

Monitoring Visitor Usage of the Swan Estuary Marine Park



Focusing on Measures of Recreational Quality

Project by Joanna Tonge
Supervised by Dr. Sue Moore
CALM Liaison Kylie Ryan

Funded by Murdoch University and CALM Recreation and Tourism Research Reference Group

Presentation Outline

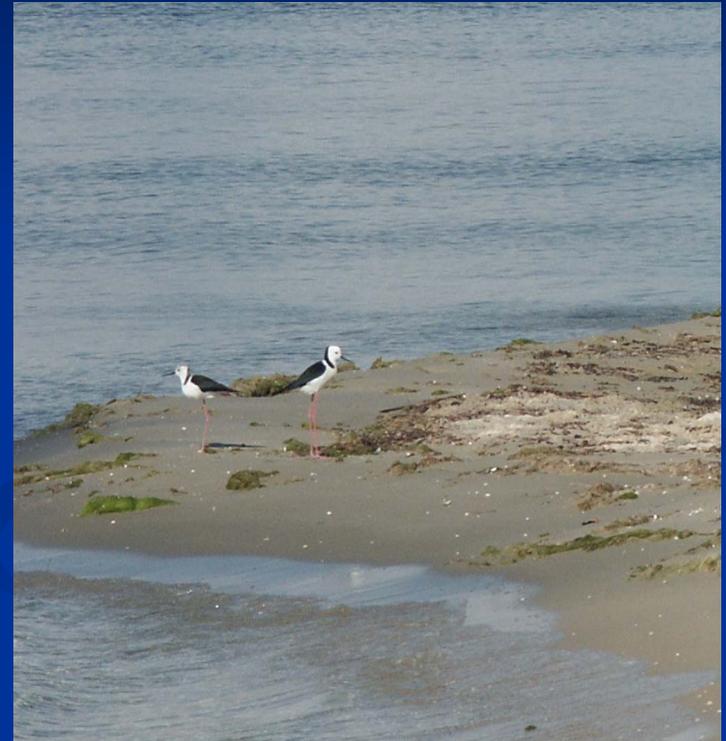
- **Introduction:**
 - Background
 - Recreational quality
- **Methodology:**
 - Visitor usage
 - Recreational quality
- **Results**
- **Comparison of measures**
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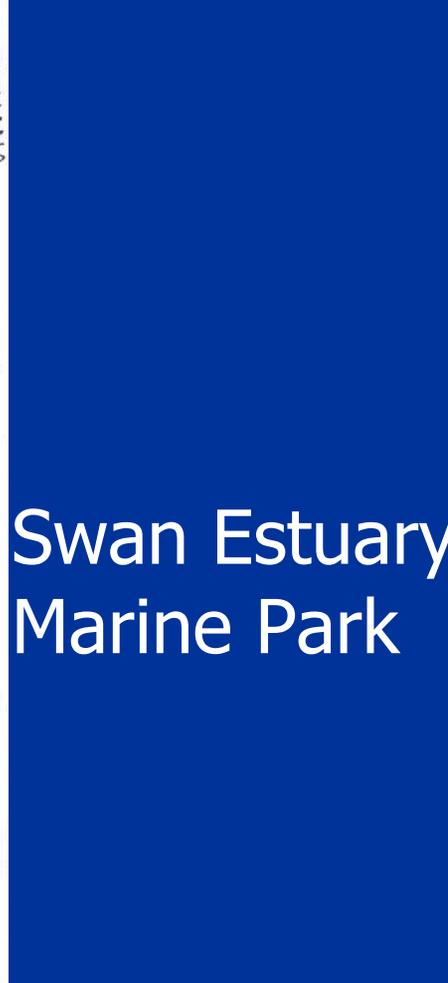
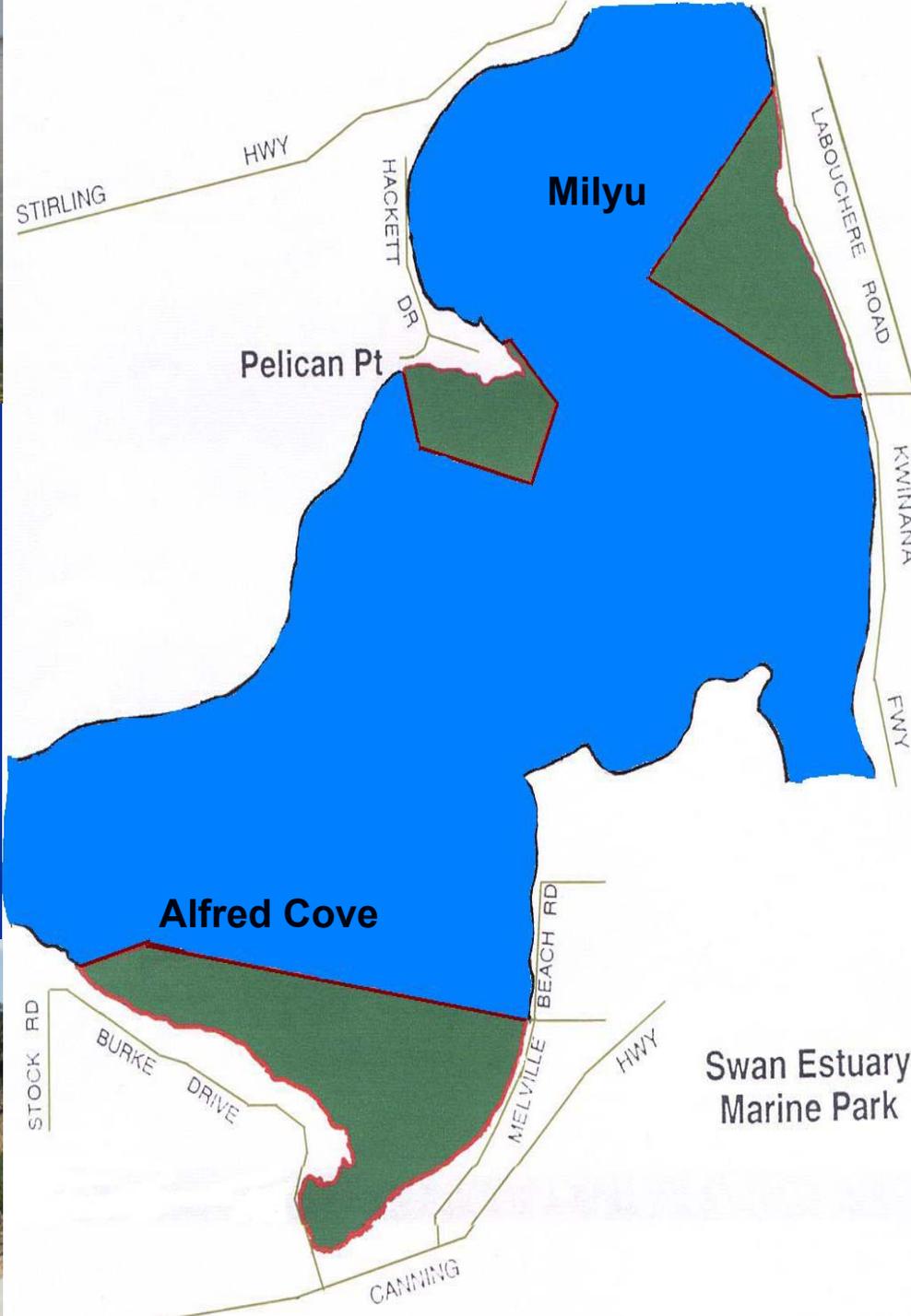


Introduction

Swan Estuary Marine Park

- Declared 25th May 1990
- 3 small areas of Swan Estuary = 340ha
 - Alfred Cove = 190ha
 - Milyu = 95ha
 - Pelican Point = 40ha
- Adjacent Nature Reserves
- Habitat for migratory water birds





Swan Estuary Marine Park

Swan Estuary
Marine Park

Introduction

Recreational Quality

- Important management objective
- Measured via visitor satisfaction
- North America: crowding
- Western Australia: “are you satisfied?”
- Need to link satisfaction with management
- Techniques suggested but no studies to test theory



Methodology

What are the visitor numbers, locations and activities in SEMP?

Visitor snapshot

Visitor questionnaire

What are visitors' preferences and expectations regarding management of SEMP?

Visitor questionnaire

Measures of recreational quality

How can social information needed for managing visitor use best be collected and recollected as needed?

Recommendations

Methodology

Visitor Snapshot

- 26th April 2003
- Observation of three sections simultaneously (aerial survey would not provide this)
- 8am, 12pm and 5pm
- Location, activity, age, gender and number recorded

Questionnaire

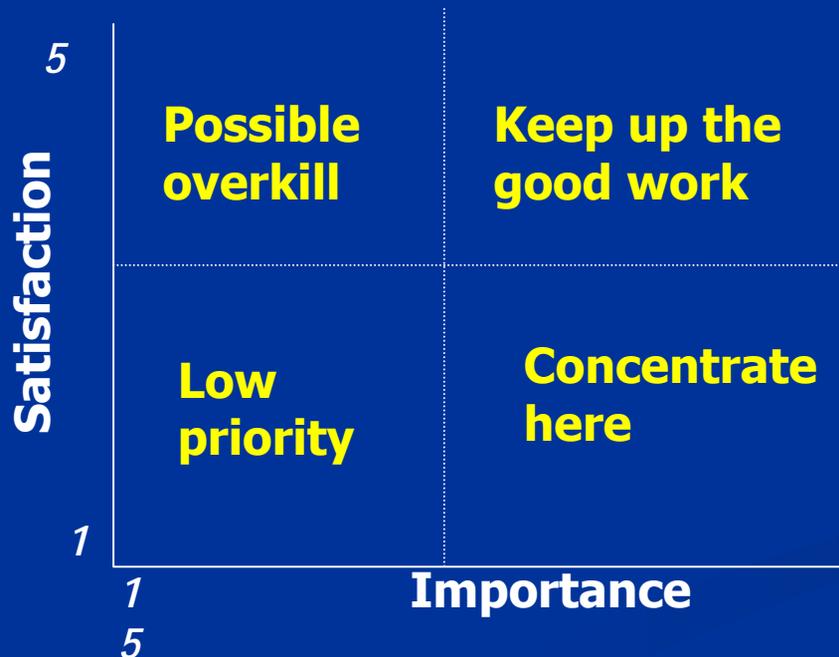
May – August 2003

- Visitor characteristics
- Visit characteristics
- Importance of environmental conditions within SEMP
- Satisfaction of environmental conditions within SEMP
- Potential management options

Methodology

Importance – Satisfaction Spatial Analyses

- Importance and satisfaction measured on same 5 - point scale, 1 = low 5 = high
- Mean of importance = x coordinate
- Mean of satisfaction = y coordinate



Methodology

Statistical Importance – Satisfaction Analyses

1. Calculation of gap = mean satisfaction – mean importance
2. Positive Gap = no management action
3. Negative Gap = management action required
4. Two sample t test whether gap value statistically significant

Environmental Condition	Satisfaction	Importance	Gap
Wildlife	4.5	3.3	+1.2
Litter	2.5	4.0	-1.5

Results

Visitor Snapshot

Total number of visitors = 486

8am = 204 (42%)

12pm = 107 (22%)

5pm = 175 (36%)

Alfred Cove = 317 (65%)

Pelican Point = 53 (11%)

Milyu = 116 (24%)

Gender:

Male = 65%

Female = 35%

Age Groups:

25 - 39 = 51%

Under 15 = 5%

Activities:

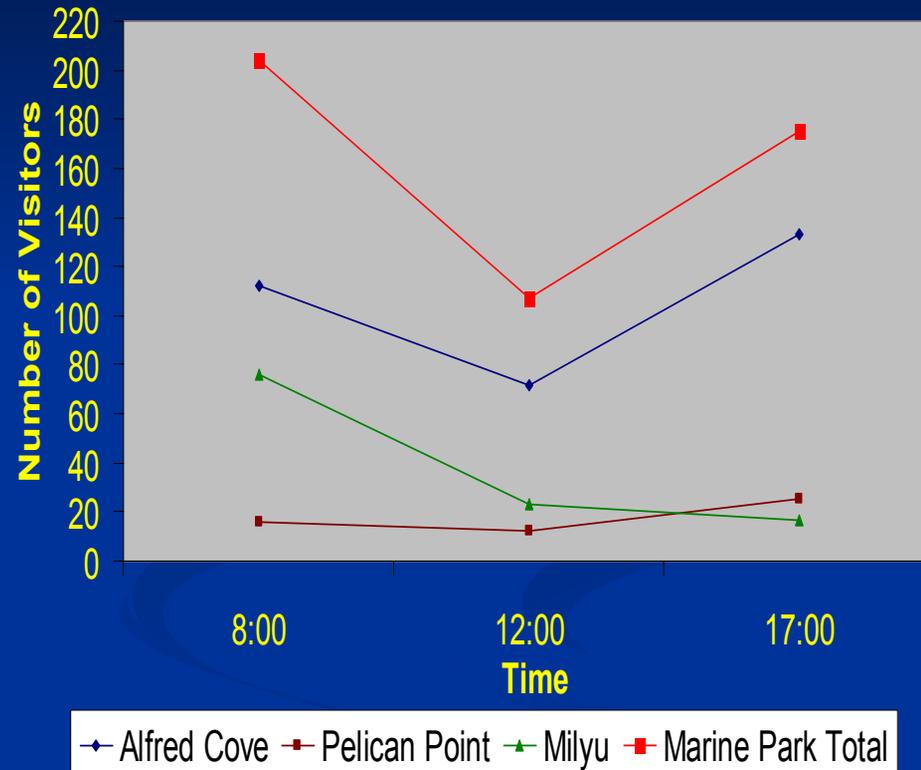
Cycling (44%)

Walking (18%)

Walking/dogs (17%)

Windsurfing (9%)

Total Numbers of Visitors to Swan Esturay Marine Park



Results

Questionnaires

132 completed, response rate 64%

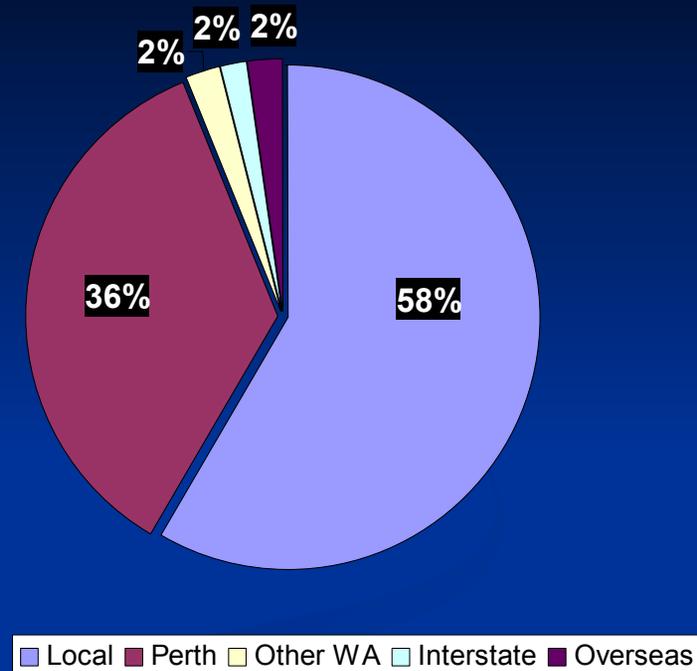
Group size = 1 (48%)

Age Group = 40-59 (41%)

Gender = Females (50%)

Couples (21%)

Activity = Walking (61%)



Higher importance = litter, wildlife

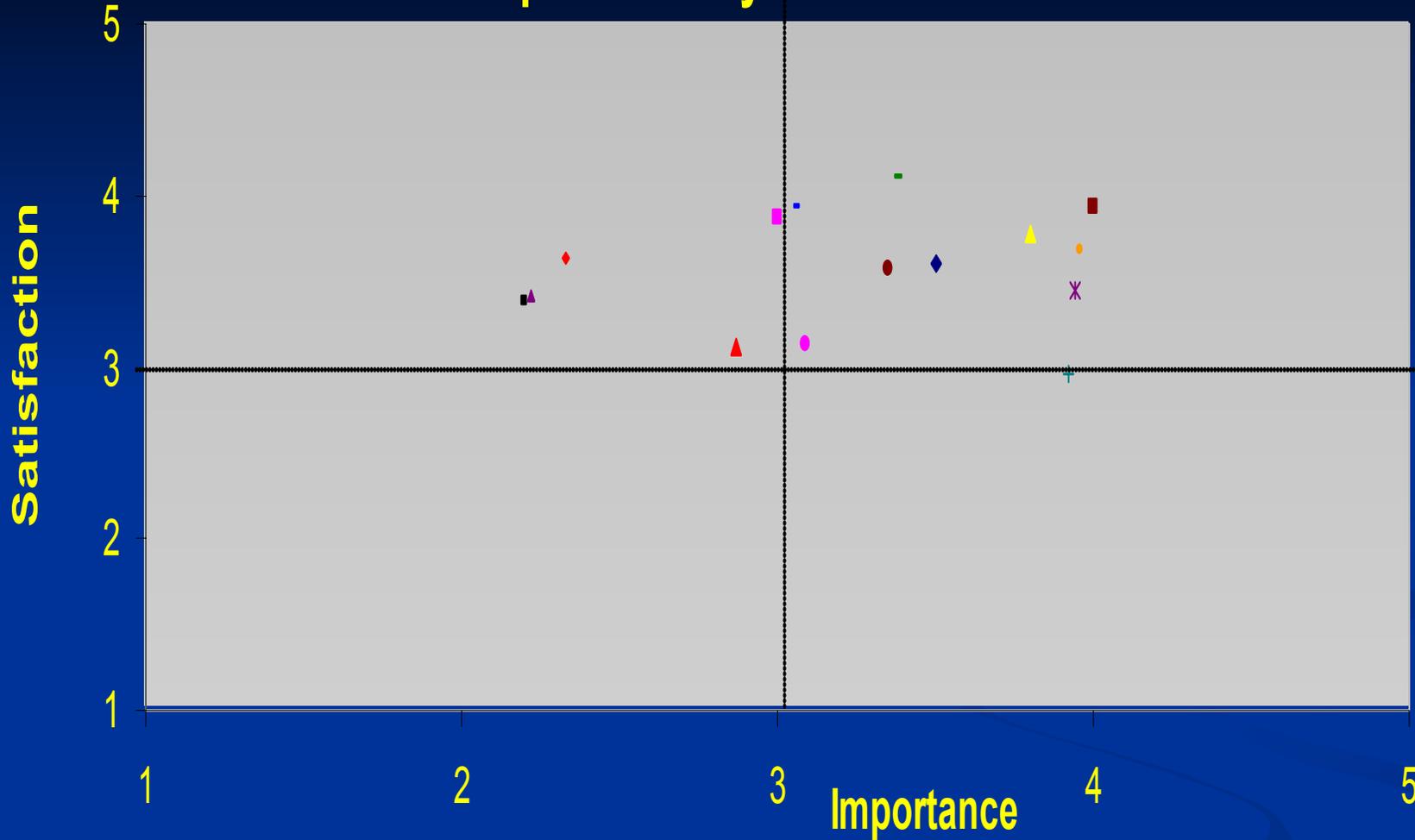
Lower importance = kitesurfers, windsurfers

Higher Satisfaction = access to River, dog restrictions

Lower satisfaction = cyclists, litter

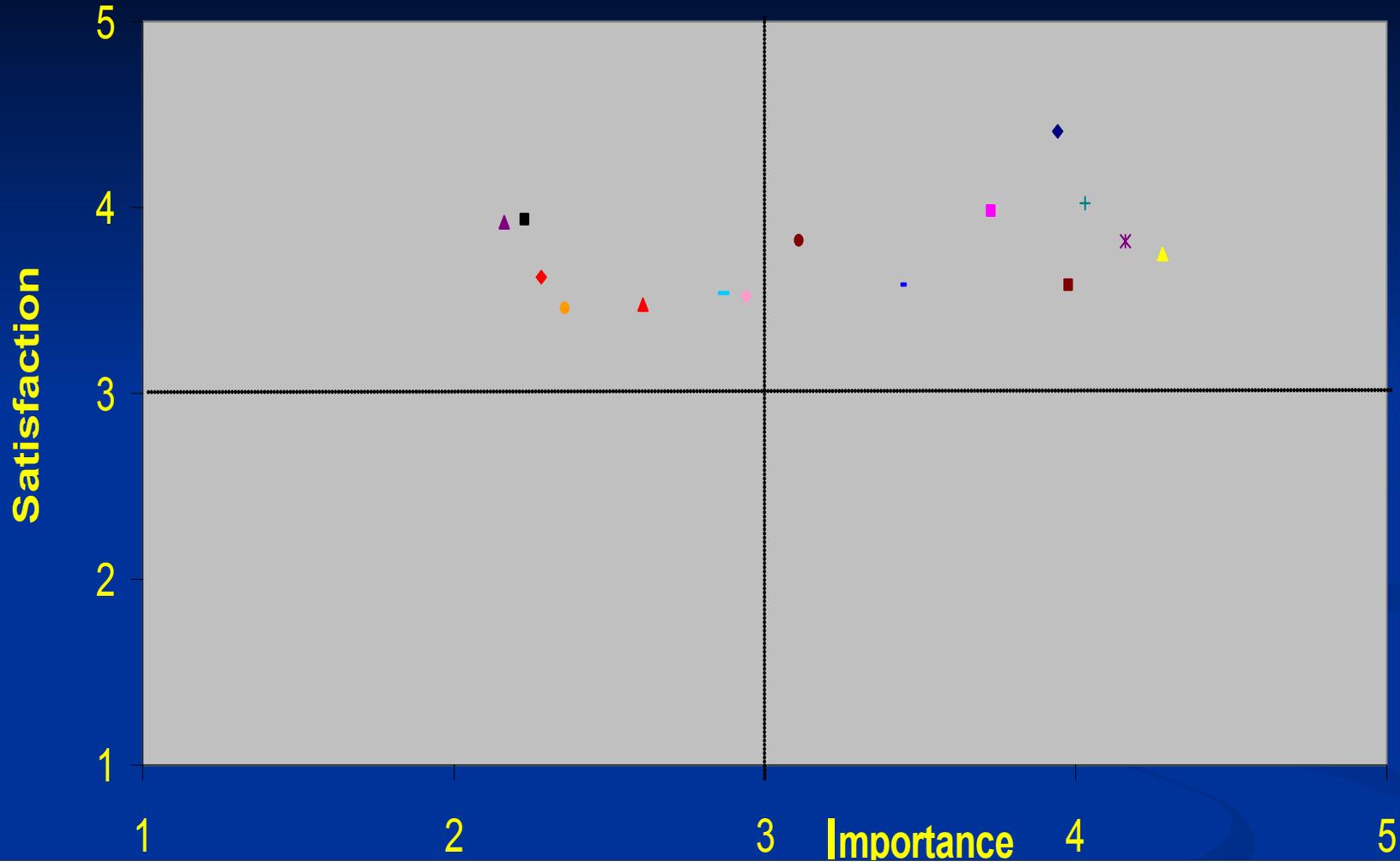
Management Options = replanting of native vegetation

Spatial Analysis for Alfred Cove



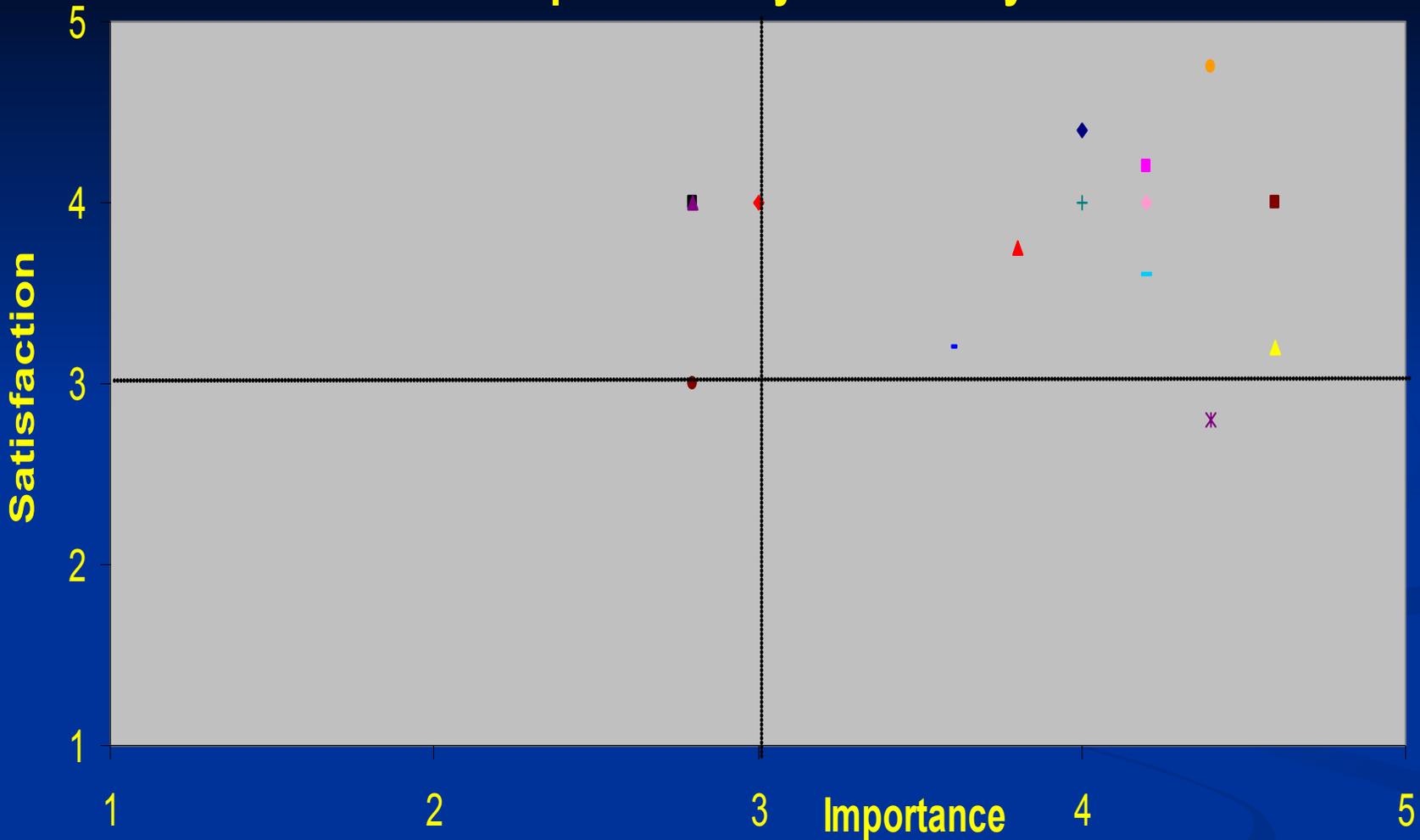
- ◆ Access to river
- Presence of wildlife
- + Condition of path
- ◆ Presence of anglers
- ▲ Presence of cyclists
- Smell of river
- × Presence of litter
- Level of noise
- Presence of windsurfers
- Presence of information signs
- ▲ Condition of river
- Places to park
- Presence of dogs
- ▲ Presence of kite surfers
- Dog Restriction

Spatial Analysis for Pelican Point



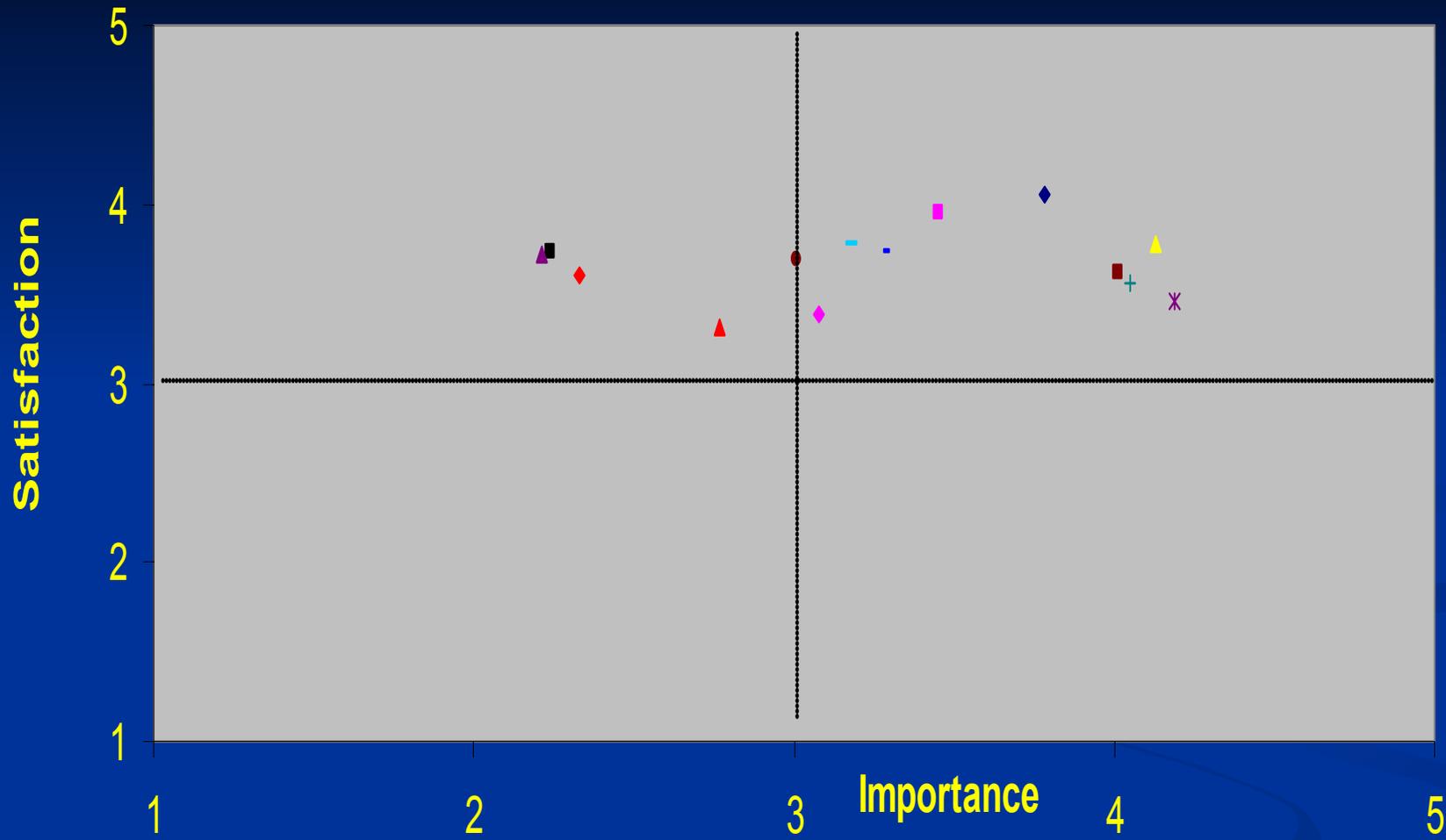
- ◆ Access to river
- Presence of wildlife
- + Condition of path
- ◆ Presence of anglers
- ▲ Presence of cyclists
- Smell of river
- × Presence of litter
- Level of noise
- Presence of windsurfers
- ◆ Presence of information signs
- ▲ Condition of river
- Places to park
- Presence of dogs
- ▲ Presence of kite surfers
- Dog Restriction

Spatial Analysis for Milyu



- ◆ Access to river
- Presence of wildlife
- + Condition of path
- ◆ Presence of anglers
- ▲ Presence of cyclists
- Smell of river
- * Presence of litter
- Level of noise
- Presence of windsurfers
- ◆ Presence of information signs
- ▲ Condition of river
- Places to park
- Presence of dogs
- ▲ Presence of kite surfers
- Dog Restriction

Spatial Analysis for SEMP



- ◆ Access to river
- Presence of wildlife
- + Condition of path
- ◆ Presence of anglers
- ▲ Presence of cyclists
- Smell of river
- * Presence of litter
- Level of noise
- ◆ Presence of windsurfers
- ◆ Presence of information signs
- ▲ Condition of river
- Places to park
- Presence of dogs
- ▲ Presence of kite surfers

Results

Spatial Analyses

Environmental Condition	Alfred Cove Matrix	Pelican Point Matrix	Milyu Matrix
Litter	B	B	D
Places to park	A	B	C
Access to River	B	B	B
Presence of wildlife	B	B	B

Categories:

A = Possible overkill

B = Keep up the good work

C = Low priority

D = Concentrate here

Results

Statistical Analyses

Environmental Condition	Alfred Cove	Pelican Point	Milyu
Access to River	0.2	0.46*	0.4
Smell of the River	0.92*	0.31	0
Condition of the River	0.06	-0.5*	-1.4
Presence of wildlife	-0.33	-0.36*	-0.4
Presence of litter	-0.61*	-0.63*	-1.6
Places to park	0.78*	0.60*	-0.25
Condition of the path	-1*	0.03	0

* Denotes a statistically significant Gap value

Denotes that management attention is required

Results

Conditions that require Management Attention

Environmental Condition and Location	Spatial Method	Statistical Method
Alfred Cove Presence of wildlife	No	Yes
Presence of litter	No	Yes
Condition of path	Yes	Yes
Pelican Point Condition of River	No	Yes
Presence of litter	No	Yes
Presence of wildlife	No	Yes
Milyu Presence of litter	Yes	No

Comparison of Methods

Spatial Analyses

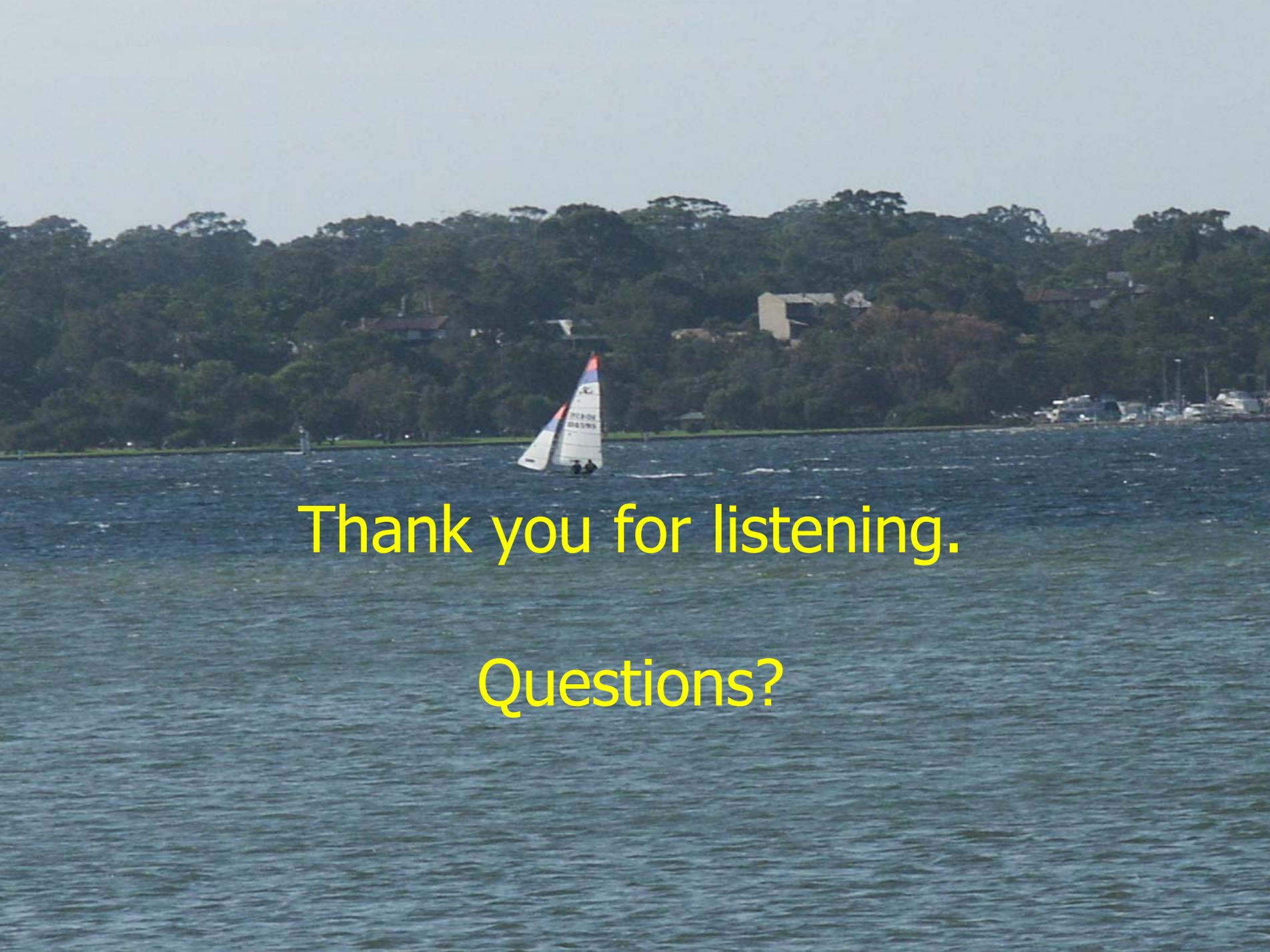
- Visual
- Simple analysis
- Good for managers with:
 - small budget
 - limited computer knowledge
 - limited statistical knowledge

Statistical Analyses

- Easy to store
- Easy to interpret
- More statistically sound
- Easily tabulated for use in Annual Report

Recommendations

1. Repetition of visitor survey in summer months
2. Treat each section of SEMP as separate management identity
3. Adopt management practices supported by visitors
4. Rectify conditions that were identified as requiring improvement
5. Examine feasibility of adopting a integrated visitor monitoring program
6. Examine feasibility of adopting statistical importance – satisfaction analyses

A photograph of a sailboat with a white sail and a red and blue stripe on the top edge, sailing on a dark blue body of water. In the background, there is a dense forest of green trees on a hillside, with a few buildings visible through the trees. The sky is a pale, clear blue.

Thank you for listening.

Questions?