Supplementary material

## Questions for the Local Practitioners and Specialists (LPS).



**UC College of Science**

School of Biological Sciences Location:

Tel: (03) 364 2500, Fax: + 64 364 2590 Date and time:

Email: biology@canterbury.ac.nz

Project title: Natural resource management of the fishery

**Questions for local practitioners, stewards, managers, authority, long-term residents group participants**

Name/anonymous:

Ethnicity:

Cultural affiliation(s):

Sex: Female/Male Age: >18-20, 21-30 ,31-40, 41-50, 51-60, 61-70,71-80, 81-90, 91+.

Your role in the Group/Organisation:

Number of years in the role:

Location of Fishery Area:

Your residence:

**SITE INFORMATION**

1. Is this site valued as an area that was used in traditional / non-traditional / other historical uses (e.g. traditional fishery?) Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Today, is this a site of cultural use? YES/NO or Other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. How often do you visit this site? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Have you done any of these activities here (when was the most recent account: \_\_\_\_\_)?

 Collect living animal/plant/other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to eat, bait, material, other\_\_\_\_\_\_\_\_\_\_\_\_

 Collect non-living shells/stones/plant/other\_\_\_\_\_\_\_\_ to eat, bait, material, other\_\_\_\_\_\_\_\_\_\_\_\_

 (Leisure) walk/run/swim/bathe/sit and be outside/boat, other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Other or Extra notes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What is the best time(s) of the year for this activity (above)?

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What part of this site do you do this activity? (E.g. mid-tide, low-tide, in the water at low tide…) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. How far do you go/walk to your site (metres)? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. How long do you spend here (per day) doing this activity? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**FISHERY AND ENVIRONMENTAL HEALTH**

1. What living plants/animals/others do you favour as a resource (bait, food, other)? Please list these:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Have these changed in abundance in the last 30 years? YES/NO

NOTE: If there are recollections more recent, 10/20 years, add to the bottom of the questionnaire.

* 1. If YES, what abundance remains today compared to the past 30 years?

|  |  |
| --- | --- |
| Species name: | % of the past species abundance that is available today |
| 1. | 10%, 25%, 50%, 75%, 100% n/a |
| 2. | 10%, 25%, 50%, 75%, 100% n/a |
| 3. | 10%, 25%, 50%, 75%, 100% n/a |
| 4. | 10%, 25%, 50%, 75%, 100% n/a |
| 5. | 10%, 25%, 50%, 75%, 100% n/a |
| 6. | 10%, 25%, 50%, 75%, 100% n/a |
| 7. | 10%, 25%, 50%, 75%, 100% n/a |
| 8. | 10%, 25%, 50%, 75%, 100% n/a |

* 1. Are there any other species gathered in the past that are not available today?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. How would you describe the general condition of the site where you do the above activity? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

CONDITION SCALE: 1 2 3 4

 Poor Fair Good Excellent

1. How would you describe the general condition of the wider catchment area? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Would you return to the site in future? YES/NO, please explain:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What are the main environmental indicators that you use to signal good/poor environmental conditions in relation to your activities?

|  |  |
| --- | --- |
| Good Indicators | Poor Indicators |
|  |  |
|  |  |
|  |  |
|  |  |

**MANAGEMENT**

1. What main changes (if any) have you seen in this area over time? (time reference \_\_\_\_\_\_\_\_)
* Catchment land use
* Water quality
* Water Flow
* Sediment
* Other if YES, what are they: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

If YES to any of the above, please explain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Do you know what the current management is here? YES/NO

If YES, what are the current regulations: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. If YES, do you think the current management is effective? YES/NO

Please explain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. What are the geographical boundaries of this management area?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Is this management boundary the same as what was in the past? YES/NO

If NO, please explain: (perhaps change in physical managed area, or change in social community)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**DO YOU HAVE ANY FURTHER COMMENTS?**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**From question 10 - if required:** What abundance remains today compared to the past 10/20 (CHOOSE ONE) years?

|  |  |
| --- | --- |
| Species name: | % of the past species abundance that is available today |
| 1. | 10%, 25%, 50%, 75%, 100% n/a |
| 2. | 10%, 25%, 50%, 75%, 100% n/a |
| 3. | 10%, 25%, 50%, 75%, 100% n/a |
| 4. | 10%, 25%, 50%, 75%, 100% n/a |
| 5. | 10%, 25%, 50%, 75%, 100% n/a |
| 6. | 10%, 25%, 50%, 75%, 100% n/a |
| 7. | 10%, 25%, 50%, 75%, 100% n/a |
| 8. | 10%, 25%, 50%, 75%, 100% n/a |

**NGĀ MIHI NUI, THANK YOU VERY MUCH**

## Questions for the Recreational Participants (RP).



**UC College of Science**

School of Biological Sciences

Tel: (03) 364 2500, Fax: + 64 364 2590 Location:

Email: biology@canterbury.ac.nz Date and time:

Project title: Natural resource management of the fishery

**Questions for recreational group participants**

Name /anonymous:

 Ethnicity:

Cultural affiliation(s):

Sex: Female/Male Age: <20 21-30 31-40 41-50 51-60 61-70 71-80 81-90 91+

Your residence:

**SITE INFORMATION**

1. Why are you here today? To:

 Collect living animal/plant/other\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to eat, bait, material, other\_\_\_\_\_\_\_\_\_\_\_\_\_

 Collect non-living shells/stones/plant/other\_\_\_\_\_\_\_\_ to eat, bait, material, other\_\_\_\_\_\_\_\_\_\_\_\_\_

 (Leisure) walk/run/swim/bathe/sit and be outside/boat, other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Other or Extra notes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. How often do you visit this site? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What is the best time of the year for this activity (above)? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. What part of this site do you do this activity? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. How far do you go/walk to your site (metres)? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. How long do you spend here (per day)? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**FISHERY AND ENVIRONMENTAL HEALTH**

1. What living plants/animals/others do you favour as resource (bait, food…)? Please list these:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. In the last 30 years, have these changed in abundance? YES/NO

NOTE: If there are recollections more recent, 10/20 years, add to the bottom of the questionnaire.

* 1. If YES, what abundance remains today compared to the past 30 years?

|  |  |
| --- | --- |
| Species name: | % of the past species abundance that is available today  |
| 1. | 10%, 25%, 50%, 75%, 100% n/a |
| 2. | 10%, 25%, 50%, 75%, 100% n/a |
| 3. | 10%, 25%, 50%, 75%, 100% n/a |
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* 1. Are there any other species gathered in the past that are not available today?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. How would you describe the general condition of the site where you do the above activity? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

CONDITION SCALE: 1 2 3 4

Poor Fair Good Excellent

1. How would you describe the general condition of the wider catchment area? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Would you return to the site in future? YES/NO, please explain:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What are the main environmental indicators that you use to signal good/poor environmental conditions in relation to your activities?

|  |  |
| --- | --- |
| Good Indicators | Poor Indicators |
|  |  |
|  |  |
|  |  |

**MANAGEMENT**

1. What (if any) main changes you have seen in this area over time? (time reference \_\_\_\_\_\_\_\_)
* Catchment land use
* Water Flow
* Sediment
* Water quality
* Others: if YES, what are they: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

If YES to any of the above, please explain:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Do you know what the current management is here? YES/NO
2. If YES, what are the current regulations: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. If YES, think the current management is effective? YES/NO

Please explain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What are the geographical boundaries of this management area?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Is this management boundary the same as what was in the past? YES/NO

If NO, please explain: (perhaps change in physical managed area, or change in social community)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**DO YOU HAVE ANY FURTHER COMMENTS?** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Q8. If required:** What abundance remains today compared to the past 10/20 (CHOOSE ONE) years?

|  |  |
| --- | --- |
| Species name: | % of the past species abundance that is available today |
| 1. | 10%, 25%, 50%, 75%, 100% n/a |
| 2. | 10%, 25%, 50%, 75%, 100% n/a |
| 3. | 10%, 25%, 50%, 75%, 100% n/a |
| 4. | 10%, 25%, 50%, 75%, 100% n/a |

**NGĀ MIHI NUI, THANK YOU VERY MUCH.**

Proportion of good (A) and poor (B) environmental indicators per estuary in Waitaha that were utilised by Local Practitioners and Specialists (LPS) and Recreational Participants (RP).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| A. Indices rated good  | Rakahuri-SaltwaterCreek Estuary | Avon-HeathcoteEstuary | Rāpaki Bay | Koukourārata | **Total good scores****% and (n)** |
| Group (n) | LPS (7) | RP (20) | LPS (5) | RP (21) | LPS (6) | RP (21) | LPS (5) | RP (21) | **LPS (23)** | **RP (83)** |
| **Catchment** |  |  |
| Land use & cover/riparian (%) | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | **6 (3)** | **1 (1)** |
| **Site environmental condition** |  |  |
| Water indices | 8 | 3 | 4 | 2 | 0 | 0 | 3 | 5 | **78 (18)** | **12 (10)** |
| >Water colour/clarity | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 4 (1) | 4 (3) |
| >Water quality/condition | 0 | 1 | 3 | 1 | 0 | 0 | 2 | 2 | 22 (5) | 5 (4)  |
| >Water flow/current | 4 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 22 (5) | 4 (3) |
| >Water volume | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 (1) | 0 (0) |
| >Water input/flushing | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 26 (6) | 0(0) |
| Sediment indices | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | **6 (3)** | **2 (2)** |
| Contaminants/safety | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | **0 (0)** | **4 (3)** |
| **Estuarine life** |  |  |
| Fish/shellfish indices | 3 | 10 | 4 | 1 | 1 | 3 | 2 | 0 | **43 (10)** | **17 (14)** |
| Birds | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | **8 (2)**  | **4 (3)** |
| Aquatic plants | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | **8 (2)** | **0 (0)** |
| **Local presence/knowledge** |  |  |
| People presence | 0 | 1 | 1 | 1 | 1 | 3 | 2 | 2 | **17 (4)** | **8 (7)** |
| Experience/knowledge/sensory | 7 | 3 | 1 | 1 | 0 | 3 | 0 | 0 | **35 (8)** | **8 (7)** |
| Weather/lunar indices | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | **8 (2)** | **2 (2)** |
| **Inner-harbour/land-practices** |  |  |
| Practices (land-sea, rāhui) | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | **8 (2)** | **0 (0)** |
| Harbour (dredging, debris, aqua-farm) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0 (0)** | **0 (0)** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| B. Indices rated poor | Rakahuri-SaltwaterCreek Estuary | Avon-HeathcoteEstuary | Rāpaki Bay | Koukourārata | **Total poor scores** |
| Group (n) | LPS (7) | RP (20) | LPS (5) | RP (21) | LPS (6) | RP (21) | LPS (5) | RP (21) | **LPS (23)** | **RP (83)** |
| **Catchment** |  |  |
| Land use & cover/riparian | 2 | 0 | 0 | 1 | 3 | 0 | 4 | 0 | **11 (9)** | **1 (1)** |
| **Site environmental condition** |  |  |
| Water indices | 5 | 1 | 2 | 0 | 2 | 1 | 0 | 0 | **39 (9)** | **2 (2)** |
| >Water colour/clarity | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 17 (4) | 0 (0) |
| >Water quality/condition | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 7 (2) | 0 (0) |
| >Water flow/current | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 (1) | 1 (1) |
| >Water volume | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 7 (2) | 1 (1) |
| >Water input/flushing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 (0) | 0 (0) |
| Sediment indices | 3 | 1 | 5 | 1 | 5 | 1 | 8 | 4 | **91 (21)** | **8 (7)** |
| Contaminants/safety | 2 | 0 | 5 | 3 | 5 | 1 | 6 | 3 | **78 (18)** | **8 (7)** |
| **Estuarine life** |  |  |
| Fish/shellfish indices | 0 | 0 | 0 | 1 | 3 | 0 | 3 | 0 | **26 (6)** |  **1 (1)** |
| Birds | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | **13 (3)** | **0 (0)**  |
| Aquatic plants | 2 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | **17 (4)** | **4 (3)** |
| **Local presence/knowledge** |  |  |
| People presence | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0**  | **0**  |
| Experience/knowledge/sensory | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **4 (1)** | **0** |
| Weather/lunar indices | 2 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | **22 (5)** | **0** |
| **Inner-harbour/land-practices** |  |  |
| Practices (land-sea, rāhui) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0**  | **0** |
| Harbour (dredging, debris, aqua-farm) | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 3 | **17 (4)** | **4 (3)** |