reduction will be accomplished through a general assessment of each site with regard to some of the considerations listed in Appendix I. The assessment will include preliminary on-site dives and inspections.

Once the four sites have been selected, a priority gradient will be drawn up listing the sites in decreasing order of selection.
favor. The site highest on the list will be surveyed first, allowing the survey teams a degree of flexibility should preliminary mail-out questionnaire results indicate an error in the original site selection. Should a site be eliminated from the list due to the discovery of a more promising one, a site of lesser potential, not higher, will be deleted.

II. METHODOLOGIES

The following methods will be employed at each of the selected study sites.

A. Geography

1. general analysis

From a variety of references, information describing site topography, population density, historical significance, etc., will be compiled and synthesized into map form. Information will be obtained from State and County agencies regarding present and future zoning plans. Attempts to discern projected construction plans for each site will be made in the consultation of various development firms. On-site inspections will determine site suitability with regard to topography, accessibility, and boundary enforcement. The end product of the general analysis will be the identification of sites warranting further in-depth investigation.

B. Physical Oceanography

1. marine geomorphology

Sites will be mapped via reference to available aerial photographs and those obtained from project flitelines. Survey dives will be conducted to collect information from which habitat
maps can be produced [(see section C of Methodologies)]. A bathymetric survey utilizing leadline soundings and diver observations will be conducted to define depth contours at each site.

2. physical parameters

Using secchi disks, water turbidity will be measured daily. At hourly intervals, estimates of wind velocity, cloud cover, precipitation, wave conditions, and relative current and surge strength will be recorded.

C. Marine Biota

1. general

The biological survey team will consist of five divers; two trained in fish identification, two trained in invertebrate and algae identification, and one safety diver trained in one of the ID skills. One of the five will serve as the Biological Team Leader (abbreviated BTL), whose immediate responsibility will be the biological survey team and its data collection.

Preliminary survey dives will be conducted by the Project Director (see Description of Student Group) and the BTL to delineate the habitats representative of each site. Habitats are defined as areas having uniform substrate coverage (i.e., sand, coral reef, rubble, etc.). Transecting stations will be established in each habitat, thus compiling a composite of marine life for the overall site.

2. transect lines

One of the principle duties of the safety diver will be the deployment of the transect lines and subsequent line retrieval
once the biological team has completed data collection at each station. Positions of transecting stations will be determined via bearing triangulation and recorded by the safety diver. It will also be the immediate responsibility of this diver to secure the daily measurements listed under section (2) of the Physical Oceanography methodologies.

3. fish transects

Fish will be enumerated using the visual survey technique modified from Brock (1954). Brock's method consists of two scuba divers swimming along a weighted line 1500 feet in length, with a counting path for each diver approximately 20 feet wide. Frequency and length of all species sighted within this area are recorded. The modification consists of shortening the transect line to 100 meters, and reducing the width of observation to 3 meters on each side of the line, (see Figure A). The two divers trained in fish ID swim along the 100 meter line previously deployed on the bottom by the safety diver, recording the quantity and diversity of fish species sighted within the 3 meter zone adjacent to the line.

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Figure A: transecting lines
4. invertebrates and algae transects

The enumeration of invertebrate and algae populations necessitates a dual sampling scheme consisting of two categories; substrate coverage and macroinvertebrate populations. Determination of substrate coverage will entail listing what coral and algae species, or additional substrate type (i.e., dead coral, rock) cover the bottom specifically under the 16 points of intersection within the standard one meter\(^2\) quadrat (see Figure B). The quadrat will be placed on the bottom at 10 meter intervals along the transect line.

![Figure B: standard one meter\(^2\) quadrat](image)

Determination of macroinvertebrate populations will entail counting the large invertebrate species (i.e., sea urchins, sea cucumbers, starfish, brittle stars, etc.) sighted within a one meter zone adjacent to the full length of the transect line, (see Figure C).

![Figure C: macroinvertebrate counting zone](image)
Integrating the functions of both fish and invertebrate surveyors, the standard procedure listed in Appendix II will be utilized by the biological team a maximum of three times per working day.

D. Public Opinion

1. survey

A mail survey will be conducted to determine public reactions to the establishment of marine parks. Each will consist of a two-page questionnaire with a self-addressed, postage provided envelope attached. The questionnaire will attempt to determine: (a) the extent and location of shoreline areas presently used; (b) frequency of use; (c) types of activities; (d) opinion on the establishment of marine parks; and (e) preferred locations for marine parks. Two such mail survey will be sent out to the residents of Kauai; at the beginning and middle of the project schedule. This will maximize the amount of returns and allow the results of the first mail out, which should be tabulated by the middle of the project schedule, to be incorporated in the selection of remaining study sites. (See Appendix V: mail survey format).

2. interviews

On-site interviews will be conducted with present users of coastal areas. These interviews are expected to take 20 to 30 minutes each, and will include assessment of present use of that area, frequency of use, and travel time to that site. After an explanation of the project and the rationale behind it,
the user will be asked if he considers the prohibition of some
or all consumptive use to be desirable in some areas, and if
so, to what extent such use should be curtailed. Finally, he
will be asked to recommend sites for preservation. (see
Appendix V: standard interview format).

III. DATA REDUCTION

One day of each working week will be devoted solely to
keypunching that particular week's compiled biological and socio-
logical data. The biological and sociological team members will
be responsible for the initial keypunching, subsequent error cor-
rections, and the final review of the data sheets returned from
the UH Computer Center (see Appendix II: Weekly Schedule). The
actual data reduction and compilation will be performed by the
Administrative/Computer Assistant at the Computer Center. "Canned"
programs made available through Mr. Dennis Kam of the Hawaii
Coastal Zone Data Bank will be utilized in evaluating the following
biological parameters:

Fish
- biomass
- species composition
- diversity
- relative species abundance
- population density

Invertebrates
- population density
- species composition

Corals
- diversity
- species composition
- percent coverage by species

In addition, canned programs made available through UH Survey Center will be employed in evaluating the following sociological parameters as functions of age, sex, residence, and first and second mailing:
- public response to the creation of marine parks for the island of Kauai in terms for, against, and undecided
- disclosure of areas of present usage
- public recommendations of potential marine park sites

IV. PRESENTATION OF RESULTS

A. Geography
   1. general analysis
      Data collected for each study site pertaining to adjacent land zonation, existing parks, existing historical sites, and location of transecting stations will be presented in finished map form.

B. Physical Oceanography
   1. marine geomorphology
      Data collected for each site pertaining to bathymetric relief will be presented in the following finished maps:
- depth contours
- habitat contours (based on substrate type)

2. physical parameters

Site-comparison tables pertaining to the median values of turbidity, wind velocity, cloud cover, precipitation, and wave conditions will be produced.

C. Marine Biota

1. Fish, invertebrate and algae

Results obtained from the UH Computer Center dealing with the biological parameters previously listed (see Data Reduction) will be presented in condensed form. The range and median values of a given parameter will be determined and compared with the respective habitats of the remaining sites. Thus, intra-site biota comparison is basically habitat orientated.

D. Public Opinion

Results obtained from the UH Computer Center dealing with the sociological parameters previously listed (see Data Reduction) will be presented in condensed form. All parameters will be investigated as a function of age, sex, residence, and first and second mailings.

E. Final Evaluation of Study Sites

In the final assessment of the potential of a particular site as a marine park, a system of values will be assigned to each of the criteria described under the major parameters previously
listed. A summation of these individual values will derive an overall value for the site, allowing a gradient of site ranking to be formulated.

V. DESCRIPTION OF STUDENT GROUP

As a result of the NSF/SOS-sponsored Marine Park Study conducted last summer, two of the already selected Kauai Marine Park Study participants, Robert Self and Cindy Baldwin, have acquired considerable experience in the field transecting methods, data synthesis, and presentation of refined data. Since the beginning of the 74-75 school year, these students have been instructing classroom seminars on Fish and Invertebrate Identification and heading weekend dives to various Big Island locations, during which the underwater transecting method is practiced. The remaining open positions comprise the other two biological team members and safety diver. These will be filled upon final selection of the most qualified divers now attending the classroom seminars and weekend dives.

The Project Director (abbreviated PD) for the Kauai Marine Park Study, Jon Roach, generated and directed the Offshore Aggregate Survey (RCUH #850), supervised the Hilo MOP involvement in the Submerged Sand Recovery System Ecological Monitoring Program at Keauhou Bay, and is presently the assistant student coordinator for the Hilo MOP. Drawing on the experience obtained from these and other previous administrative capacities, the PD will oversee the collection, synthesis, and presentation in report form of
all biological, geographical, physical, and sociological data. In addition, he will handle all administrative, personnel, and otherwise logistical field requirements. This in principle, will allow the biological and sociological investigators to concentrate on the immediate field research, and not the integrated management of the entire project.

The actual Honolulu-based administrative transactions involving requisitions, payroll, relations with funding and budget officers, etc., will be the responsibility of the Computer/Administrative Assistant (abbreviated A/C Assistant), who will work in close contact with the field-based Project Director. In addition, this individual will handle all computer requirements described in the Weekly Schedule. Essentially, the Honolulu-based C/A Assistant will dissolve the physical distance between the field work site and the Manoa Campus, and thus the numerous obstacles that are otherwise encountered in such a physically separated situation. The Hilo study group is presently soliciting the Manoa Campus for qualified individuals interested in filling the C/A Assistant position. Final selection will be made on the basis of personal interviews conducted at the Manoa Campus between the PD and all interested parties.

Solicitations concerning the sociological position still open have been posted at the Hilo Campus, and forwarded to Kauai Community College. Final selection will again depend on the interviews conducted between the PD and all interested parties.
BIBLIOGRAPHY


Rutka, Justin, "Coastal Zone Communique," University of Hawaii Sea Grant Publications, August, 1974, No. 15, (final release).

Appendices
appendix I: MARINE PARK SITE SELECTION CONSIDERATIONS

Note: items not necessarily presented in the order of importance

I. Geographic Location
   A. Accessibility and Safety
   B. Ease of definition of boundaries for enforcement
   C. Adjacent land use
      1. Present use
      2. Effect of future construction and development
      3. Proximity to existing and proposed parks
   D. Historical significance

II. Physical Oceanography
   A. Marine Geomorphology
      1. Bottom slope and relief
      2. Bottom type
   B. Wave conditions, meteorological conditions
   C. Water clarity
   D. Fresh water influence

III. Marine Biology
   A. Coral cover and diversity
   B. Fish species composition and diversity
   C. Quantity and diversity of invertebrates other than coral, and algae
   D. Uniqueness of the ecosystem

IV. Sociological Implications
   A. Public reaction to marine parks in general, and to the specific sites
   B. Individual reactions of users of the site
appendix II: UNDERWATER LOGISTICS

(1) two 100 meter transect lines are deployed at predetermined transect stations parallel on the bottom approximately 15 meters apart by safety diver.

(2) two fish ID divers swim at identical rates, each on a different side of the line recording quantity and diversity of fish sighted within their respective 3 meter zone adjacent to the transect line. Swimming at the same rate reduces the possibility of scaring fish from one side of the line to the other and therefore count duplication.

(3) fish ID divers complete one line and return on the other, thus transecting two station per dive.

(4) fish ID surveyors return to surface vessel and transcribe data to data sheets, keying out any individuals not readily identified underwater from Hawaiian Fishes (Brock and Goseline). Simultaneously, invertebrate and algae ID surveyors descend to transect stations.

(5) one diver records substrate type found under each of the
16 points of intersection within the standard one meter$^2$
quadrat and repeats the procedure every 10 meters along the line. At the same time, the other diver of the invertebrate and algae survey team swims the full length of the same line and records the quantity and diversity of the macroinvertebrate population sighted within the one meter zone adjacent to the transect line.

(6) upon completion of the first line, divers switch duties and work back along the second line (see Figure D). Once both lines are completed, the divers return to the surface vessel and transcribe data to data sheets. Species not readily identified underwater and thus collected are identified onshore with the aid of a stereo or compound microscope, if required. Specimens are keyed out from Reef and Shore Fauna of Hawaii (Edmondson, 1933), or Hawaiian Marine Invertebrates - A Guide to their Identification (Hiatt, 1954).
We at the University of Hawaii are undertaking a study to determine the best possible sites for additional marine parks, and to assess resident feelings about establishing these parks.

Your assistance in completing the following questionnaire would aid us in our study. Place the completed questionnaire in the attached self-addressed, postage-paid envelope and deposit it in any mailbox.

1. We have divided the Island of Kauai into 5 general beach areas. Please indicate how often you go to each area.

   b. Kailio pt. to Moloaa Bay  
   c. Moloaa Bay to Kawelikoap pt.  

2. A Marine Park is a conservation area for preservation of reef plants and animals. Fishing, spearing, collecting of shellf and corals would be prohibited.

3. Would you be in favor of Marine parks on the Island of Kauai?  
   [ ] no  [ ] yes

   If "yes": please check the areas where you think a marine park should be established.

   a. Anini Beach  
   b. East end of Kalihawai Beach  
   c. Kilauea Bay  
   d. Haena  
   e. Poipu Beach  
   f. Polihale  
   g. Hanalei Bay  
   h. Nualolo Landing  
   i. Kilauea Lighthouse  
   j. Moloaa Bay
Background Information

4. Age:
   - under 20 [ ]
   - 20 to 29 [ ]
   - 30 to 39 [ ]
   - 40 to 49 [ ]
   - 50 to 59 [ ]
   - 60 or over [ ]

5. Sex:
   - male [ ]
   - female [ ]

6. Ethnic group which you identify with:
   - Chinese [ ]
   - Filipino [ ]
   - Japanese [ ]
   - Caucasian [ ]
   - Portuguese [ ]
   - Hawaiian [ ]
   - part-Hawaiian [ ]
   - mixed [ ]
   - other [ ]

7. Length of residence:
   - less than 1 year [ ]
   - 1 year to less than 5 years [ ]
   - 5 years to less than 10 years [ ]
   - 10 years or more [ ]

8. Please describe your present occupation [ ]

9. Please check highest level of education completed.
   - college [ ]
   - some college [ ]
   - trade school [ ]
   - business school [ ]
   - high school [ ]
   - eighth grade or less [ ]

10. What is your zip code number? (If you are unsure of your number, please write in the general area where you live).
appendix V B: STANDARD INTERVIEW FORMAT

BACKGROUND INFORMATION

1. age:
   [ ] 12-18
   [ ] 19-25
   [ ] 26-32
   [ ] 33-39
   [ ] 40-46
   [ ] 47-53
   [ ] 54-60
   [ ] 61-67
   [ ] 68 and up

2. length of residence:
   [ ] less than 1 year
   [ ] 1 year to 5 years
   [ ] 5 years or more
   [ ] born and or raised in Hawaii

3. are you a registered voter:
   [ ] yes [ ] no

4. sex:
   [ ] male [ ] female

5. what is your annual income:
   [ ] under 2,000
   [ ] 2,000-3,999
   [ ] 4,000-5,999
   [ ] 6,000-7,999
   [ ] 8,000-9,999
   [ ] 10,000-11,999
   [ ] 12,000-13,999
   [ ] 14,000-15,999
   [ ] 16,000 and up
   [ ] no reply

6. which ethnic group do you identify with:
   [ ] Chinese
   [ ] Filipino
   [ ] Japanese
   [ ] Caucasian
   [ ] Portuguese
   [ ] Hawaiian
   [ ] part-Hawaiian
   [ ] mixed
   [ ] other

7. what is your highest level of education completed:
   [ ] college graduate
   [ ] some college
   [ ] trade school
   [ ] business school
   [ ] high school graduate
   [ ] attended high school
   [ ] 8th grade or less

8. what is your present occupation:

9. what is your zip code or area in which you live:
SITE USAGE INFORMATION

1. how often do you go to each area (as shown on the questionnaire map): scale: 3 = very often, 2 = often, 1 = sometimes, 0 = never

   B [ ] Kailio pt. to Moloaa Bay
   C [ ] Moloaa Bay to Kawaiikoa pt.
   D [ ] Kawaiikoa pt. to Puolo pt.
   E [ ] Puolo pt. to Makaha pt.

2a. what is your type of activity in each of the areas: scale: 1 = scuba, 2 = snorkel, 3 = swimming, 4 = camping, 5 = fishing

   [ ] A [ ] B [ ] C [ ] D [ ] E

2b. how often:

   [ ] A [ ] B [ ] C [ ] D [ ] E

3a. (for individuals answering any of question #2a with "fishing") what type of fishing: scale: 1 = net, 2 = rod, 3 = handline, 4 = spearing

   [ ] A [ ] B [ ] C [ ] D [ ] E

3b. how do you fish in each of the areas: scale: 1 = from a boat, 2 = from the shoreline

   [ ] A [ ] B [ ] C [ ] D [ ] E

4. do you use the site for pleasure or for commercial purposes

5. if commercial, what type of activity?

   [ ] live tropical fish collection
   [ ] crabbing
   [ ] shell collection
   [ ] edible fish collection
   [ ] other

6. do you receive any income from your activity:

   [ ] yes [ ] no

7. would you estimate how much annually:

8. approximately how many hours do you spend at a site on each visit:

   [ ] 1-2 hours
   [ ] 2-4 hours
   [ ] 4+ hours

9. do you know what a marine park or marine conservation area is:

   [ ] yes [ ] no
10. do you feel that marine parks are a good idea:
   [ ] yes    [ ] no

11. do you feel marine parks for the Island of Kauai should be:
    [ ] fully restricted
    [ ] partially restricted
    [ ] seasonally restricted
    [ ] other

12. would you be in favor or the establishment of marine parks on the Island of Kauai:
    [ ] yes    [ ] no

13. would a marine park be:
    [ ] helpful    [ ] harmful
    to you in the way you use the site.

14. from what you know about the following sites, how would you rate them according to what you feel might be the "best" site for a marine park:
    [ ] A    [ ] B    [ ] C    [ ] D    [ ] E

15. which factor has the most influence on "why" you choose a particular site over another:
    [ ] whether conditions
    [ ] distance the site is from your home
    [ ] amount of known or suspected marine life available
    [ ] type of beach available
    [ ] water conditions
    [ ] facilities available
    [ ] other

16. at this particular site, how would you rate the access to the site:
    [ ] excellent
    [ ] adequate
    [ ] needs improvement
    [ ] poor
    [ ] other

17. do you feel as though the establishment of more marine parks is necessary:
    [ ] now    [ ] in the future

18. why:

19. additional comments:
appendix VI:

Curriculum Vitae Format for Student Participants

Name: Cynthia Baldwin  Age: 21

Present Institution: University of Hawai'i, Hilo  Sex: Female

Other institutions attended: Hawai'i Community College

Major field(s): Biology  Minor(s):

Marital status: Single

Class (as of academic year 1974-1975): Sophomore

Courses already completed which are relevant to proposed project:

<table>
<thead>
<tr>
<th>Course</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invertebrate Zoology</td>
<td>C</td>
</tr>
<tr>
<td>Physical Chemistry</td>
<td>C</td>
</tr>
</tbody>
</table>

Additional relevant courses to be completed before summer of 1975:
- Microbiology
- Organic Chemistry

Previous experience in research or project-oriented studies:
- Participated in University of Hawai'i research cruise studying coral reefs off of Hilo 1973
- Participated in NURP-sponsored marine biology study on the Big Island, 1974

Skills, hobbies, interests pertinent to the proposed study:
- Skilled in fish, invertebrates, and algae identification

Please note briefly why you wish to participate in the projected studies:

I participated in the Marine Park Study for the Big Island last summer working with the fish populations. For the proposed study, I have trained in the identification of corals, algae and other invertebrates. Now knowing the identification of most reef life encountered, I am interested in observing the reef population as a whole picture. This will enable me to study in greater detail the numerous relationships of feeding habits, shelter preferences, etc., which when considered as a whole, portray the selection and sustaining processes now at work on the reef.

I plan to continue in some aspect of Marine Biology as a career.
Curriculum Vitae Format for Student Participants

Name: E.F. Likolehua Self  Age: 25

Present Institution: Hilo College  Sex: Male

Other institutions attended: Kapiolani Community College

Major field(s): Biology  Minor(s): Chemistry

Marital status: Single

Class (as of academic year 1974-1975): Senior

Courses already completed which are relevant to proposed project:

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<thead>
<tr>
<th>course</th>
<th>grade</th>
<th>course</th>
<th>grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecology</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comparative Vertebrate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anatomy</td>
<td>B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marine Biology</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Directed Research- Invertebrate and algae collection</td>
<td>A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional relevant courses to be completed before summer of 1975: the course of '75.

Previous experience in research or project-oriented studies:
- Participant, NSF/SSS sponsored, Marine Park Study--summer '74
- Author, EIS, Keahou Sand Mining Project (manuscript in preparation by Dr. J.E. Morgan)

Skills, hobbies, interests pertinent to the proposed study:
- Skilled in invertebrate, algae and fish identification.

Please note briefly why you wish to participate in the projected studies:
- Analysis of the data from the NSF/SSS- sponsored, Marine Park Study, has brought forth some very interesting ecological correlations, such as the depth dependence of coral coverage. These correlations are tentative and will require more data to substantiate. Working on the island of Kauai will provide additional data from a geologically different area.
- Analysis of the data from the previous Marine Park Study has also suggested a modified method of transecting, which will take advantage of the depth dependence of coral coverage, and easily delineate the habitat types. We hope to test this transecting method on Kauai.
- My participation in this project will give me a foundation of practical experience on which to base later graduate work in coral reef ecology.
Curriculum Vitae Format for Student Participants

Name: Roach, Jon
Age: 20

Present Institution: Hilo College
Sex: Male

Other institutions attended:

Major field(s): Biology
Minor(s): Chemistry

Marital status: Single

Class (as of academic year 1974-1975): Junior

Courses already completed which are relevant to proposed project:

<table>
<thead>
<tr>
<th>course</th>
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<tbody>
<tr>
<td>ecology</td>
<td>A</td>
</tr>
<tr>
<td>botany</td>
<td>A</td>
</tr>
<tr>
<td>cartography</td>
<td>A</td>
</tr>
</tbody>
</table>

Additional relevant courses to be completed before summer of 1975:

directed research: Offshore Sand Inventory-Inoueke Bay to Kehauli Bay, Kauai

directed research: Utilization of Offshore Test Deposit

Previous experience in research or project-oriented studies:

squid technician- Hilo Marine Option Program, Hilo, Kauai

Skills, hobbies, interests pertinent to the proposed study:

Assistant Coordinator- Hilo Marine Option Program 1974

Please note briefly why you wish to participate in the projected studies:

Directing the Offshore Aggregate Survey conducted last summer by five Hilo Marine Option Program students provided me with a firm basic understanding of sand distribution in the typical reef system and sand interactions with onshore beach systems. Participation in the proposed study will further extend my "hands-on" exposure to the other marine sciences, especially in the biological and computer science disciplines.

The overall perspective of the proposal combined with the high caliber of the other student participants comprise the underlying motive for my directorship of the proposed research. In short, the research is immediately relevant to the community, and the "esprit de corps" of the selected team is without comparison.

The proposed research will also further expand and strengthen my management skills previously acquired in past administrative capacities.