

HCRI-RP



Dr. Ivor Williams
HCRI-RP/DAR Data Analyst

HCRI-RP / DAR

Data Analyst position

Began: June 2nd 2003, DAR Kona office & UH Manoa

Objectives: Increase DAR's capacity to

(1) Manage and analyze data

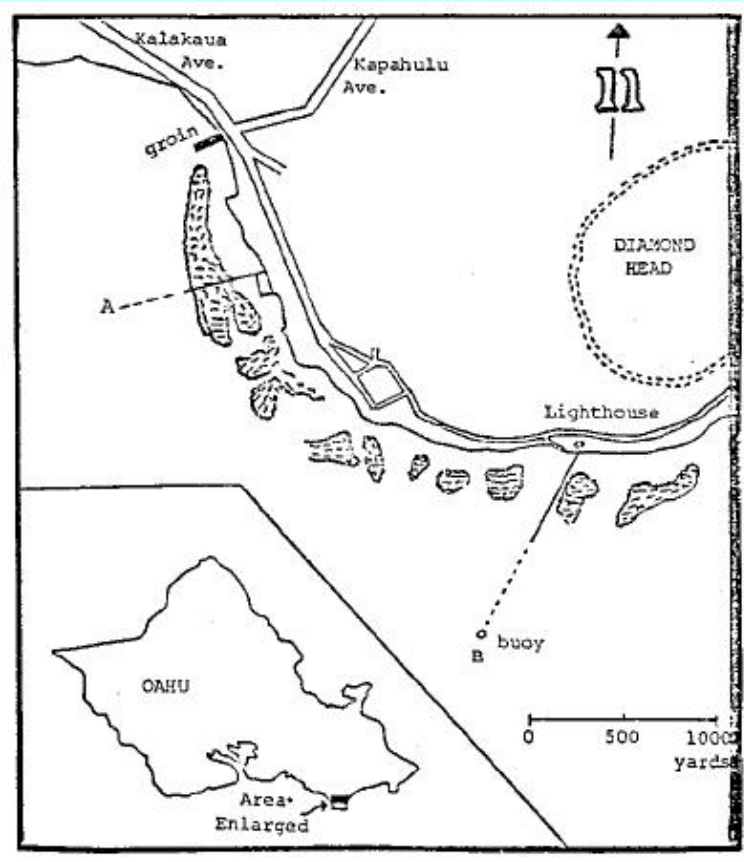
Existing (some decades+) time-series under-utilized

(2) Conduct and initiate monitoring

Improve statistical power, scientific-validity
& **cost-effectiveness**

(3) Initiate practical research

EXAMPLE: Waikiki - Diamond Head FMA



Rotational closure

1978 - 1987:

2 year closed to fishing followed
by 2 years open

1988:

Waikiki MLCD established

1988 – present:

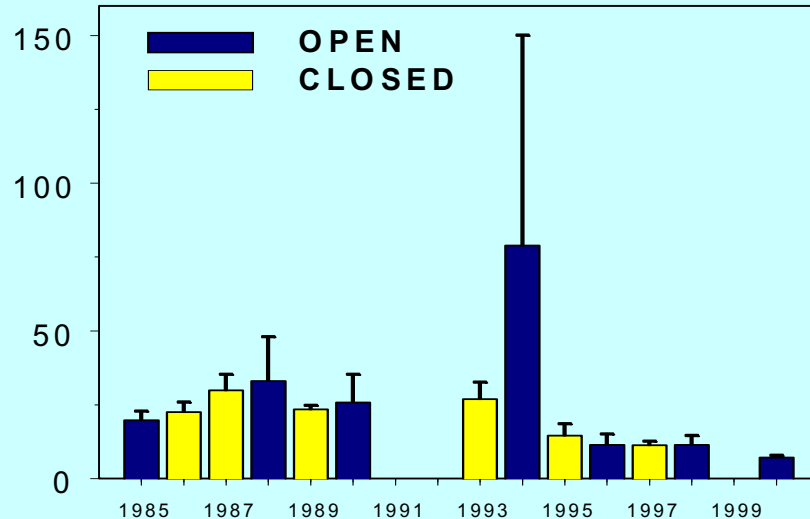
1 year open / 1 year closed

Preliminary analysis with fish survey-data from 1985 to 2000

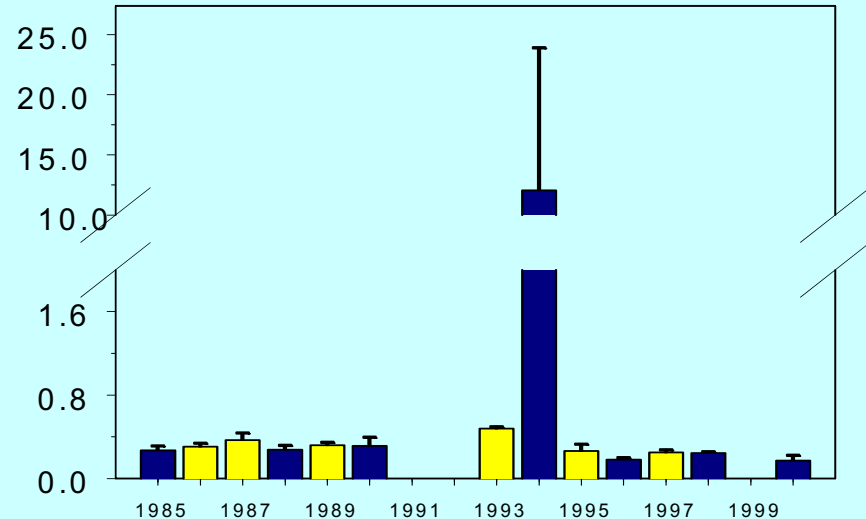
Waikiki - Diamond Head FMA

'Raw' Data

Biomass (g/m²)



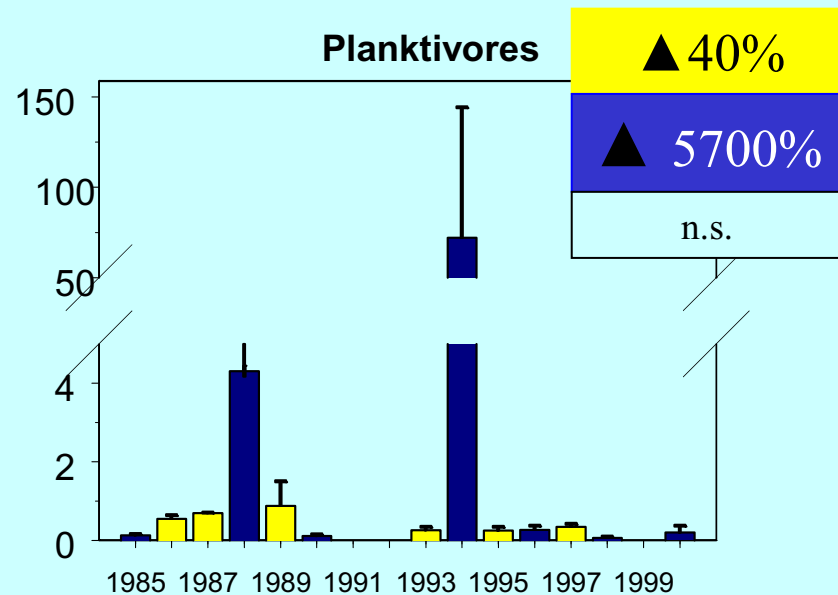
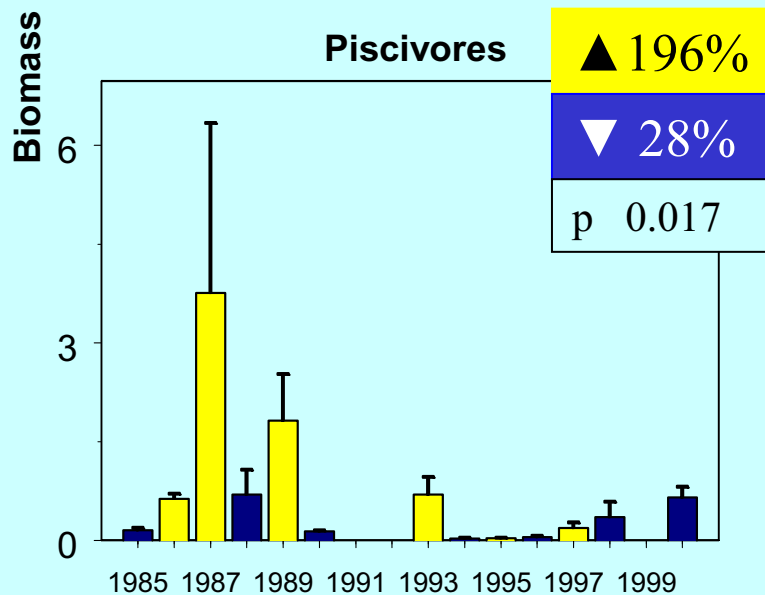
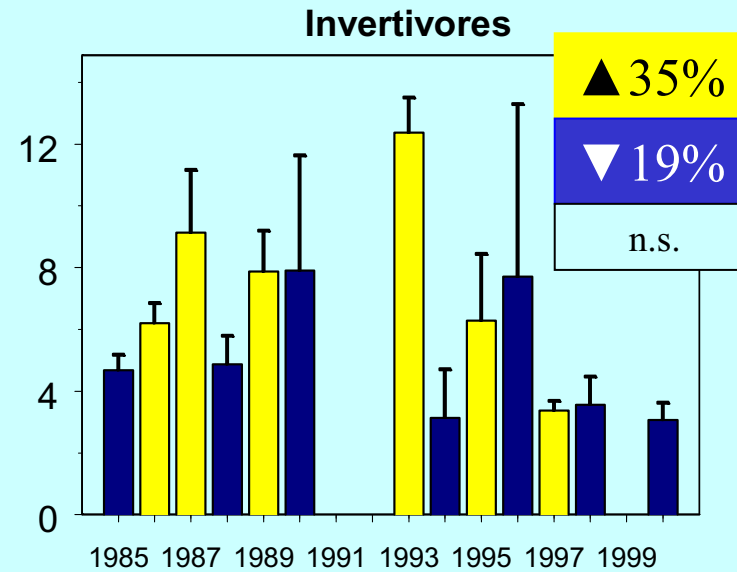
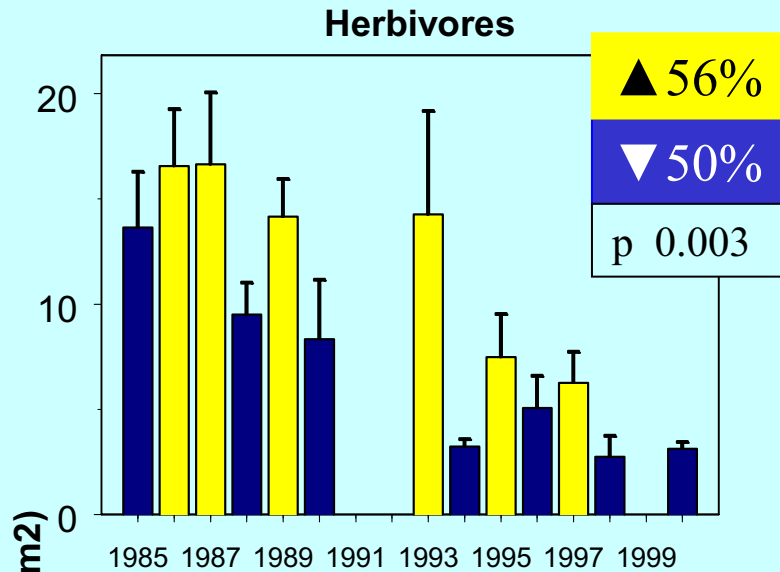
Abundance (/m²)



Initial Quality Control and Basic Filtering

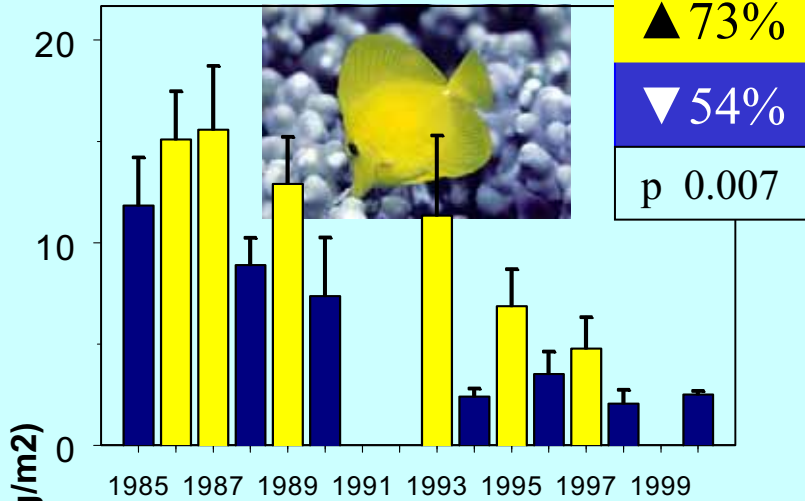
- Length-estimate corrections
- Use of data from July-Dec only
- Abundance data for fishes > 10cm only
- Group data by functional or taxonomic categories

Waikiki - Diamond Head FMA by Trophic Group

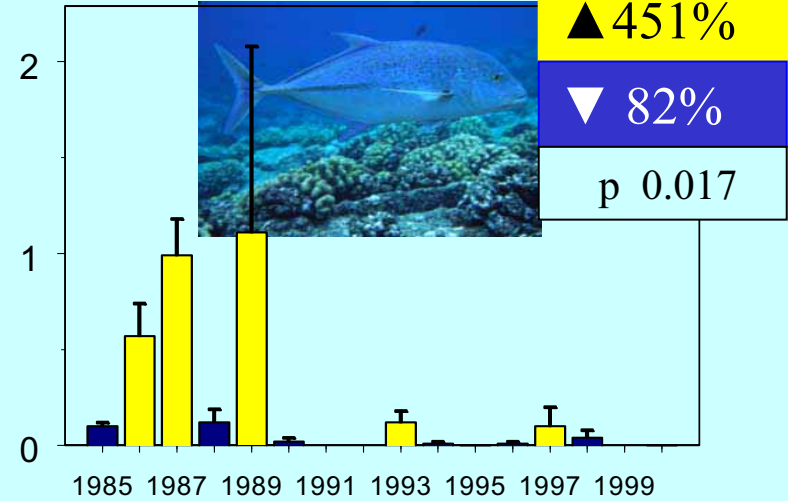


Waikiki - Diamond Head FMA by Taxonomic Group

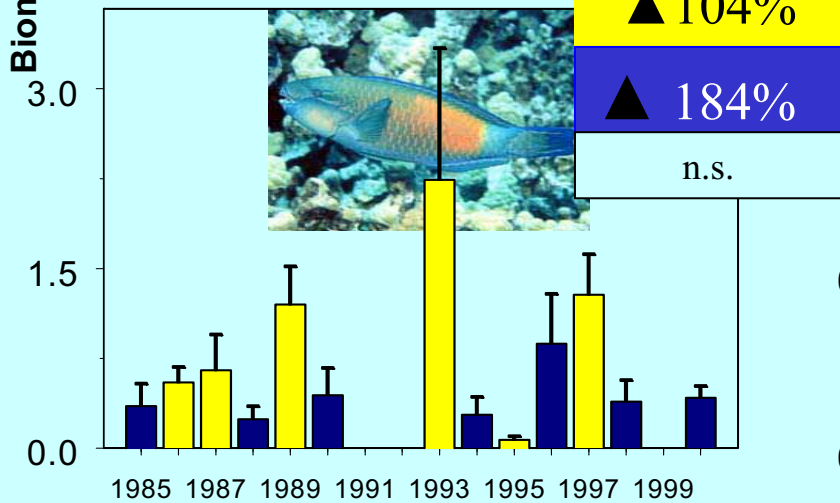
Surgeonfishes



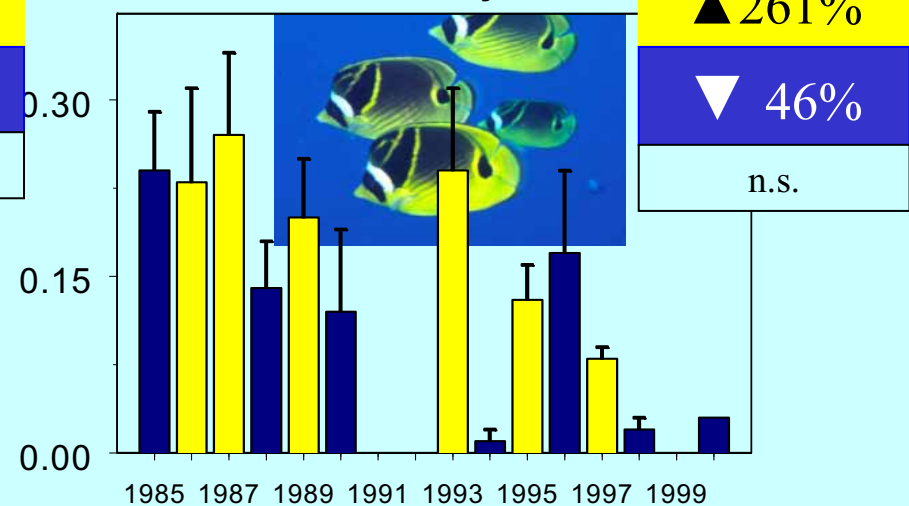
Jacks



Parrotfishes



Butterflyfishes



Waikiki - Diamond Head FMA

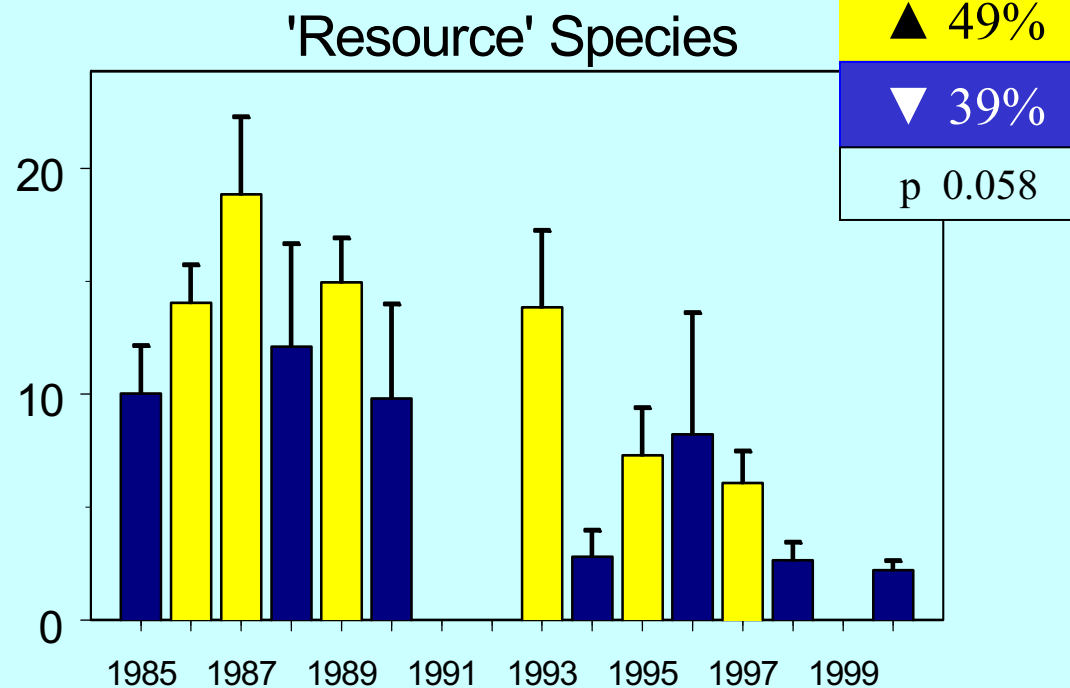
Preliminary Conclusions

•Year – to – Year changes:

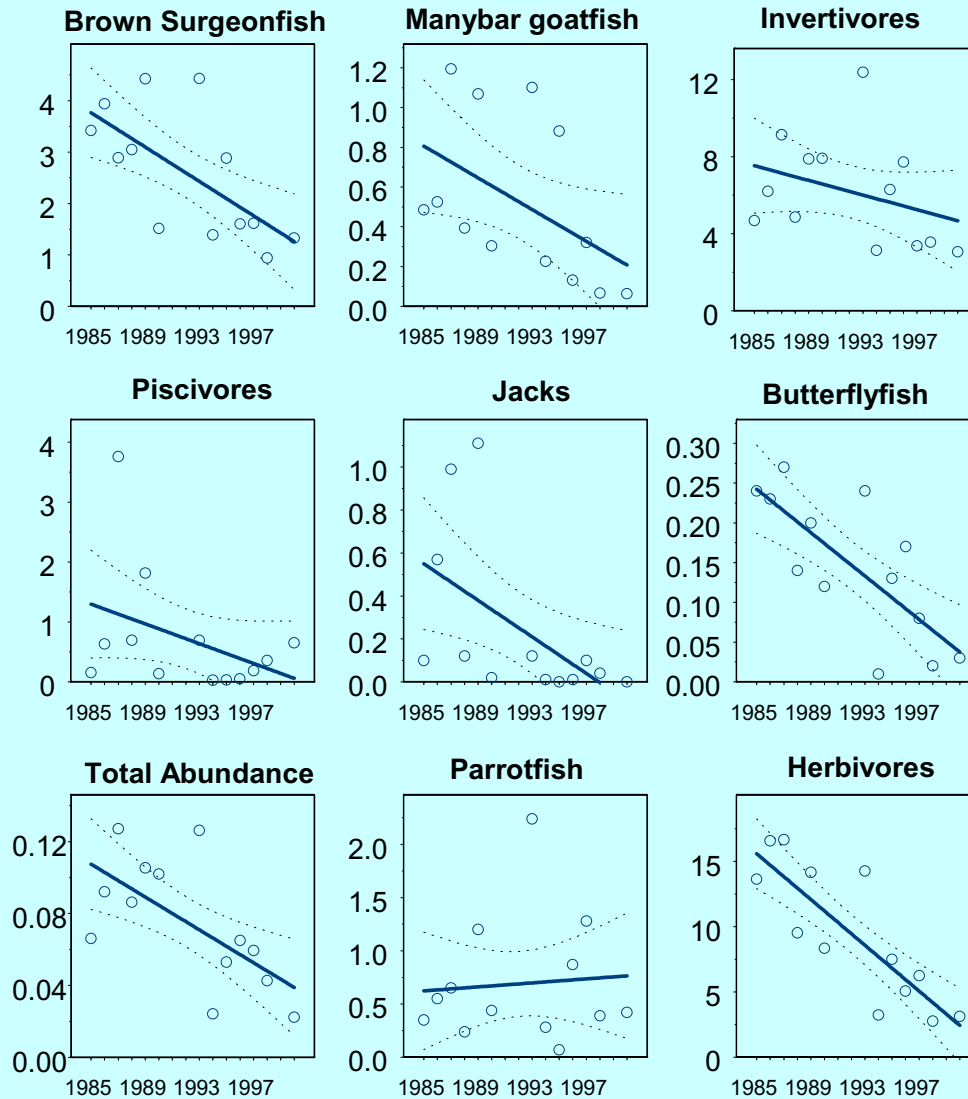
(1) No patterns evident in 'raw' data

(2) Trophic / taxonomic groupings show

- recovery in closure years
- decline in open years

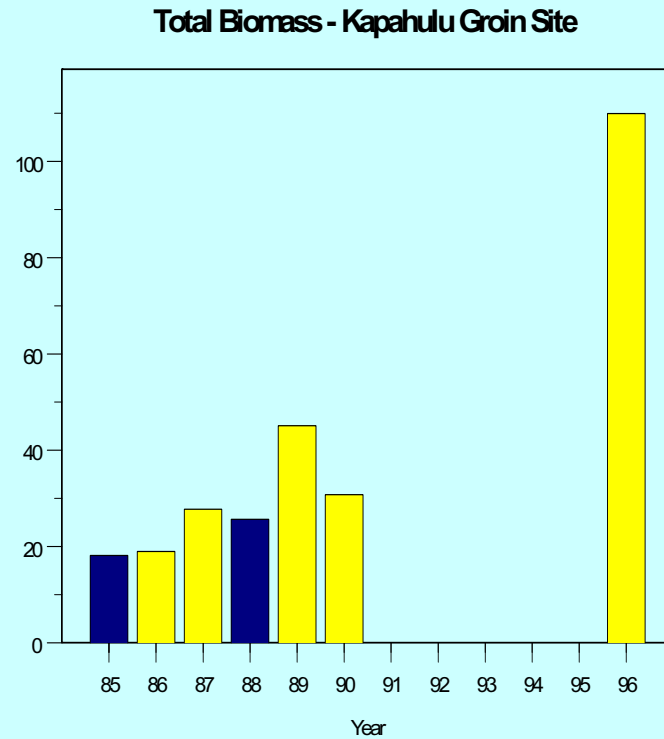
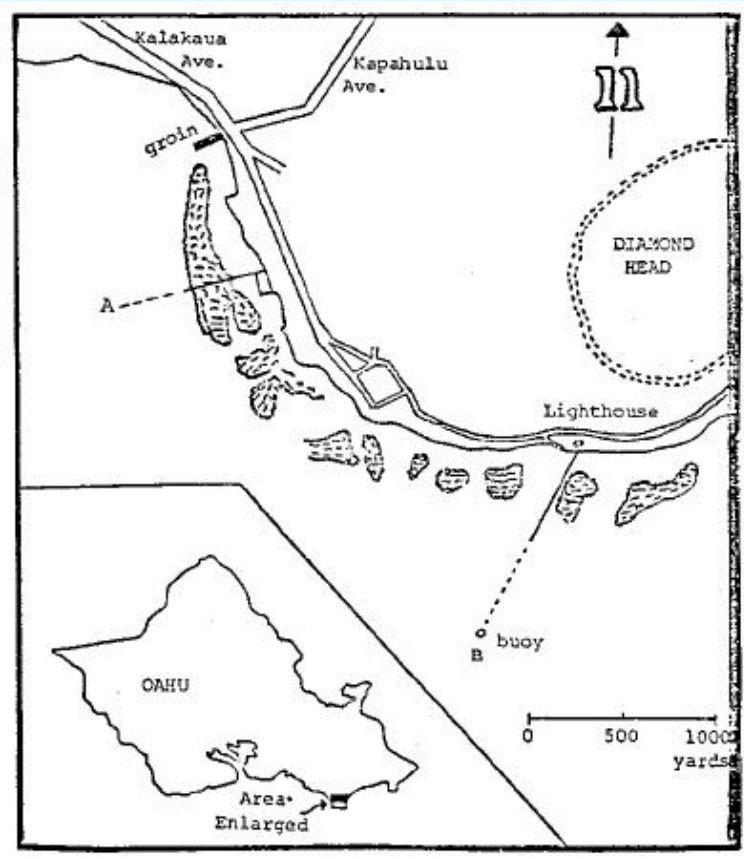


Preliminary W-DH Conclusions (2)



Overall downward trend across most groups

Preliminary W-DH Conclusions (cont)



Apparent increase since full closure – but need more data

Summary

Data Analysis

- Benefits from simple quality control
- Focused analysis necessary
- Both relatively simple with database, near impossible without

Monitoring

- Existing fish-survey data adequate for some groups, less so for others
- Scope for tighter integration of data gathering, storage and analysis
- Explicit consideration of cost & benefits of monitoring approaches